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# CROSS-SECTIONAL STUDY OF JOB EMBEDDEDNESS FACTORS IN ELDERLY CARE SETTINGS

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**Article Info**

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**Abstract**

The study investigates job embeddedness and the influencing factors among elderly care workers. A cross-sectional survey was conducted to collect data from 325 elderly care workers. The demographic questionnaire, Job Embeddedness Scale (JES), and Workplace Loneliness Scale were applied. The findings reveal that the level of job embeddedness among elderly care workers is moderate, but about one in every seven elderly caregivers is at a low level of JE. Age, marital status, working years, and workplace loneliness are the influencing factors of JE for geriatric caregivers. Managers should focus on young, single, and short-serving geriatric caregivers, who are more likely to have low levels of job embeddedness. Moreover, interventions should be developed to alleviate workplace loneliness among elderly care workers, improving their job embeddedness and stabilizing the elderly care team.

## INTRODUCTION

Aged care is one of the fastest-growing sectors in the nursing economy worldwide due to an aging demographic (Ratcheva et al., 2020). However, the shortage of elderly care workers is serious in the market. It is estimated that the number of frontline elderly care workers will need to rise fourfold to meet the growing global population (Thwaites et al., 2023). China is one of the world's fastest-aging countries (Man et al., 2021). Presently, approximately 18.94% of China's total population is aged 60 or above, with over 40 million individuals classified as disabled or semi-disabled elderly (Zhang et al., 2020). Moreover, China's elderly care model is shifting from home-based care to institutional care. Therefore, the demand for elderly care professionals is on the rise. However, data reveals a severe shortage of existing elderly care workers in China, with a deficit of 500-600 thousand professionals. What exacerbates the situation is the staggering turnover rate of existing elderly care workers, which stands at a high of 80-90% every three years (Lu et al., 2020). Similarly, upwards of 90% of elderly care workers spend less than one year in care support roles in the United States (Gandhi et al., 2021). Thus, it can be seen that the shortage of elderly care workers is a critical issue globally. The high turnover rate of elderly care workers negatively affects job satisfaction, productivity, and the quality of services to the elderly (Zheng et al.,

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2022). Thus, it is necessary to search for the reasons for the turnover of elderly care workers and to improve their retention.

Regarding turnover and retention, job embeddedness (JE) was originally proposed by Mitchell et al. (Mitchell et al., 2001). JE is considered to be the network linking an organization and community, including links, fit, and sacrifices related to the job (Liao et al., 2023). The links represent an individual's connection to colleagues and the community. Fit is the degree to which individuals adapt in organizations and communities. Sacrifice refers to the loss associated with an individual's departure from work and community (Porter et al., 2019). JE focuses on the causes of turnover rather than the incidence (Reitz, 2014). That is, JE is an aggregation that objectively reflects the reasons for employee retention and can predict the turnover rate of employees. It is a novel measurement to elucidate the reasons for employee retention, which has received extensive attention (Xue et al., 2023). In particular, research on the JE of nursing staff has aroused the interest of scholars (El-Sayed et al., 2023; Li et al., 2023; Zhang et al., 2023; Zohourparvaz and Vagharseyyedin, 2023). A low level of JE is strongly associated with low levels of job performance, low productivity, burnout, and increased turnover (Halbesleben and Wheeler, 2008). However, there are very few studies conducted on JE among elderly care workers (Radford et al., 2015; Gibbs and Duke, 2021). Given the high turnover of geriatric caregivers, a better understanding of their JE level is necessary to prevent the potential harm caused by low JE and improve retention.

