

Analysis on the Influencing Factors of Nursing Needs of the Elderly in Qiqihar Pension Institutions

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Abstract: Objective: To investigate and analyze the nursing service demand of the elderly in Qiqihar pension institutions, explore its influencing factors, and provide basis for the development of nursing service in pension institutions. Methods: The general information questionnaire, Barthel index rating scale and nursing service demand questionnaire were used to investigate the elderly. According to the random sampling method, 242 elderly people from 5 pension institutions registered and operated by civil affairs department in the urban area were investigated by questionnaire. Results: There were significant differences in nursing service demand among the elderly in age, education level, monthly income level, self-care ability and awareness of nursing institutions in Qiqihar ($P < 0.05$). Conclusion: The elderly in Qiqihar City have a large demand for nursing services in pension institutions (88.21 ± 19.06), mainly focusing on health care and rehabilitation guidance (44.23 ± 7.28) and basic life nursing services (32.14 ± 7.56). The age, education level, monthly income level, self-care ability and recognition of nursing institutions are the main influencing factors of nursing service demand.

1. Introduction

The aging of population is a big problem that China and other countries in the world are facing and need to solve [1]. Relevant reports show that by the end of 2015, China's population aged 60 and above reached 220 million, accounting for 16.1% of the total population [2]. According to [3] statistics of Qiqihar Statistical Bureau, as of 2019, the total number of the population in the city was 5266513, the number of elderly people aged 60 and above accounted for 1177180, accounting for 22.35% of the total registered residence population in the city, and the aging situation was grim. With the weakening of traditional concepts and the transformation of social functions, the transformation of pension models has become a trend [4]. This study is based on the survey of the demand for elderly care services in elderly care institutions in Qiqihar City, and analyzes the influencing factors. It provides an important basis for the implementation of personalized and targeted nursing services for the elderly in elderly care institutions, thereby improving the elderly in elderly care institutions. People's service level and ability.

2. Research Objects and Methods

2.1 Object of Study

Using the convenient sampling method, the elderly in five elderly care institutions in Qiqihar city were selected as the research objects, and 260 elderly people who met the inclusion criteria were randomly selected for questionnaire survey.

2.2 Method

2.2.1 Survey Tool

(1) general data questionnaire: through consulting a large number of documents and related materials, the members of the research group designed their own general data questionnaire for the elderly in old-age care institutions, which mainly included the gender, age, education level, marital status, monthly income source, monthly income level, number of illnesses, awareness of old-age care institutions and so on. (2) Activity of daily living: Barthel index scale was used, with the highest score of 100. > 60 points: take care of yourself, 41 ~ 60 points: moderate disability, need help in daily life; 21 ~ 40 points: severe disability, obvious dependence on daily life; ≤20 points: completely disabled and completely dependent on daily life. (3) Nursing service demand questionnaire for old-age care institutions: Based on Maslow's demand theory, the questionnaire was designed and compiled by ourselves, which was divided into five dimensions and 15 items in total. Each item is scored in accordance with the likert4 rating method (4= very needed, 3= needed, 2= not required, 1= not required) four grades [5]. The more the score is carried out in strict accordance with the inclusion and exclusion criteria in the survey. The inclusion criteria: ① age ≥ 60 years; ② living time of pension institutions ≥ 3 months; ③ informed consent and voluntary participation in the survey. The criteria for exclusion: ① severe hearing impairment; ② cognitive impairment; ③ unwilling to participate.

High means higher demand. Randomly select 30 elderly people in elderly care institutions for pre-survey, Cronbach, s α coefficient is 0.815, and then re-test, the test-retest reliability coefficient is 0.859. The questionnaire survey was carried out using the general information questionnaire of the elderly, the Barthel index rating scale, and the nursing service demand questionnaire of elderly care institutions. In the survey process, after seeking the informed consent of the elderly, a one-to-one format was adopted. After each questionnaire was answered by the elderly, the researcher filled in. A total of 260 questionnaires were issued, and 242 were valid, with an effective recovery rate of 93%.

2.2.2 Statistical Method

SPSS22.0 statistical software package was used to input and analyze the collected data. General data and activities of daily living were described by general statistics. The average and standard deviation were used to count the scores of nursing service needs of the elderly in old-age care institutions. T-test was used to compare the mean of the two samples. Spearman correlation analysis was used to express the correlation between the general situation of the elderly and nursing service needs. Multivariate stepwise linear regression analysis was used to analyze the influencing factors of nursing service needs of the elderly in old-age care institutions. Test level $\alpha=0.05$, $P<0.05$ was statistically significant.

3. Result

3.1 General Information

The general information of the elderly in the elderly care institutions is shown in Table 1.

