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Subjective Well-Being among Empty-Nest Elderly and Its Related Factors: Taking Guangdong Province as an Example

Yongmei Hou* Zixu Guo Que Zheng

Department of Psychology, School of Humanity and Administration, Guangdong Medical University, Dongguan, Guangdong, 523000, China

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ABSTRACT

Objective: To explore the the status of happiness and social support of empty nesters in Guangdong Province and analyze the relationship between the above two variables. **Method:** Totally 1148 empty nesters (776 males, 734 females) from 5 cities in Guangdong province are selected by stratified random sampling and conducted with Memorial University of Newfoundland Scale of Happiness (MUNSH), Social Support Rating Scale (SSRS), Mini-Mental State Examination (MMSE) and a self-edited questionnaire on the general information. **Results:** The total score of MUNSH is (10.20±6.37). The total score and the scores of the 3 dimensions of objective support, subject support, the use of support in SSRS are (30.79±5.51), (9.24±2.37), (19.38±4.95) and (9.22±2.15) respectively. Multiple variable linear regression show that are positively associated with the total scores of MUNSH ($B = .227, .115, .098, .158, .082$, respectively, $P < .05$). was negatively associated with total score of MUNSH ($B = -.097$, $P < .05$). **Conclusion:** It suggests that the sort of leisure, gender, progress rank, family characteristics, such as family economic condition and father's career may be related factors of undergraduates life satisfaction.

1. Introduction

In the 21st century, the aging of population has become a global problem and it is becoming more serious in China. According to the *Statistical Bulletin of China's National Economic and Social Development 2018*, the population aged 60 and above has reached 248 million and the population aged 65 and above has reached 167 million (accounting for 11.9% of total population) with 17.17% aging level^[1]. The mental health of the elderly has also attracted increasing attention from all sectors of soci-

ety^[2-3].

Subjective Well-Being (SWB) can be defined from many perspectives. Most researchers agree with the concept proposed by Diener (1984), believing that Subjective Well-Being is an individual's overall assessment of his/her life quality on the basis of self-determined standards, which consists of the following three aspects: (1) Cognitive assessment of his/her life quality (life satisfaction); (2) Positive emotions, including such emotional experiences as pleasure, happiness, a sense of meaning in life and energy; (3) Negative emotions, including anxiety,

*Corresponding Author:

Yongmei Hou,

Department of Psychology, School of Humanity and Administration, Guangdong Medical University, Dongguan, Guangdong, 523000, China;

Email: 2184456621@qq.com

depression, sadness, loneliness, boredom, uncomfortable and other emotional experiences, but without emotional disorders and neurosis.

It shows that Subjective Well-Being is characterized by three basic features: (1) Subjectivity: Subjective Well-Being is mainly assessed by self-set standards rather than external standards, so it is mostly assessed by subjective reporting method; (2) Integrity: It reflects subjective life quality of the individual as a whole; (3) Relative stability: Subjective Well-Being does not change significantly with time or general changes in the environment^[3].

There are many kinds of losses in the lives of old people: physiological loss, attractiveness loss, loss of family and social status, financial independence loss, loss of interpersonal relationships, loss of intelligence and vivid emotions. All kinds of losses tend to generate negative emotional emotions such as loneliness, depression, anxiety and dissatisfaction^[15-16,21-24], leading to dissatisfaction with life, which can reduce the Subjective Well-Being of the elderly^[4-7].

Individuals through social exchanges or social interaction can receive social support of all kinds of help from others, including passively received help and actively seeking help^[2]. Social support is an independent factor which affects the Subjective Well-Being of the elderly^[22].

“Empty-nest” elderly generally refer to those aged 65 or above with children and grandchildren who are not around or living locally^[1]. With the aggravation of the aging of the society, urbanization acceleration and life pressure aggravation of young people, the number of “empty nest” old people is increasing year by year. What is the status of social support and Subjective Well-Being for “empty nesters”? How does social support influence the Subjective Well-Being of “empty nesters”? What other factors affect the Subjective Well-Being of empty nesters? This article aims to answer the above questions.

