The mediating role of self-acceptance in the relationship between loneliness and subjective well-being among the elderly in nursing home

A cross-sectional study

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Abstract

The purpose of this study was to investigate the mediating effects of self-acceptance on loneliness and subjective well-being (SWB) among elderly subjects living in Chinese nursing homes.

This cross-sectional study was conducted between October 2019 and March 2020. A total of 415 elderly participants aged 60 to 97 years (mean 81.12±8.90 years) from 3 medical and nursing homes in Fuyang city, Anhui province, were selected using a convenience sampling method. Data were collected using a general information questionnaire, the Memorial University of Newfoundland Scale of Happiness, the self-acceptance scale, and the UCLA Loneliness scale. Correlations, regressions, and structural equation models were used for the analyses. Multiple linear regression analysis was performed to confirm the factors influencing the SWB. Bootstrapping was performed to confirm the mediation effect.

The loneliness of elderly subjects in nursing homes was significantly correlated with self-acceptance and SWB (r = −0.338, P < .01; r = −0.383, P < .01), and self-acceptance was significantly correlated with SWB (r = 0.401, P < .01). Multiple linear regression revealed that the relationship with children, loneliness, residence time in nursing homes, income, marital status, self-acceptance, original residence, and frequency of children’s visits were the main factors affecting SWB. Bootstrapping showed that the mediating role of self-acceptance was statistically significant.

The SWB of elderly individuals living in Chinese nursing homes was moderate. Low-income people, subjects from rural areas, and those newly admitted to nursing homes should be emphasized in interventions, and appropriate measures should be taken to harmonize the relationships between elderly residents and their children. Self-acceptance partially mediated the relationship between loneliness and SWB. Consequently, self-acceptance should be the focus of improving the SWB of elderly nursing home residents.

Abbreviations: χ² = chi-square statistic, CI = confidence interval, MUNSH = Memorial University of Newfoundland Scale of Happiness, NA = negative attitudes, NE = negative experiences, PA = positive attitudes, PE = positive experiences, SEM = structural equation model, SWB = subjective well-being.

Keywords: elderly, loneliness, nursing home, self-acceptance, subjective well-being

1. Introduction

Population aging is a growing problem in most countries; according to the seventh national census, at 0:00 on November 1, 2020, the Chinese mainland has a total population of 1.412 million, 264 million aged 60 and above, accounting for 18.70% of the total population. China has become the country with the
largest number of elderly people worldwide.\cite{1} The country’s pension model is mainly based on home-based pension supported by community pension and supplemented by institutional pension, which, to a certain extent, provides a choice to solve realistic obstacles to pension. By the end of the first quarter of 2019, 4.171 million beds were in many different types of pension institutions.\cite{2} However, these facilities are mostly limited to physical needs, which ignore or lack the ability to meet the psychological needs of the elderly.\cite{3} Several studies have reported that elderly subjects living in Chinese pension institutions generally have different degrees of psychological problems.\cite{4-6} Chi et al. study, the detection rate of depression in elderly people in nursing institutions was 36.93%, which was higher than that in the home-based nursing group (25.62%).\cite{7} Luo and Ren\cite{8} found that the detection rates of depression and anxiety in the elderly in nursing homes were 34.55% and 32.73%, respectively.

Subjective well-being (SWB) is an important comprehensive psychological index that measures the quality of personal life. It refers to the emotional and cognitive evaluation of one’s personal living state, including satisfaction with life, self-actualization, pleasure, peace, and feeling positive attitudes (PA) and negative attitudes (NA).\cite{9} SWB can measure the quality of life of the elderly and is regarded as one of the important dimensions for measuring successful aging. According to the 2017 Global Happiness Report, China has risen to the 79th in the ranking of happiness in recent years.\cite{10} Elderly people living in nursing homes are more likely to be in a negative emotional state than those in the community because they are far away from their families, and loneliness may lead to lower SWB.\cite{11} Previous studies on this topic focused on empty-nest elderly, community-dwelling elderly, retirees, college students, and other groups,\cite{12-13} with little focus on the SWB of elderly people in nursing homes.