Table 1 General Information Of Elderly in Pension Institutions

Project	Number of people (n)	Proportion (%) 90()	Project	Number of	Proportion (%) 90()
Gender			Income level		
Male	113	46.7	Below 1000	26	10.7
female sex	129	53.3	1001-3000	116	47.9
Age (years)			Above 3000	100	41.3
65-75	131	54.2	Number of diseases (species)		
76-85	77	31.8	0	18	7.4
Over 86	34	14.0	1-2	151	62.4
Education level			3-4	30.2	

			73		
University or above	88	36.4	Self-care ability		
Secondary and technical secondary schools	109	45.0	Completely self-care	73	31.2
Primary school	45	18.6	Partly self-care	131	54.1
Marital status			Can't take care of yourself	38	15.7
Married	114	47.1	Awareness of elderly care institutions		
Divorce	37	15.3	Know very well	83	34.3
Widowed	91	37.6	To understanding	138	57.0
Source of monthly income			Don't understand	21	8.7
Pension	172	71.1			
Child support	43	17.8			
Other	27	11.1			

3.2 Activities of Daily Living of the Elderly

According to the Barthel Index Rating Scale, 36.4%(88/242) of the elderly in old-age care institutions need to take care of their activities of daily living. (see table 2)

Table 2 Activities of Daily Living of the Elderly in Old-Age Care Institutions

Project	Basic self-care n (%)	Need help n (%)	Life dependence n (%)	Totally dependent on n (%)
Eat	173(71.5)	49(20.2)	-	20(8.3)
Transfer	144(59.5)	61(25.2)	29(12.0)	8(3.3)
Retouch	224(92.6)	-	-	18(7.4)
To the restroom	183(75.6)	48(19.8)	-	11(4.5)
Take a bath	184(76.0)	-	-	58(23.9)
Walking (flat ground)	155(64.0)	51(21.1)	28(11.6)	8(3.3)
Down stairs	151(62.4)	55(22.7)	-	36(14.9)
Dress and undress	161(66.5)	63(26.0)	-	18(7.4)
Stool control	173(71.5)	59(24.3)	-	10(4.1)
Urinary control	186(76.9)	46(19.0)	-	10(4.1)

Note: in the survey items of activities of daily living of the elderly in pension institutions, the items of decoration and bathing are divided into 2 grades; the items of eating, dressing, going to the toilet, going up and down stairs, stool control and urination control are divided into 3 grades; the items of transfer and walking (flat) are divided into 4 grades.

3.3 Survey on the Needs of Elderly Care Services in Elderly Care Institutions

According to the questionnaire survey of the elderly in old-age care institutions, the total nursing service demand of the elderly in old-age care institutions is 88.21 19.06 points, and the standardized score is 56.1%. Among the nursing service needs of the elderly in old-age care institutions, the highest score is health care and rehabilitation guidance, with a score of 44.23 7.28, followed by basic living care, professional medical care again, with a score of 32.14 7.56, and psychological care, with a score of 24.28 6.25. See Table 3 for details.

Table 3 Survey on Nursing Service Demand of the Elderly in Pension Institutions

Project	Score	Standardized score (%)
Basic life care services	36.81±8.32	55.6
Professional medical care services	32.14±7.56	53.3
Health Care and Rehabilitation Guidance	44.23±7.28	58.9
Psychological care	24.28±6.25	48.7
Total Nursing Service Demand Score	88.21±19.06	56.1

Note: Standardized score = actual score / highest possible score of the scale * 100

3.4 Correlation Analysis of Nursing Service Demand Scores of the Elderly in Old-Age Care Institutions

Spearman correlation analysis was carried out by substituting the factors in the single factor analysis of nursing service demand of the elderly in pension institutions. The results showed that the elderly's age, education level, monthly income level and awareness of nursing institutions were positively correlated with the demand for nursing services ($P < 0.05$), while self-care ability was negatively correlated with the demand for nursing services ($P < 0.05$), while gender, number of patients, marital status and monthly income sources were not correlated with the demand for nursing services ($P > 0.05$). See Table 4 for details.

Table 4 Correlation Analysis Of General Information of the Elderly in Elderly Care Institutions and the Scores of Nursing Service Demand (n=242)

Project	r value	P value
Gender	0.561	0.325
Age (years)	0.425	0.024
Income level	0.343	0.017
Number of diseases (species)	0.157	1.246
Education level	0.597	0.031
Self-care ability	-0.714	0.002
marital status	0.613	0.083
Awareness of elderly care institutions	0.528	0.041
Monthly income source	0.492	0.079

3.5 Multiple Stepwise Regression Analysis of Nursing Service Needs of the Elderly in Old-Age Care Institutions

With nursing service as the independent variable, age, income level, education level and self-care ability as the dependent variable, multiple stepwise regression analysis showed that there were significant differences in age, education level, income level and self-care ability ($P < 0.05$), as shown in Table 5 and table 6.