2. Objects and Methods

2.1 Objects

2.1.1 Sample Size Estimation

G* Power 3 is used to calculate the minimum sample size^[8]. As depression is a common psychological disorder among the elderly, it plays an important role in predicting the Subjective Well-Being of the elderly. The prevalence rate of depression among the elderly is adopted to calculate the sample size. Previous studies have shown that the incidence of depression among the elderly in China is 6.50 ~ 63.50%^[3,9-10]. Its test effect value is a medium, which means d value is 0.50 ~ 0.80^[11]. In this study, with

the effect value $d = 0.70$, the statistical test force $1-\beta=0.80$, class error probability $\alpha=0.05$, the minimum sample size needed by the survey is 786. The minimum sample size is determined to be 943 with 20% chance of follow-up loss.

2.1.2 Sampling

A total of 1,300 elderly people were selected from Shenzhen, Dongguan, Zhuhai, Shanwei and Heyuan from March 2019 to April 2019 through stratified random sampling. Inclusion criteria: over 60 years old, mentally and intellectually normal, hospitalized elderly in nursing home for more than half a year. Exclusion criteria: Alzheimer’s disease, severe physical disease, mental disorder and other reasons without capacity to complete scale accessing. We actually met 1258 people with visiting rate of 96.8%. Excluding mental disorders, with the screening by MMSE, fifteen (7.7%) of the subjects were positive and 41 (3.2%) were difficult to answer questions due to severe hearing and visual impairment, as well as 54 (4.2%) subjects said they were unwell and unwilling to cooperate with investigators. A total of 1,148 subjects complete various surveys with an effective rate of 88.3%. Among them, 307 in Dongguan, 342 in Shenzhen, 178 in Zhuhai, 164 in Shanwei and 157 in Heyuan; 628 (295 males and 333 females) are hospitalized in nursing homes, 348 (166 males and 182 females) are living alone and 172 (86 males and 86 females) are living with their husband or wife. The average age is (73.6±7.2) years old, among which 644 are 60 ~ 70 years old, 352 are 70 ~ 80 years old, and 152 are 80 ~ 90 years old. And 288 are unmarried, 576 are widowed and 284 are married with spouses alive. As for the average years of education (9.51±3.78); 412 illiterates, 337 primary school graduates, 239 junior middle school graduates, 137 senior high school or technical secondary school graduates and 23 junior college or undergraduate students; 453 in urban areas and 695 in rural areas; There are 456 pensioners, 418 savers, 174 children providers, 46 depending on other family members, 24 people on subsistence allowances and 30 people on commercial insurance.

2.2 Tools

2.2.1 Memorial University of Newfoundland Scale of Happiness, MUNSH^[12]

It’s compiled by Kozma (1980) to assess the Subjective Well-Being of the elderly. It consists of 24 items. Among them, 10 items reflect positive emotion (PA) and negative emotion (NA), which 5 items reflect PA and NA respectively. Another 14 items reflect positive experiences (PE) and negative experiences (NE) with 7 items each reflecting PE and NE. Total happiness =PA-NA+PE-NE, score

range -24 to +24. For ease of calculation, the constant 24 can be added and score ranges from 0 to 48. The higher the score, the higher the happiness.

2.2.2 Social Support Rating Scale, SSRS ^[13]

The social support rating scale is compiled by Xiao Shuiyuan (1987) which aims to assess social support and its use. There are 10 items, which are divided into three dimensions: objective support (actual support received), subjective support (experienced or emotional support) and utilization of support (active use of various social support, including ways of talking, asking for help and participation in activities). The higher the score, the higher the level of social support. In general, if the total score is less than 20, it refers to less social support; 20 to 30 scores refer to general social support; More than 30 scores refer to satisfactory social support. In this study, the Cronbach' a coefficient of the scale is 0.903 and the Cronbach' a coefficient of each dimension is between 0.834 and 0.875.