Loneliness is an unpleasant and painful subjective emotional experience caused by the perception of a lack of social relations.\cite{14} Liang\cite{15-16} study showed that the company and care of partners and children are important factors affecting the loneliness of the elderly. The elderly in nursing homes are far away from their children and most of them are widowed, which makes their loneliness more frequent. One study described the relationship between loneliness and low social interaction.\cite{17} Loneliness among the elderly is closely related to their level of social support and the degree of SWB.\cite{18,19} Some studies have shown that social support, loneliness, and SWB have significant correlations among the elderly.\cite{20} Few studies have focused on the relationship between self-acceptance, SWB, and loneliness.

Self-acceptance is defined as a positive respect or attitude toward oneself as a whole, including a person’s past life experience. Recognition of self-acceptance does not depend on the achievements of others or individuals.\cite{21} Self-acceptance is an important sign of mental health and a prerequisite for getting along well.\cite{22} According to Folkman and Lazarus\cite{23} stress-and-coping mode, when individuals perceive a negative event (e.g., discrimination) as stress, they perceive a threat to their self-image. This threat may significantly predict an individual’s self-acceptance, which may be directly related to their level of mental health.\cite{24} Xu et al.\cite{25} found that self-acceptance significantly mediated the association between mindfulness and SWB. Previous studies have examined the relationship between self-acceptance and SWB among the elderly\cite{26,27}, but few have focused on self-acceptance as a mediator between loneliness and SWB among nursing home residents.

Although loneliness and self-acceptance are important factors that affect SWB, the relationship between loneliness and SWB is influenced by other variables. For example, self-acceptance is significantly negatively correlated with factors affecting mental health, such as depression, anxiety, and compulsion.\cite{28-30} In other words, improving self-acceptance can promote the level of mental health to some extent. However, whether self-acceptance can mediate the relationship between loneliness and SWB in elderly people in nursing homes remains unclear. The goals of this study were to assess the relationships among loneliness, self-acceptance, and SWB in elderly people in nursing homes and to establish a mediation mechanism model of loneliness affecting SWB through self-acceptance.

The 2 main hypotheses of the study were as follows

Hypothesis 1: There are correlations between SWB, self-acceptance, and loneliness among elderly residents of nursing homes.

Hypothesis 2: Self-acceptance mediates the relationship between loneliness and SWB in this population.

2. Materials and methods

2.1. Ethics

This study was approved by the Ethics Committee of Jiangsu University. All participants provided informed consent after receiving information about the investigation’s goals and methods. The ethics committee of the university approved the study and was completed in accordance with the Declaration of Helsinki. All subject information was anonymized.

2.2. Setting

This was a cross-sectional study conducted by researchers from Jiangsu University from October 2019 to March 2020 in Fuyang, Anhui Province, northwest China. Questionnaire collection was completed before the beginning of the COVID-19 pandemic, and the subsequent time was in the statistical analysis stage. By the end of 2016, Fuyang had 366 pension institutions with 50,034 beds (including all kinds of nursing homes and homes and apartments for the elderly), and a total of 17,667 elderly residents were living in them.\cite{29} A convenience sampling method was used to select elderly residents from 3 medical and nursing homes in Fuyang. The Fuyang senior apartment is the largest nursing home in the city, with 600 beds and about 450 elderly residents. The Baishanyuan senior apartment has 200 beds and houses 160 people. The Yingxi senior apartment has 100 beds and approximately 80 residents.

2.3. Participants

Three medical and nursing homes were included in this study. The inclusion criteria were age ≥60 years, inability to communicate without obstacles, and provision of informed consent to voluntarily participate in this study. The exclusion criteria were as follows: current use of psychotropic medication or psychotherapy. The questionnaire collection method was one-to-one, given that the participants were all ≥60 years old and there were a large number of subjects with low educational levels.
2.4. Data collection

During the session, the researcher explained the requirements for completing the questionnaire and guaranteed that the data were only used for research. The researcher asked each subject every question and marked the answers after receiving a response. The completed scales were immediately collected and preliminarily reviewed. Any missing items were filled in on the spot and checked again. If the researchers were asked to stop filling out the questionnaire or the subject experienced sudden discomfort that caused them not to complete all the questions, the data were regarded as invalid. After excluding incomplete and half-finished surveys, 415 valid questionnaires were collected.