Table 5 Assignment Table Of Independent Variables

Independent variable	assignment
Gender	Male = 1; female = 0
Age (years)	65-75 years old = 1; 76-85 years old = 2; over 86 years old = 3
Education level	Primary school = 1; secondary school and technical secondary school = 2; university and above = 3
Marital status	Married = 1; divorced = 2; widowed = 3
Source of monthly income	Pension = 1; child support = 2; others = 3
Income level	Below 1000 = 1; 1001-3000 = 2; above 3000 = 3
Number of diseases (species)	0=1;1-2=2;3-4=3
Self care ability	Complete self-care = 1; partial self-care = 2; unable to self-care
Awareness of pension institutions	Very understanding = 1; understanding = 2; not understanding = 3

Table 6 Regression Analysis Of Demand for Elderly Care Services in Elderly Care Institutions

Project	Independent variable	Partial regression coefficient	Standard error	Wald chi square value	Or value	95%CI	P value
Age	Nursing service demand	3.516	1.560	28.154	11.419	8.164-27.218	0.003
Education level	Nursing service demand	3.791	1.428	8.941	4.172	2.671-6.819	0.031
Income level	Nursing service demand	3.126	1.942	4.179	0.427	0.168-1.438	0.029
Self care ability	Nursing service demand	3.800	1.854	11.790	5.194	3.648-9.158	<0.001

4. Discussions

4.1 Daily Living Ability and Nursing Needs of the Elderly in Old-Age Care Institutions

The survey results show that 36.4%(88/242) of the elderly in old-age care institutions need different levels of care for their activities of daily living. The total score of nursing service demand of the elderly in old-age care institutions is 88.21 19.06, and the standardized score is 56.1%, which shows that the elderly in old-age care institutions have higher nursing demand. Among them, the highest score is health care and rehabilitation guidance, with a score of 44.23 7.28, indicating that the elderly in old-age care institutions pay great attention to their own health and guidance, and have a strong sense of self-health management. It may be related to the number of diseases the elderly suffer from. In the survey, 92.6% of the elderly in old-age care institutions suffer from at least one or more chronic diseases. The number of elderly patients is proportional to the attention to their health status, which is consistent with Han Yang [6]. Secondly, the basic life care service, score 32.14 ± 7.56 , is essential to meet the elderly's essential life care service in the elderly care institutions. The score of the service was 32.14 ± 7.56 , and the elderly in the elderly need professional medical and nursing services. Finally, psychological nursing was given, with a score of 24.28 ± 6.25 . Psychological nursing may be related to the level of the investigators' culture.

4.2 Factors Influencing the Needs of Elderly Care in Elderly Care Institutions

4.2.1 Age

As the elderly continue to grow older, the function of their organs gradually declines, and the prevalence increases. Therefore, the demand for overall care services also increases. The older the elderly, the higher the demand for nursing services, which is consistent with the results of existing research [7]. Therefore, in the process of nursing health guidance and rehabilitation guidance, it is necessary to focus on the degree of acceptance according to different age groups.

4.2.2 Education Level

The survey found that the higher the education level of the elderly in elderly care institutions, the higher their demand for nursing services. This is consistent with the research of Sun Jing [8]. This may be related to the reading ability and self-health consciousness of the elderly with high literacy level, and they can learn relevant knowledge through different channels. Among them, the elderly in elderly care institutions have a higher demand for health care knowledge and health care knowledge. Zhang Xiaona [9] and others found in the survey and analysis of community elderly care service needs that the elderly with high educational level pay more attention to health care and health care knowledge. When conducting health education in elderly care institutions, the content of the education and education for the elderly of different education levels must be targeted.

4.2.3 Monthly Income Level

The higher the income level of the elderly, the higher their nursing needs. On the contrary, the lower the income level of the elderly, the lower their nursing needs. This is consistent with the study of Luo Shirong [7]. This shows that the elderly with low economic income may not be able to better bear the economic pressure, which to a certain extent suggests that the relevant departments should increase investment and establish a reasonable compensation mechanism, so that more elderly people can enjoy their old age without pressure.

4.2.4 Self-Care Ability

The poorer the self-care ability of the elderly in the old-age care institutions, the higher their nursing needs. Self-care ability According to the investigation of the activities of daily living of the elderly, 36.4%(88/242) of the elderly in old-age care institutions need to take care of their activities of daily living. According to the level of self-care ability of the elderly in old-age care institutions, it is necessary to strengthen the construction of old-age care institutions, attach importance to old-age care and improve the quality of life of the elderly. Lu Peipei et al. [10] found that the maintenance needs of the elderly are different under different maintenance modes, and the scores of

material needs and medical health needs in nursing home maintenance mode are higher than those in family maintenance mode. Due to the large number of elderly people suffering from at least one or more chronic diseases in pension institutions, and the relatively poor self-care ability and health status, the elderly people in pension institutions pay more attention to their own health and guidance, and have higher requirements for medical and health services.