2.2.3 Mini-Mental State Examination, MMSE ^[14]

It is also known as Mini-Mental State Checklist. The Mini-Mental State Examination is compiled by Folstein (1975) and revised by Zhang Mingyuan (2003), which is mainly used for the measurement of orientation, memory, language, calculation and attention. There are five items, including time and place orientation, language(retelling, naming, understanding instructions), mental arithmetic, immediate and short-term auditory word memory as well as visual structure imitation. The highest score is 30 and the cutoff value is ≤ 17 in the illiterate group, ≤ 20 in the primary school group and ≤ 24 in the secondary school group. Scores below the cut-off point are associated with cognitive impairment. The reliability and validity, specificity and sensitivity of the scale are high. In this study, the Cronbach' a coefficient of the scale is 0.813.

2.2.4 Self-compiled Questionnaire for General Information and Living Conditions of Elderly Individuals

This questionnaire consists of gender, age, living mode, marital condition, way of old-age care, educational level, occupation before retirement, economic income, with or without children, entertainment, consumption, etc.

2.3 Collection and Collation of Materials

The researchers involved in the survey were given unified training and survey process and rating standards of the scale were also unified. The consistency test ($Kappa=0.81\sim 0.90$) was conducted to meet the requirements of

psychological measurement.

Through the checking way of meeting at home, questionnaires were gave out by investigators and the elderly were invited to fill in by themselves. For those who cannot complete the questionnaire alone due to illiteracy or other reasons, investigators would read out the questions in a uniform way and make objective records according to answers.

The questionnaires with complete absence or absence rate $\geq 50\%$ of all dimensions were eliminated directly and valid questionnaires were estimated and filled. Epidata3.0 software was used for data entry and two researchers independently entered the same data for unified logic check so as to ensure the accuracy of the data.

2.4 Statistical Approach

Data which were exported from Epidata3.0 to SPSS 20.0 software should be made statistical analysis. The main statistical methods include descriptive statistics, independent sample *t* test, χ^2 test, Pearson correlation analysis and multiple linear regression analysis.

2.5 Ethical Approval

The procedure and contents of this study conform to the ethical standards set by the Ethics Committee of Chinese Medical Association with approval of this committee.

3. Result

3.1 Descriptive Statistics

The total well-being scores of this group are (39.83 \pm 6.04) and the total SSRS scores are (31.15 \pm 7.29). It indicates that the Subjective Well-Being of the elderly in this group is relatively high and they get relatively satisfactory social support as shown in Table 1.

Table 1. The descriptive statistics of MUNSH and SSRS score

Part	X \pm s	Min	Max
Total happiness degree	39.83 \pm 6.04	12.00	62.00
PA	7.08 \pm 1.76	2	10.00
NA	87 \pm 1.93	0	10.00
PE	10.20 \pm 2.43	0	29.00
NE	57 \pm 1.28	0	8.00
Total SSRS score	31.15 \pm 7.29	14.00	49.00
Objective support	8.25 \pm 2.49	3.00	15.00
Subjective support	15.70 \pm 3.18	7.00	22.00
Support use degree	7.20 \pm 2.79	3.00	12.00

3.2 Single Factor Analysis of Total MUNSH Scores' Influencing Factors

According to single factor analysis, 34 items have statistically significant effects on MUNSH total scores, such as living mode (df=3, F =-33.476, P =.000), gender (t=-3.414, P =.001), education level (df =4, F =-36.465, P <.001), marital status (df=2, F =-35.880, P <.001), health status (df =3, F =-173.360, P <.001), self-care condition (df =4, F =-12.194, P <.001), suffering from several chronic diseases (df=4, F = 3.369, P =.009), with or without children (t =-7.530, P <.001), relationship with children (df =3, F=-20.431, P<.001), the frequency of children visiting (df =3, F =-23.255, P<.001), self-rated degree of loneliness (df =4, F=32.831, P<.001), liking mahjong and poker or not (t=-6.234, P<.001), having chess hobby or not (t =-3.735, P<.001), liking physical exercise or not (t= -4.802, P<.001), whether they like TV, newspapers or radio (t=-4.729, P<.001), whether they like to sit around and chat (t=-3.024, P =.003), whether they have pets (t= -5.955, P<.001), whether there is a housing problem (t =3.744, P <.001), whether they are concerned about medical costs (t=3.586, P <.001), whether they are worried about their children visiting less (t=3.717, P<.001), whether they are worried about loneliness (t =4.335, P<.001), whether there is nothing to worry about (t= -3.615, P <.001). favorite pension method (df =3, F =9.251, P <.001), whether legal aid is required for day care services (t=4.732, P<.001), need for room service (t=2.042, P=.041), need for escorted medical service (t= 3.202, P=.002), degree of objective support (r =.458, P<.001), subjective support (r=.377, P<.001), support utilization (r =.399, P<.001), total score of social support (r =.481, P<.001), sleep quality (df =3, F =-15.870, P <.001), main economic sources (df =5, F=17.215, P =.004), pension level (df =-5, F= -33.034, P<.001), monthly income level (df =5, F= -4.214, P=.016).