Reviewing previous literature reveals that many studies have been conducted on the relationship between JE and turnover intention, but relatively little focus on the influencing factors of JE (Xue et al., 2023). Among the myriad factors affecting turnover intention, loneliness, as an individual factor, represents the most basic and primitive subjective feeling of human beings; few can avoid this emotional experience in life (Leigh-Hunt et al., 2017). As the internet permeates every aspect of social life, the psychological distance between people is gradually widening, and the problem of loneliness is becoming more prominent (Zhang and Dong, 2022). Loneliness in the workplace occurs when individuals lack desired social relationships at work (Wright et al., 2006). Workplace loneliness is perceived as a negative emotion in work situations, as employees' needs for affiliation are not met by their co-workers and the organization (Wright and Silard, 2020). Workplace loneliness has been widely discussed by scholars and managers in recent years. When employees' workplace loneliness continuously increases, it can lead to fear, anxiety, and other negative emotions, endangering physical and mental health (Gilmer et al., 2023). Additionally, workplace loneliness has a pernicious impact on employee happiness, organizational commitment, job performance, creativity, and work engagement (Peng et al., 2017; Basit and Nauman, 2022; Wax et al., 2022; Tian et al., 2023).

Loneliness at work is associated with turnover tendency, especially in high-pressure industries such as healthcare and education, with relatively low salaries, including the elderly care industry (Ruan and Chen, 2022). Therefore, it is significant to explore whether workplace loneliness affects JE among elderly caregivers. However, there is limited evidence on workplace loneliness and JE.

This article aim to investigate: (a) The level of JE among elderly caregivers; (b) whether there are significant differences in JE among elderly caregivers with different sociodemographic characteristics; and (c) whether workplace loneliness affects JE among elderly caregivers in China. By addressing the above research questions, one can better understand the retention factors of elderly caregivers, which is of great value in stabilizing the elderly care team and alleviating the shortage of elderly care workers.

## METHODS

### Research design and sample

A cross-sectional survey was conducted to collect survey data from elderly care workers in Hunan Province, China. According to the calculation, the sample size needed to be at least five times the number of items in the

questionnaire. With 23 items in the Job Embeddedness Scale and 10 items in the Work Loneliness Scale, the sample size was calculated using the formula N = (23 + 10) × 5 = 165, indicating that at least 165 subjects were required for this study (Wu et al., 2023). Between February and May 2023, 325 elderly care workers in Hunan Province were recruited.

Inclusion criteria were as follows: 1) Directly engaged in elderly care work; 2) working for more than 6 months; and 3) providing informed consent and volunteering to participate. Exclusion criteria included: Not agreeing to cooperate with investigators and individuals who were studying abroad or on leave.

**Data collection**

The survey was conducted using a combination of online survey (Questionstar) and on-site questionnaire. We contacted the relevant person in charge of elderly care institution, introduced in detail how to fill in the questionnaire, the precautions to be taken, the principle of confidentiality, and other matters. The electronic questionnaire was distributed within the working group with their consent. Meanwhile, paper questionnaires were issued on-site, and those who filled out the electronic questionnaire did not fill out the on-site questionnaire at the same time. The survey included general information, Job Embeddedness Scale, and Workplace Loneliness Scale. All entries were set as mandatory questions, and the questionnaire could not be submitted until all questions were completed, with the questionnaire taking approximately 10 minutes to complete. A total of 346 questionnaires were distributed in this study, excluding invalid responses (response time below 30s, obvious errors in the options), 325 valid questionnaires were recovered, with an effective response rate of 93.9%..

**Instrument**

***Demographic questionnaire***

The demographic questionnaire was self-designed, including age, gender, ethnic group, marital status, educational level, position, monthly income, working years and work intensity.

***Job embeddedness scale***

The 23-items Job Embeddedness Scale developed by Mitchell et al. (2001), and translated by Yang et al. (2019) was employed to measure JE of elderly care workers. The scale contains two dimensions, namely regional factor and organizational factor, both of which include linkage, sacrifice, and matching. Cronbach's alpha for this scale was 0.829 (Yang et al., 2019). The items were rated on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree), with lower scores showing lesser JE. The total score of JE is divided into three levels: low (< 60), moderate (61~90), high (> 91). For this study, Cronbach's alpha was 0.844 which falls in the range 0.8 - 0.9 labeled “Very Good” (Hejase and Hejase, 2013). This indicates a very good strength of association and proves that the selection of the questions is suitable for the questionnaire purpose.