2.5. Instruments

2.5.1. General information questionnaire. The general information questionnaire was used to collect demographic information for 11 items: sex, age, level of education, marital status, residence time in nursing homes, number of children, frequency of children’s visits, relationships with children, original residence, hobbies, and monthly income.

2.5.2. Loneliness questionnaire. Loneliness was assessed using a questionnaire developed by Russell et al. in 1978. This 20-item survey includes 11 positive entries and 9 reverse entries that are scored as 4 to 1 point for positive entries (regular, sometimes, rarely, never) and 1 to 4 points for negative entries (regular, sometimes, rarely, never). The total score ranges from 20 to 80, with a higher score indicating a greater degree of loneliness. The Cronbach α coefficient of this scale was 0.89, and the test-retest reliability was 0.73. In the structural equation model (SEM), the loneliness scale was divided into 5 dimensions (F1–F5) using principal component analysis.

2.5.3. Self-acceptance scale. We used the self-acceptance questionnaire developed by Xie[31] based on the characteristics of elderly Chinese subjects. It consists of 13 items divided into 3 dimensions: cognitive acceptance, emotional acceptance, and behavioral acceptance. The scale is scored on a 5-point Likert scale. The total score ranges from 13 to 65, with higher scores indicating greater self-acceptance. The Cronbach α coefficient of the total scale was 0.884, and the internal reliability was 0.872.

2.5.4. Memorial University of Newfoundland Scale of Happiness (MUNSH). The MUNSH[32] is applicable to the elderly and consists of 24 items: 10 reflect PA and NA (5 reflect PA and 5 reflect NA), 14 items reflect positive experiences (PE) and negative experiences (NE) (7 for PE and 7 for NE). Each “positive” answer is recorded as “1,” and each “negative” answer is recorded as “−1.” The total score is calculated as PA – NA + PE – NE, and the score ranges from –24 to +24. When computing the subscale and total scale scores, these are converted to a positive range, so the range of values for the PA and NA subscale scores is 0 to 10, the range for the PE and NE subscale scores is 0 to 14, and the range for the total score representing the level of SWB is 0 to 48. For the Chinese version of the MUNSH, the test-retest reliability of the total score (using the Spearman correlation coefficient) was 0.87, and the internal validity of the 25 items in the full scale (using alpha) was 0.76. This scale has good internal consistency and maximum time stability; therefore, it has been widely used in many countries as an indirect index of the mental health status of the elderly. Average score rate = average score/theory maximum × 100%. The SWB scores of elderly residents of nursing homes were divided into 3 tertiles: low, <60% (28.8 points); medium, 60% to 80% (28.8–38.4 points); and high, >80% (>38.4 points).

2.6. Statistical analysis

Data analysis was carried out using the statistical program packages SPSS 22.0 and AMOS 23.0 (IBM Corp., Armonk, NY), and P values ≤0.05 were considered statistically significant. Pearson correlation analysis was used to investigate the correlations between loneliness, self-acceptance, and SWB among the elderly in nursing homes. Multiple linear regression analysis was performed to confirm the factors influencing the SWB. Bootstrapping was used to verify the mediation effect, with a duplicate sample size of 2000. The fitness of data in the SEM was assessed using the following indices: chi-square statistic (χ²), chi-square to degrees-of-freedom ratio (χ²/df ≤3), root mean square error of approximation ≤0.08, goodness-of-fit index ≥0.9, adjusted goodness-of-fit index ≥0.9, comparative fit index ≥0.90, and normed fit index ≥0.9.[34]

3. Results

3.1. Sample characteristic

The age of these respondents ranged from 60 to 97 years (mean 81.12 ± 8.90 years). A total of 163 (39.76%) elderly were male and 250 (60.24%) were female (Table 1).