And 15 items have no statistic meaning on total MUNSH scores, such as origin (df =4, F=1.035, P=.278), age stage (df =2, F=2.374, P=.094), medical convenience (df =3, F=-1.874, P=.132), whether enjoy subsistence allowance (t=1.461, P=.062), occupation before retirement (df=4, F=1.726, P =.178), monthly consumption amount (df =3, F=-1.256, P=.237), whether like to do housework (t=-1.350, P =.177), whether they want to get home medical service (t=-.049, P=.961), whether they are worried that no one will take care of them in life (t=1.078, P=.281), whether they need domestic help (t=1.503, P=.134), whether they need telephone hotline service (t =.464, P=.643), whether they want others to do shopping for them (t=.994, P=.322), whether a shower escort is

required (t=.310, P =.757), whether a day care service is required for the elderly (t=.298, P=.766) and whether life service is required (t=.101, P=.920).

3.3 Regression Analysis

3.3.1 Variable Assignments

The possible conditions (alternative answers) of 35 variables (demographic variables and psycho-social variables) with significant influence on MUNSH score in uni-variate analysis were assigned, and the results were shown in Table 2.

Table 2. Variable assignments

Project	options and assignments
1.gender	0=female, 1=male
2.educational level	0=illiteracy, 1=primary school or below, 2=junior school, 3=senior high school and technical secondary school, 4=junior college or college
3.whether have children or not	0=no, 1=yes
4.relationship with children	0=without children, 1=many conflicts, 2=common relationship, 3=good relationship
5.the frequency of children visiting	0=without children, 1=little, 2=sometimes, 3=often
6.marital status	0=bereft of one's spouse; 1=unmarried; 2=married with spouse alive
7.living mode	0=living alone, 1=in a nursing home, 2=living with children, 3=living with spouse
8.self-care condition	0=by nursing home, 1=by nurse, 2=by children, 3=by spouse, 4=on their own
9.health condition	0=very bad, 1=not good, 2=common, 3=very good
10.with a few chronic diseases	0=no 有, 1=one, 2=two kinds, 3=three kinds, 4=four kinds or above
11.sleep quality	0=so bad, 1=not good, 2=common, 3=very good
12.main economic source	0=pension, 1=saving, 2=from children, 3=from other family members, 4=subsistence allowance, 5=commercial assurance
13.pension level	0=less than 1000 RMB, 1= 1001~1500RMB, 2=1501~2000RMB, 3=2001~2500RMB, 4=2501~3000 RMB, 5=3001RMB or above
14.monthly income level	0=less than 1000 RMB, 1=001~1500RMB, 2=1501~2000RMB, 3=2001~2500RMB, 4=2501~3000RMB, 5=3001RMB or above
15.self-rated loneliness degree	0=never, 1=occasional, 2=sometimes, 3=often, 4=always
16.Whether like playing mahjong or poker	0=no, 1=yes
17.whether like chess activities	0=no, 1=yes
18.whether like sports excise	0=no, 1=yes
19.whether like reading newspapers and listening to radios	0=no, 1=yes
20.whether like sit around and chat	0=no, 1=yes
21.whether keep pets	0=no, 1=yes
22.whether have housing problems	0=no, 1=yes
23.whether worry about medical charges	0=no, 1=yes
24.whether worry about less children visiting	0=no, 1=yes
25.whether worry about loneliness	0=no, 1=yes
26.whether worry about nothing	0=no, 1=yes
27.favorite way of old-age care	0=by children, 1=in a nursing home, 2=in a community, 3=self-care
28.whether want day-care service	0=no, 1=yes
29.whether need food delivery service	0=no, 1=yes
30.whether need accompanying medical service	0=no, 1=yes