***Workplace loneliness scale***

The Workplace Loneliness Scale, consisting of 10 items, was developed by Mao et al. (2013) and utilized in this study. Cronbach's alpha for this scale was reported as 0.884. An example item from the scale is: "I often feel alienated from my colleagues at work." The scale employed a 5-point scoring method (1 = strongly disagree, 5 = strongly agree), where higher scores indicate greater workplace loneliness. In this study, the calculated Cronbach's alpha was 0.931, indicating high internal consistency.

**Data analysis**

The Statistical Product and Service Solutions IBM SPSS 22.0 (Hejase and Hejase, 2013) was employed to analyze the collected data. Descriptive statistics were utilized to summarize participants’ characteristics and scores of JE and workplace loneliness. Differences in JE among elderly care workers based on participants’ characteristics were analyzed using independent t-tests and oneway ANOVA. The correlations between JE and workplace loneliness were examined using Pearson’s correlation coefficient. Multiple linear hierarchical

regression analysis was conducted on JE to ascertain the contributions of demographic characteristics and workplace loneliness. All statistical analyses were two-sided, and significance was set at $p < 0.05$.

**Ethical approval**

The study was approved by the Changsha Social Work College Medical Ethics Committee.

**RESULTS Demographic characteristics**

Table 1 presented the demographic characteristics of elderly care workers. Most participants were female, accounting for 94.8% of the sample. More than half of the participants were aged 31□50 (n = 234， 72%), and were married (n = 243， 74.8%). Among the participants, 143
(44.0%) had junior high school education or below, 159
(48.9%) had secondary school or junior college education, and 23 (7.1%) had bachelor's degree or above; About half of the participants had 4□10 years of work experience (n = 169, 52%) and monthly income between 3,000 and 5,000 yuan (n = 178, 54.8%); The majority were ordinary employees (n = 261, 80.3%) and reported high work intensity (n = 252, 77.5%); This study showed significant differences in JE among elderly care workers between age, marital status, education level, position, monthly income, years of working and work intensity ( $P < 0.001$).

**Descriptive statistics and correlations**

Within the sample, the JE score was 68.58 ± 8.28, the mean score of items was 2.98 □ 0.74. The mean scores of items in organizational factors and regional factors were 2.66 □ 0.69 and 3.41 □ 0.63, respectively. 43 participants (13.2%) reported an overall score of less than 60 as a low level of JE, 280 participants (86.2%) reported an overall score of 60~90 as a moderate level of JE, and only two participants reported a score of more than 90 as a high level of JE. The score of workplace loneliness was 33.125 ± 3.46, and the mean score of items was 3.31 □ 0.36, indicating that employees had a high degree of workplace loneliness. Correlation analysis showed that workplace loneliness was negatively correlated with JE ($r = -0.656$, $P < 0.001$), organizational factors ($r = -0.754$, $P < 0.001$), and regional factors ($r = -0.099$, $P < 0.001$), Table 2.

**Multiple linear hierarchical regression analysis of JE**

Multiple linear hierarchical regression was used to examine the influence of workplace loneliness on JE among elderly care workers (Table 3). Age, marital status, education level, position, monthly income, years of working, and work intensity (demographic information with $P < 0.05$ in the univariate analysis of Table 1) were used as independent variables of model 1, and JE was used as the dependent variable. Model 2 added workplace loneliness to the model. Regression analysis showed that model 2 was effective ($F$=67.723, $P < 0.001$), and the $R^2$ increased by 13.2, indicating that workplace loneliness explained 13.2% of the variance in JE on the model 2. The regression coefficients of age, marital status, years of working and workplace loneliness were significant ($P < 0.05$). The extent to which JE was influenced by workplace loneliness was highest, followed by age, years of working and marital status, in decreasing order.

**DISCUSSION**

This study represents the first attempt to explore the current status of JE among elderly caregivers, comparing JE levels among individuals with different demographic characteristics and identifying the significant impact of workplace loneliness on JE. The data indicate that the average level of JE among elderly caregivers is moderate, with approximately one in every seven caregivers experiencing low JE levels. Additionally, married elderly care workers exhibited higher JE levels compared to their single counterparts. Furthermore, the findings suggest that younger caregivers tend to have lower JE levels, while those with longer work experience report higher levels of

JE. Moreover, the study highlights the critical role of workplace loneliness as a significant factor influencing JE among elderly caregivers.