4.2.5 Recognition of Pension Institutions

With the increasing number of elderly, disabled, demented elderly and elderly suffering from chronic diseases, it is particularly important for elderly care services to provide more specialized health care services on the basis of ensuring the needs of the elderly in daily life care[11]. The survey found that some elderly people are unclear and insufficiently aware of elderly care services in elderly care institutions. The quality of nursing service is the core element of old-age care institutions, and it is also a very important standard to measure the overall quality of old-age care institutions [12]. This is consistent with the research of Ding Zhihong [13]. At present, the most urgent task is to strengthen the education of medical care services in old-age care institutions, further clarify professional service standards, and provide high-quality nursing services for the elderly.

5. Conclusions

Research limitations: This study only randomly selected five elderly care institutions in three districts of Qiqihar city to conduct a questionnaire survey. The survey is regional, and the representativeness is not wide enough. The differences in city level, regional economic development level, regional culture, people's living standards and health status can not represent the demand and level of nursing services for the elderly in the national pension institutions. There may be some bias when investigators are trained online during the epidemic period. Therefore, whether the results can be inferred to elderly care institutions in other regions needs further verification. The elderly in Qiqihar's elderly care institutions have a greater demand for nursing services, and the demand for nursing services is affected by factors such as age, education level, monthly income level, self-care ability, and recognition of elderly care institutions. When optimizing and perfecting the nursing service demand and system of old-age care institutions, we should pay attention to meeting the overall needs and psychology of nursing services for the elderly, so that the elderly in old-age care institutions can provide for the elderly with peace of mind and a sense of security for the elderly.

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References

- [1] Cao Jingjing, Zhang Huiying, Ma Li, et al. Demand for nursing services in nursing homes in Shihezi urban area and suggestions for the model of integrated medical care[J]. *Electronic Journal of Clinical Medicine Literature*, 2017, 4(4): 722-723.
- [2] Prince, M.etal.Recent global trends in the prevalence and incidence with dementia.*Alzheimers Res Ther*, 2016, 8(1): 23.
- [3] Qiqihar City Statistics Bureau. *Yearbook of Leading Cadre Information Manual*, 2020.
- [4] Liu Hongjuan. Analysis of the willingness and influencing factors of the elderly pension model choice in Shandong Province[D]. Shandong: Shandong University, 2019.

- [5] Han Yang. Investigation on the selection of elderly care institutions and nursing service needs of the elderly with integrated medical care[D]. Liaoning: Jinzhou Medical University, 2018.
- [6] Kong Linglin, Zhao Mengxia, Bao Cuiyu, et al. Analysis of the needs and influencing factors of home care services for the elderly in the community [J]. Journal of Nursing Science, 2016, 31 (7): 15-17.
- [7] Luo Shirong, An Xiaoqian, Zheng Yi, et al. Research on the needs and influencing factors of elderly care services in elderly care institutions in Zunyi City[J]. Modern Preventive Medicine, 2018, 45(20): 3739-3742.
- [8] Sun Jing, Jiang Xiaoying. Research on the needs and influencing factors of nursing services for the elderly in nursing homes in Fuzhou[J]. Chinese Nursing Education, 2016, 13(9): 645-649.
- [9] 2016, 13(9): 645-649.
- [10] Zhang Xiaona, Liu Guolian, Ma Yinan, et al. Investigation and analysis of the needs of elderly care services for the elderly in Yinchuan City [J]. Harbin Medicine, 2013, 33(5): 353-354.
- [11] Lu Peipei, Li Hongyu. Research on the difference of the elderly's maintenance needs and maintenance ability under different maintenance modes[J]. Chinese General Practice, 2015, 18(15): 1780-1785.
- [12] Xu Mingjiang, Zhao Yunxian, You Jianpeng, et al. Study on the willingness and influencing factors of home care for the elderly in Nanning community[J]. Chinese General Practice, 2020, 23(18): 2328-2334.
- [13] Guo Hongyan, Peng Jialin, Lei Yang, et al. The characteristics and enlightenment of service quality evaluation in American elderly care institutions[J]. Chinese Journal of Nursing, 2013, 48(7): 652-654.
- [14] Ding Zhihong, Wang Lili. Research on the Equalization of Home Care Services in my country's Community[J]. Journal of Demography, 2011, 33(5): 83-88.