3.3.2 Multiple Linear Regression Analysis of Influencing Factors of MUNSH Total Scores

Multiple linear regression analysis is conducted with MUNSH total scores as the dependent variable and 34 variables found by uni-variate analysis with statistically significant influence on UNSH total score as the independent variable. Results show (Table 3), some items are positively correlated with MUNSH total score ($B=.114 \sim .587$, $P=.000 \sim .020$), like living mode, marital status, educational level, health status, frequency of children visiting, whether like to play old-type poker or mahjong, whether keep pets, pensions level, social support total score. Some items are negatively correlated with MUNSH scores ($B = 0.077 \sim -.521$, $P = .000 \sim .476$), such as self-rated loneliness degree, whether worry about medical expenses, housing problems, whether need to get the day-care or legal aid services.

Table 3. Multiple linear regression analysis of the main influencing factors of MUNSH total scores

Dependent variable independent variable	regression coefficient		Standardized regression coefficient	t value	P value	R ²
	β	SE				
MUNSH living mode	1.814	.307	.217	6.038	<.001 .594	.597
Total score marital status	2.521	.275	.316	8.575	<.001	
Education level	1.459	.204	.152	2.388	.027	
Health status	4.570	.327	.587	2.507	.020	
Pension class	3.919	.247	.513	4.692	<.001	
Frequency of children visiting						
Whether like playing poker	1.303	.243	.146	2.213	.034	
Whether like keeping pets	1.531	.216	.166	3.861	<.001	
Total score of social support	1.091	.239	.114	3.304	<.001	
Whether need day-care	1.787	.267	.198	2.095	.036	
Self-rated loneliness level						
Whether worry about medical expenses	-3.469	.291	-.413	-6.374	<.001	
Whether have housing problems	-4.081	.256	-.521	-4.327	<.001	
Whether need day-care	-1.432	.400	-.130	-3.556	<.001	
Legal aid service	-.651	.238	-.077	-2.736	<.001	

4. Discussion

In this study, the total MUNSH scores are (39.83 ± 6.04) and the total SSRS scores are (31.15 ± 7.29), which is consistent with results in previous literature^[15-17]. It suggests that the Subjective Well-Being of the elderly in this group is higher and they generally get more satisfactory social support. According to this study, some items are positively correlated with MUNSH total score, like living mode, marital status, educational level, health status, frequency of children visiting, whether like to play old-type mahjong or poker, whether keep pets, pensions level, social support total score, while some items are negatively correlated with MUNSH score, such as self-rated loneliness degree, whether worry about medical expenses, housing problems, whether need to get the day-care or legal aid services.

Health status is a positive predictor of subjective well-being in the elderly, which is consistent with the results of previous studies^[15-18]. It suggests that physiological function plays an important role in mental health. Poor health conditions tend to make individuals feel uncomfortable and lost (including physiological and social functions).

As most of health problems of the elderly are the result of aging, they can only play a limited (sometimes even powerless) role in this, which may easily lead to depression, anxiety and other negative emotions^[19-20], so as to reduce subjective well-being.

According to many literature, the participation degree of sports and entertainment can positively forecast the subjective well-being of the old^[21-22]. However, through this research, only playing old-type mahjong and poker can positively forecast the subjective well-being of the old in many sports and entertainment activities. As for its reason, playing old-type mahjong and poker is the most suitable for physical and mental characteristics of the elderly. Due to reduced physical agility and intelligence, most elderly people (especially over 70) are not reasonable to regular exercise, such as running, playing ball games, dancing or normal leisure activities, such as karaoke, online games, travel. However, playing the old-type mahjong and poker can be economic, interesting, appropriate for men and women, without time constraint, easy to enhance friendship, which can make the elderly more pleasant with positive experience^[23].