**Table 1.** Characteristics of participants (n = 325).

| Variable | | N (%) | JE | | |
|---|---|---|---|---|---|
| | | | Mean □ SD | *F/t* | *P* |
| Sex | Male | 17 (5.2) | 69.47□5.55 | 0.205# | 0.651 |
| | Female | 308 (94.8) | 68.54□8.41 | | |
| Age (years) | ≤25 | 53 (16.3) | 59.79□5.51 | 52.103* | <0.001 |
| | 26 □ ≤30 | 26 (8.0) | 66.81□6.14 | | |
| | 31 □ ≤40 | 106 (32.6) | 66.74□7.09 | | |
| | 41 □ ≤50 | 128 (39.4) | 73.64□6.91 | | |
| | ≥51 | 12 (3.7) | 73.67□4.60 | | |
| Ethnic group | Han | 317 (97.5) | 68.59□8.38 | 0.005# | 0.671 |
| | Ethnic minority | 8 (2.5) | 68.37□0.57 | | |
| Marital status | Married | 243 (74.8) | 71.19□7.49 | 135.162# | <0.001 |
| | Single | 82 (25.2) | 60.85□5.07 | | |
| Education level | Junior school and below | 143 (44.0) | 69.84□6.78 | 3.620* | <0.001 |
| | Secondary school and Junior college | 159 (48.9) | 67.84□9.69 | | |
| | Bachelor degree and above | 23 (7.1) | 65.82□4.04 | | |
| Position | Top management | 7 (2.2) | 79.14□4.06 | 40.453* | <0.001 |
| | Middle management | 32 (9.8) | 79.87□5.45 | | |
| | ordinary employees | 261 (80.3) | 66.62□7.32 | | |
| | Day laborer | 25 (7.7) | 71.64□8.39 | | |
| Monthly income (yuan) | ≤ 3000 | 78 (24.0) | 66.08□9.43 | 8.517* | <0.001 |
| | 3000 ~ 5000 | 178 (54.8) | 68.52□7.63 | | |
| | ≥ 5000 | 69 (21.2) | 71.59□7.63 | | |
| Working years | ≤ 1 | 54 (16.6) | 59.81□5.26 | 49.422* | <0.001 |
| | 1 ~ 3 | 82 (25.2) | 68.24□7.80 | | |
| | 4 ~ 10 | 169 (52.0) | 70.26□7.12 | | |
| | ≥ 10 | 20 (6.2) | 79.50□3.90 | | |
| Work intensity | High | 252 (77.5) | 66.80□7.41 | 61.766# | <0.001 |
| | Normal | 73 (22.5) | 74.74□8.22 | | |

JE: Job embeddedness; SD: standard deviation; # : t-test statistic; *: one-way ANOVA statistic (*F* statistic).

**Status of JE**

In this study, nearly half of the participants were in their 40s or older, with low pay and education levels. This finding bears similarity to characteristics observed in other studies investigating elderly caregivers (Lim, 2021; Cui et al., 2023; Takeda, 2023). The total JE score for elderly caregivers in the study was 68.58 ± 8.28, with 13.2% and 86.2% of participants experiencing low and moderate levels of JE, respectively. These results suggest that there is room for improvement in the JE of elderly caregivers. Although literature directly addressing JE among elderly caregivers is limited, numerous studies have investigated turnover intentions among eldercare workers, indicating a high propensity to leave their jobs (Lim, 2021; Krsnik and Erjavec, 2023). Eldercare workers often endure physical and emotional burnout due to low wages, limited social recognition, work-life imbalance, shift rotations, and heavy workloads, contributing to their high turnover intentions (Lim, 2021). Furthermore, elderly caregivers may experience a lack of fulfillment and recognition of their work's value, impacting their intrinsic motivation levels, which are also crucial factors influencing turnover intentions (Krsnik and Erjavec, 2023). The study findings corroborate these observations. Notably, the study revealed low scores for organizational factors in JE, with particularly low ratings for items such as "I have a sense of belonging when I work in this organization" and "My personal values are able to integrate with those of the organization". This suggests that the majority of elderly caregivers do not feel a strong sense of organizational belonging. Therefore, it is imperative for managers to focus on cultivating a harmonious institutional culture, recognizing the value of elderly caregivers, and fostering open communication with them to enhance their JE.