3.2. Correlation analysis

The self-acceptance, SWB, and loneliness scores of the elderly in nursing homes were all subject to normal distribution. Correlation coefficients were calculated using the Pearson method to analyze the relationships between them. The score of SWB was 29.29 ± 12.28, and the score rate was 62.3%. The correlation analysis showed that loneliness was negatively correlated with self-acceptance and SWB (r = −0.338, P < .01; r = −0.383, P < .01), while self-acceptance was positively correlated with SWB (r = 0.401, P < .01; Table 2).

3.3. Multiple linear regression analysis

In model I, the total score of SWB was taken as the dependent variable, and general information, self-acceptance, and loneliness were taken as the independent variables for multiple linear stepwise regression analysis, F(8406) = 37.634, P = .000. Finally, 8 variables were introduced, and loneliness (P = .000) and self-acceptance (P = .001) were identified as significant predictors. Model II took the total score of self-acceptance as the dependent variable and general information and loneliness as the independent variables, F(7407) = 47.173, P = .000. We ultimately introduced 7 variables and found that loneliness was also a significant predictor (P = .000, Table 3).

3.4. The mediating role of self-acceptance in the relationship between loneliness and SWB.

In this study, the original model was not ideal. According to the research of Wen et al.[35] researchers can modify the model by adding residual correlation according to the significant results of the initial model parameters and the model correction index provided by Amos. In this study, 4 model revisions were carried
out, and the correlations between e9 and e12, e2 and e4, e1 and e3, e1 and e4 were added. The revised model is shown in Figure 1. After adjusting the residuals, the SEM of loneliness and self-acceptance affecting SWB had $\chi^2/df = 2.795$, root mean square error of approximation = 0.066, goodness-of-fit index = 0.95, adjusted goodness-of-fit index = 0.915, comparative fit index = 0.958, normed fit index = 0.955. All the loadings of the indicators were significant at the 0.001 level, indicating good convergent validity. Figure 1 shows that loneliness had a direct effect on SWB ($\beta = -0.206, P < .01$). Loneliness also had a direct impact on self-acceptance ($\beta = 0.467, P < .01$), while self-acceptance had a direct effect on SWB ($\beta = 0.319, P < .01$).

Bootstrapping is a relatively advanced technique to validate a single or bundled mediation effect and is an increasingly popular nonparametric method for testing mediation. [36] This approach is a powerful and reasonable way to obtain a confidence interval (CI) for the mediation effect under most conditions. For each independent variable, when the bias correction for the mediating effect (a x b product) and 95% CI (BCa 95% CI) excluded 0, the mediating effect of coping style was statistically significant. According to Baron and Kenny, [37] as the first precondition, the independent variable must have effects on the dependent variable, the independent variable must affect the mediating variable, and the mediating variable must affect the dependent variable. When the effects of the mediating variable were included, the independent variable's effect on the dependent variable became statistically insignificant or lowered. [38] Table 4 shows that the direct, indirect, and total effects were significant, supporting the hypothesis that this is a partial mediation model.

### Table 1
General information on the elderly subjects in nursing homes (n = 415).

| Variable                  | n   | Percentage (%) |
|---------------------------|-----|----------------|
| Sex                       |     |                |
| Male                      | 165 | 39.76          |
| Female                    | 250 | 60.24          |
| Age (yr)                  |     |                |
| 60 to 74                  | 100 | 24.10          |
| 75 to 89                  | 250 | 60.24          |
| >90                       | 65  | 15.66          |
| Level of education        |     |                |
| Illiterate                | 163 | 39.28          |
| Primary school            | 118 | 28.43          |
| Middle school             | 70  | 16.87          |
| High school               | 45  | 10.84          |
| University                | 19  | 4.58           |
| Marital status            |     |                |
| Married                   | 147 | 35.42          |
| Widowed                   | 250 | 60.24          |
| Divorced                  | 18  | 4.34           |
| Residence time in nursing home (yr) | 113 | 27.23 |
| 0 to 2                    | 196 | 47.23          |
| >5                       | 106 | 25.54          |
| Frequency of children’s visits |   |                |
| Monthly                   | 40  | 9.64           |
| Irregularly scheduled     | 175 | 42.17          |
| Very few (<2/yr)          | 45  | 10.84          |
| Relationship with children |     |                |
| Poor                      | 148 | 35.66          |
| Good                      | 152 | 36.63          |
| Fine                      | 200 | 48.19          |
| Original residence        |     |                |
| Urban                     | 135 | 32.53          |
| County town               | 65  | 15.66          |
| Rural                     | 215 | 51.81          |
| Hobbies                   |     |                |
| Yes                       | 215 | 51.81          |
| No                        | 200 | 48.19          |
| Monthly income (RMB)      |     |                |
| <500                      | 155 | 37.35          |
| 501 to 1000               | 50  | 12.05          |
| 1001 to 2000              | 45  | 10.84          |
| >2001                     | 165 | 39.76          |
| Number of children        |     |                |
| 1                         | 25  | 6.02           |
| 2                         | 120 | 28.92          |
| >3                        | 270 | 65.06          |