Previous literature has pointed out that income level can positively predict the subjective well-being of the elderly^[15,16,24]. This study finds that monthly income has no significant predictive effect on the Subjective Well-Being of the elderly, while pension is a positive predictor, which is inconsistent with the above research results. It is sug-

gested that the connotation and significance of monthly income and pension are different for the elderly. Monthly income includes not only pension (if the person is entitled to pension), but also money provided by children or relatives as well as social benefits. Therefore, monthly income is not stable. The pension is relatively stable, which is related to the working years and position level of the elderly before retirement. Relatively, stable pensions are more important for the elderly who are both less able to work and live independently.

The social support level of the elderly in this group is relatively high and it is positively correlated with overall well-being, which is consistent with the results of previous studies^[16,25]. This is because the old are losing their physiological and social functions, which are increasingly dependent on outside support and help. Although the support of this group of empty-nest elderly from children is less than generally, to some extent, it complements the lack of children support, making “the old have something to depend on, something to support” because of old-age support of the government organs at all levels in recent years, many kinds of effective measures to help the elderly^[26], as well as various forms of “support group” between the old at the same time^[27]. Marital status and living mode are independent predictors of the overall Subjective Well-Being of the elderly and the happiness of widowed and single people is significantly lower than that of married and well-married couples, which is consistent with the results of previous studies^[15,16,28]. Spouse is the most important source of social support for the elderly. And a good relationship between husband and wife can make the elderly calm and happy, so as to improve their happiness. The living mode reflects the positive correlation between the availability of important social support and subjective well-being. The availability of important social support and subjective well-being of the four categories of elderly -- living alone, living in nursing homes, living with children and living with spouse -- increased in turn. Because this group of objects is empty nesters, even if “living with children”, they can not as often and timely get their children’s care and help as those who live with their spouses.

The frequency of children’s visits can positively predict the overall well-being of the elderly, which is consistent with the results of previous studies^[29-32]. The frequency of children’s visits actually reflects the extent of children’s spiritual support to their parents^[29]. Compared with the material support of their children, it is more able to bring old parents affectionate care, emotional comfort and personality respect, improve their self-esteem, self-confidence, optimism and other positive psychological experience, which is conducive to the improvement of subjective well-being^[33].

ive well-being^[33].

The subjective well-being of the elderly with pets is significantly higher than that of the elderly without pets, which reflects the positive forecasting effect of social support on subjective well-being from another perspective. For empty nesters, pets are close and reliable friends as a special form of social support^[34], which provide daily interactions, assistance in difficulties and emotional comfort for empty nesters.

The education level positively predicts the subjective well-being of the elderly, which is consistent with the results of previous studies^[24,32]. Generally speaking, highly educated people have richer social experience and life contents, better comprehension ability and more flexible thinking. They are better able to regulate emotions, adapt to new environment and new life^[32] who can find interests and absorb nutrients from life.

Loneliness can negatively predict subjective well-being, which is consistent with the results of previous studies^[32]. Loneliness is a kind of social situation, which individuals can be aware of actual social relations worse than their expected situation with pain experience of isolation or lack of contact with others^[35]. It reflects negative subjective experience of interpersonal alienation and even deficiency, social support deficiency^[36], which may tend to increase incidence of disease and mortality, cause negative emotions, such as depression and suicidal thought^[37], so as to severely lower subjective well-being.

Three items are negatively correlated with subjective well-being of empty nesters, which is consistent with the results of previous studies^[15,16,32], including whether they worry about medical expenses, whether they have housing problems and whether they need legal aid for day care services. The three contents above reflect the subjective difficulties of empty nesters to some extent. The more difficult the subjective life is, the lower the subjective well-being of empty nesters will be.

5. Conclusion

The influence factors of subjective well-being of empty nesters are various. It can be divided into two categories: One is the influence of positive factors, which is mainly life resources of empty nesters, including material resources like pension, and spiritual resources, such as spouse’s care, children support, good health, higher education level, liking playing old-type mahjong or poker, keeping pets, higher pensions class, higher degree of social support; The other is the positive influence factors, mainly subjective living difficulties of empty nesters, such as self-rated loneliness, worrying about medical expenses, housing problems and need for legal assistance of day

care services.

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