**Table 2.** Descriptive and correlation analysis (n = 325).

| Variables | Total score (Mean ±SD) | Items score (Mean ±SD) | Organizational factors | Regional factors | JE | Workplace loneliness |
|---|---|---|---|---|---|---|
| Organizational factors | 34.54 ±6.75 | 2.66□0.69 | 1 | | | |
| Regional factors | 34.04 ±3.46 | 3.41□0.63 | 0.234** | 1 | | |
| JE | 68.58±8.28 | 2.98□0.74 | 0.914** | 0.609** | 1 | |
| Workplace loneliness | 33.125±3.46 | 3.31□0.36 | -0.754** | -0.099** | -0.656** | 1 |

JE: job embeddedness; SD: standard deviation; **: $P < 0.001$.

**Table 3.** Multiple linear hierarchical regression analysis (n = 325).

| Variable | Model 1 | | | | Model 2 | | | |
|---|---|---|---|---|---|---|---|---|
| | ***B*** | ***β*** | ***t*** | ***P*** | ***B*** | ***β*** | ***t*** | ***P*** |
| Constant | 80.707 | | 12.363 | <0.001 | 98.600 | | 16.839 | < 0.001 |
| Age | 4.060 | 0.553 | 8.297 | <0.001 | 3.583 | 0.488 | 8.475 | < 0.001 |
| Marital status | -7.381 | -0.388 | -5.193 | <0.001 | -3.022 | -0.159 | -2.346 | 0.020 |
| Education level | 1.733 | 0.128 | 2.477 | 0.014 | 0.008 | 0.001 | 0.013 | 0.990 |
| Position | -5.011 | -0.307 | -4.767 | 0.000 | -1.211 | -.074 | -1.247 | 0.213 |
| Monthly income | 0.541 | 0.044 | 0.877 | 0.381 | 0.953 | 0.077 | 1.793 | 0.074 |
| Work intensity | 3.384 | 0.171 | 3.071 | 0.002 | -0.776 | -0.039 | -0.758 | 0.449 |
| Working years | 3.487 | 0.354 | 3.672 | <0.001 | 2.683 | 0.272 | 3.275 | 0.001 |
| Workplace loneliness | | | | | -0.844 | -0.583 | -10.649 | < 0.001 |
| *R2* | 0.499 | | | | 0.632 | | | |
| *F* | 45.179** | | | | 67.723** | | | |
| △*R2* | 0.499 | | | | 0.132 | | | |
| △*F* | 45.179** | | | | 113.398** | | | |

*B*: Unstandardized Coefficients; *β*: Standardized coefficients; **: $P < 0.001$.

**Influencing factors of JE**

The results of the multivariable regression analysis highlighted significant factors influencing JE, including age, marital status, working years, and workplace loneliness. Notably, the study revealed lower levels of JE among younger elderly caregivers, with the lowest levels observed among caregivers under 25 years of age. This finding aligns with previous research indicating a significant positive correlation between JE and age (Hopson et al., 2018). Younger individuals may be reluctant to engage in eldercare work that involves direct care tasks such as toileting, bathing, and feeding for older adults (Liu et al., 2022). Conversely, older elderly caregivers face fewer employment opportunities compared to their younger counterparts, leading to a greater need for integration into their work environments. Additionally, older caregivers may possess stronger professional networks and broader work-related relationships, contributing to higher levels of JE. Consequently, younger geriatric caregivers may be more inclined to leave their current positions, potentially resulting in an aging workforce within the eldercare sector, which could impede its sustainable development.