### Table 2
Correlations between loneliness, self-acceptance, and subjective well-being ($r_{ij}$).

| Variables      | Mean ±SD | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
|----------------|----------|------|------|------|------|------|------|------|------|------|------|
| 1. Loneliness  | 46.48 ± 12.18 | 1    |      |      |      |      |      |      |      |      |      |
| 2. Self-acceptance | 44.11 ± 7.26     | -0.338*** | 1    |      |      |      |      |      |      |      |      |
| 3. Cognitive acceptance | 14.17 ± 2.54     | -0.067 | 0.722*** | 1    |      |      |      |      |      |      |      |
| 4. Emotional acceptance | 13.69 ± 3.46     | -0.116* | 0.119* | -0.193*** | 1    |      |      |      |      |      |      |
| 5. Behavioral acceptance | 16.29 ± 5.89     | -0.321** | 0.844** | 0.571** | -0.357*** | 1    |      |      |      |      |      |
| 6. Subjective well-being | 29.29 ± 12.28    | -0.383** | 0.401** | 0.081 | 0.228** | 0.329** | 1    |      |      |      |      |
| 7. Positive emotion | 0.73 ± 3.13      | -0.304** | 0.330** | 0.139** | 0.198** | 0.227** | 0.866** | 1    |      |      |      |
| 8. Negative emotion | 1.66 ± 2.91      | -0.264** | 0.313** | 0.127** | 0.179** | 0.229** | 0.825** | 0.733** | 1    |      |      |
| 9. Positive experience | 1.29 ± 3.86      | -0.374** | 0.374** | -0.022 | 0.225** | 0.344** | 0.827** | 0.510** | 0.578** | 1    |
| 10. Negative experience | 1.58 ± 4.32      | -0.349** | 0.353** | 0.061 | 0.190** | 0.304** | 0.922** | 0.786** | 0.628** | 0.700** | 1    |

*P < .05, **P < .01.

### 4. Discussion
The mean SWB score of the elderly in nursing homes in Fuyang, Anhui Province was moderate but lower than that of the elderly in nursing homes in Shanxi Province (32.73 ± 12.23) measured by the same scale, [39] and lower than the score (M=30.8) of the Canadian elderly population measured by the same scale in Webster study. [40] This indicates that there is still room for improvement in the SWB of the elderly in China, especially those residing in nursing homes.

Multiple linear regression analysis showed that the relationship with children and frequency of children's visit were positive predictors of the SWB of elderly residents of nursing homes. This may be because the process of human life cannot be separated from the family. Children are an important source of support for elderly parents and can encourage them to live their last years to the fullest. [31] Raising children is a great source of achievement for elderly residents in China, so poor relationships with their children will directly affect their happiness. Visit frequency is a concrete embodiment of this relationship. For elderly people in nursing homes, the best way to communicate with family...
members is in-person visits; therefore, the higher the frequency, the happier they will feel. There is an old saying in China that filial piety comes first. In traditional culture, living in a nursing home means represents being abandoned by the family, which is the embodiment of unfilial children. This is an important reason for the low happiness of elderly residents in nursing homes in China.