Furthermore, the study found that longer working years were associated with higher levels of JE, consistent with findings from Li et al. (2021). This trend may be attributed to the accumulation of resources by geriatric caregivers over time. These resources, whether material or emotional, serve as facilitators that motivate caregivers to remain in their roles and reduce turnover intentions (Zhao and Liu, 2021). Moreover, geriatric caregivers with longer tenures in the workforce tend to possess more experience and better adaptability to their work environments, fostering greater engagement in their roles (Li et al., 2021).

Another significant finding was the association between marital status and JE among geriatric caregivers. Married caregivers exhibited stronger JE compared to their single counterparts. This difference may be attributed to several

factors. Single caregivers may lack family support networks and be more inclined to leave their jobs or relocate geographically. In contrast, married caregivers are less likely to leave their current city due to closer social ties and greater adaptability to their place of residence. Additionally, they may have greater family responsibilities and financial obligations, motivating them to maintain steady employment. However, the study did not confirm the effects of other demographic characteristics, such as income and gender, which have been previously shown to influence JE (Reitz et al., 2010; Yu et al., 2022). Further investigation into these factors is warranted.

Moreover, workplace loneliness emerged as the most significant factor influencing JE among Chinese eldercare workers. Workplace loneliness, characterized as a negative psycho-emotional experience, negatively predicts affective organizational commitment (Wax et al., 2022). Affective organizational commitment refers to an individual's identification with the organization's values and goals, as well as an emotional attachment to the organization (Meyer and Herscovitch, 2001). Research consistently demonstrates that organizational affective commitment positively correlates with occupational stressors, well-being, work engagement, and JE (Siu, 2002; Li-Hong et al., 2023; Shen et al., 2023; Zhai et al., 2023). Elder care workers experiencing low workplace loneliness are likely to exhibit higher levels of affective organizational commitment (Graf et al., 2016).

Furthermore, workplace loneliness can diminish interpersonal trust, self-efficacy, and work engagement, subsequently leading to job dissatisfaction, burnout, and increased turnover intention (Anand and Mishra, 2021; Basit and Nauman, 2022; Ruan and Chen, 2022). The study found that the mean score of workplace loneliness was 16.85, indicating that the level of workplace loneliness among elderly caregivers is high. Given the detrimental effects of workplace loneliness, interventions aimed at reducing workplace loneliness are essential to enhance JE.

## LIMITATIONS

Several limitations should be acknowledged in this study. Firstly, the assessment items relied on self-reports, which may have been influenced by participants' subjective perspectives. Future research could incorporate more objective measurement techniques to mitigate this potential bias. Secondly, the study only included elderly caregivers from Hunan Province in China, which may limit the generalizability of the findings. Including participants from a more diverse range of geographical locations could enhance the representativeness of the study. Thirdly, this study did not consider factors beyond demographic characteristics and workplace loneliness that could influence JE among elderly caregivers. Future research could broaden the scope to include additional job-related factors to provide a more comprehensive understanding of the JE status among elderly caregivers.

## Conclusion

It was found that most elderly care workers had a medium level of JE. The timely actions taken by managers to improve JE are imperative. Age, marital status, working years, and workplace loneliness were the influencing factors of JE of geriatric caregivers. Thus, it is crucial to focus on the young, single and short-serving geriatric caregivers, who are more likely to have low levels of JE. Furthermore, alleviating workplace loneliness can enhance the JE of geriatric caregivers. In addition, the univariate analysis in this study showed that there were statistically significant differences in JE levels among elderly care workers with different education levels, positions, monthly income and work intensity, but these four variables were not included in the regression equation, which may be related to the interaction between independent variables. Therefore, the influential factors should be confirmed by further studies.

## IMPLICATIONS FOR PRACTICE

Understanding JE and its influencing factors among elderly caregivers holds significant implications for managers. Based on the findings, managers should prioritize attention to factors such as age, marital status, and working years, which are associated with JE levels among elderly caregivers. Of particular importance is an

addressing modifiable factor such as workplace loneliness to enhance JE levels, ultimately helping to mitigate the high turnover rates observed among elderly caregivers. By fostering a supportive work environment that addresses these factors, managers can contribute to the retention and well-being of elderly caregivers in their organizations.

**CONFLICT OF INTERESTS**

The authors have not declared any conflict of interests.

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