Time spent living in the nursing home had a positive predictive effect on SWB, which was consistent with the findings of Sun et al.\(^\text{[41]}\) Subjects eventually adapted to their new environment and shared a room; once they felt less awkward in the situation, they could affirm the value of self-existence. Conversely, those who had only lived in the nursing home for a short time were still dealing with suddenly leaving their family, and still felt they were treated negatively by being made to live in the nursing home. Combined with the impact of the unfamiliar environment, they were psychologically unable to adapt, contributing to lower SWB.

Income was an important factor affecting the SWB of the elderly in nursing homes, which is consistent with domestic and international findings.\(^\text{[42–43]}\) Income can reflect resource security.\(^\text{[43]}\) People with low incomes are unable to pay for necessities, leading to lower levels of happiness. One study showed that income and SWB were positively correlated at national and individual levels over a given period of time, and that the gradient of life satisfaction roughly varies with income.\(^\text{[42]}\) These results indicate an effect of absolute income on well-being, with higher SWB as material living standards improve. In China, parents are reluctant to become a burden on their children, especially the elderly in nursing homes who have to pay for their living expenses every month. If they have a source of income, they can lighten the burden on their children and better realize their self-worth. The higher income of elderly nursing home residents could improve their sense of self-worth and increase their happiness.

The original residence was also an influential factor in the SWB. Elderly subjects from rural areas had lower SWB than those from urban areas, which is consistent with previous studies.\(^\text{[44–46]}\) The differences in personal identity between urban and rural areas affect social integration, the social security system, and

### Table 3

| Dependent variable | Predictor variable            | B (SE)       | Beta       | t      | P     | F value | \(R^2\) |
|--------------------|-------------------------------|--------------|------------|--------|-------|---------|---------|
| Model I            | Relationship with children    | 3.408 (0.677)| 0.221      | 5.033  | .000  | 37.634  | 0.426   |
|                    | Loneliness                    | -0.216 (0.044)| -0.214     | -4.935 | .000  |         |         |
|                    | Residence time in nursing home| 3.053 (0.727)| 0.181      | 4.201  | .000  |         |         |
|                    | Monthly income                | 2.448 (0.411)| 0.267      | 5.957  | .000  |         |         |
|                    | Marital status                | 4.119 (0.873)| 0.186      | 4.720  | .000  |         |         |
|                    | Self-acceptance               | 0.261 (0.077)| 0.154      | 3.415  | .001  |         |         |
|                    | Original residence            | 1.576 (0.614)| 0.115      | 2.568  | .011  |         |         |
|                    | Frequency of children’s visit  | 0.921 (0.466)| 0.083      | 1.977  | .049  |         |         |
| Model II           | Relationship with children    | 2.799 (0.362)| 0.307      | 7.734  | .000  | 47.173  | 0.448   |
|                    | Hobbies                       | 2.552 (0.608)| 0.176      | 4.198  | .000  |         |         |
|                    | Number of children            | -1.441 (0.198)| -0.282     | -7.264 | .000  |         |         |
|                    | Residence time in nursing home| 2.644 (0.414)| 0.266      | 6.394  | .000  |         |         |
|                    | Loneliness                    | -0.123 (0.025)| -0.207     | -4.930 | .000  |         |         |
|                    | Age (yr)                      | -1.775 (0.458)| -0.153     | -3.878 | .000  |         |         |
|                    | Frequency of children’s visit  | 0.649 (0.275)| 0.099      | 2.357  | .019  |         |         |

**Figure 1.** The structural equation model of loneliness and self-acceptance affects the subjective well-being of the elderly in nursing homes.
Han et al. found that high individuals with self-acceptance tend to present more truthfully in social interactions, higher self-worth, and less loneliness. In addition, situations that can present themselves more truthfully in social acceptance is the intermediary between loneliness and SWB. In contrast, those living in nursing homes are far away from their traditional Chinese culture, the elderly life should be full of acceptance is the intermediary between loneliness and SWB. In nursing homes is related to self-acceptance and loneliness. The above results support the hypothesis that SWB among the elderly in nursing homes was negatively correlated with loneliness, which is consistent with domestic and international studies. The SWB of elderly people in nursing homes was positively correlated with self-acceptance, which has also been previously reported. Notably, we found that loneliness was negatively correlated with self-acceptance. It has been proposed that self-acceptance is self-evaluation and the self-experience and attitudes that result from it. Individuals with good self-acceptance can present themselves more truthfully in social situations, which is conducive to more effective interpersonal interactions, higher self-worth, and less loneliness. In addition, Han et al. found that high individuals with self-acceptance tend to use positive coping styles, which is helpful for elderly people dealing with interpersonal contradictions in time, repairing psychological trauma, and alleviating loneliness. The above results support the hypothesis that SWB among the elderly in nursing homes is related to self-acceptance and loneliness.

Our SEM results support Hypothesis 2, which states that self-acceptance is the intermediary between loneliness and SWB. In traditional Chinese culture, the elderly life should be full of children, grandchildren, and other family members living together in harmony, which is called the joy of family. In contrast, those living in nursing homes are far away from their families and are lonely without their children and grandchildren. Loneliness has long been considered a risk factor for depression. As a unique group, elderly residents in nursing homes have experienced a dramatic change in their living circumstances as well as age-related functional changes associated with many psychological problems and obstacles. These reasons cause them to not accept themselves and fail to achieve their ideal physical and mental health. When individuals face these disadvantages, they can change their negative impacts and constantly improve themselves.

The findings of this study have several important implications. First, interventions should focus on helping the elderly in nursing homes to improve their self-acceptance level. This will reduce loneliness of the elderly and help to improve their SWB. The improvement of self-acceptance level can improve the quality of life of the elderly and achieve successful aging. Second, harmonious relationships with children are key to improving SWB in this population. It is suggested that nursing homes should actively schedule parent-child activities during visits. This measure could promote healthy family relationships by encouraging children to spend more time with their parents. Third, future social work programs should focus on low-income subjects, those from rural areas, and new arrivals to nursing homes. These groups should be given psychological counseling and more opportunities to communicate with the people around them. Such measures could help them adapt to the new environment as soon as possible and consequently improve their SWB.

5. Limitations

This study examined how well a process model links loneliness to SWB through self-acceptance. However, several issues remain to be addressed. First, to clarify the effect of loneliness on SWB from a wider perspective, additional mediators should be examined in further research. Second, this study was cross-sectional; therefore, its conclusions should be validated in longitudinal investigations. Third, since we only examined these relationships among elderly subjects living in nursing homes, it is not clear whether the results are generalizable to community-dwelling elderly individuals. Future studies should assess older populations living in different areas with various pension models.

6. Conclusions

Despite these limitations, a mediating model between loneliness and SWB was constructed and utilized in this study. These results can help us to better understand the interactive mechanisms of loneliness and SWB of elderly people in nursing homes in China. This study revealed that self-acceptance has a mediating effect on the association between loneliness and SWB among elderly residents of Fuyang nursing homes in Anhui Province, China. Nursing practitioners who work with these individuals should focus on enhancing their self-acceptance to improve their mental

| Model pathways | Point estimate SE | Bias-corrected 95% CI | Percentile 95% CI |
|----------------|------------------|----------------------|------------------|
|                |                  | Lower               | Upper            | Lower           | Upper           |
| Total effect   |                  |                     |                  |                  |                  |
| Loneliness – subjective well-being | -0.355 | -0.481 | -0.204 | -0.478 | -0.200 |
| Indirect effect |                  |                     |                  |                  |                  |
| Loneliness – subjective well-being | -0.149 | -0.223 | -0.090 | -0.216 | -0.065 |
| Direct effect  |                  |                     |                  |                  |                  |
| Loneliness – subjective well-being | -0.206 | -0.356 | -0.063 | -0.348 | -0.056 |
| Loneliness – self-acceptance | -0.467 | -0.591 | -0.321 | -0.592 | -0.322 |
| Self-acceptance – happiness | 0.319 | 0.182 | 0.433 | 0.187 | 0.436 |

CI = confidence interval.
health and SWB levels. Special attention should be given to those who are low-income, from rural areas, and newly admitted to nursing homes. Finally, corresponding measures should be taken for home-based pension and community pension. All relevant data are within the paper and its Supplementary Information files.

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