

Investigation and Analysis of the Physical Exercise Status of the Elderly in Qilin District Nursing Home of Qujing City

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Abstract: In the nursing home, the elderly live together, communicate with each other and entertain together. The investigation found that the elderly in Qilin District Nursing Home of Qujing City rarely take part in physical exercise, and the content of the exercise is its single, the most common exercise is jogging, Qigong and Taijiquan. And there are no perfect sports facilities for the elderly to do physical exercise; and no professional social sports instructors to guide the elderly. In addition, the staff in the nursing home will hardly organize collective physical exercise activities or regularly publicize physical exercise knowledge. Therefore, it is necessary to study and analyze the physical exercise of the elderly in the nursing homes in this area. This paper focuses on the gender and age of the elderly, the education level, the spouse, the situation and influencing factors, the purpose and motivation of the physical exercise, the frequency and intensity of the physical exercise, and the development of the exercise and enhance the awareness of the elderly physical exercise. According to the data released by National Bureau of Statistics, China began to enter an aging society in 2000, and by 2018, the proportion of the population aged 65 and above reached 11.9%, and the aging degree of the population continues to deepen ^[1]. The change of population structure has greatly challenged the traditional concept of "raising children for old age", and the social pension with the nursing home as the main body will become an inevitable choice for many elderly people ^[2]. The nursing home is a professional institution for the elderly, with various necessary facilities for the elderly, which can provide them with convenient conditions such as food, clothing, housing and use. In nursing homes, people of similar age teach them to live together, communicate together and entertain together, which can avoid the loneliness caused by family pension and self-retirement ^[3]. Because the elderly in the nursing home live together for a long time, it is easy to organize together to participate in sports and fitness activities. However, most of the nursing homes in China are social welfare institutions for the special elderly groups, and the service objects are mostly the most vulnerable social groups, with few service items. There is a lack of specialized talents to provide physical exercise guidance for the elderly, and it is difficult to provide scientific, systematic and effective physical exercise guidance for the elderly. Therefore, it is of great practical significance to study and analyze the current situation of physical exercise for the elderly in nursing homes.

Keywords: kylin district; nursing home; the elderly; physical exercise

1. Study subjects and methods

1.1 Study subjects

The study subjects were the elderly in Baishijiang Street, Xicheng Street, Chenzhen and Jiuhua Nursing homes, Qilin District, Qujing City, Yunnan Province.

1.2 Study Methods

1.2.1 Literature and data method

Through the channels of Yunnan Normal University Library, Yunnan Library, Kunming Library, Qujing Library, Wanfang Database and CNT, we search the core journals and works of sports and comb the existing research results, which lay a theoretical foundation for the development of this research.

1.2.2 Questionnaire survey method

This study used questionnaire survey to understand the current situation of physical exercise among the elderly in Qilin District Nursing home. In order to avoid subjective bias may bring sampling bias, the study using the method of random sampling, first from kirin area east, south, west, north four different orientation each selected 1 nursing homes (respectively is baishi jiang street nursing homes, west street, Chen really nursing homes and nine homes), and then randomly selected from four nursing homes in the 560 elderly questionnaire survey. Considering the low educational level of the elderly in the nursing home, the questionnaire survey completed the survey by reading to the elderly question by question, the elderly answered orally, and the respondents recorded one by one.

1.2.3 Mathematical and statistical method

The survey results were entered into Excel 2016, and then Excel 2016 was used to analyze the survey data, form statistical tables and statistical maps, and draw the survey conclusio

2. Study results and analysis

2.1 Basic information of the elderly in the four nursing homes in Qilin District

Table 1: Gender and age structure of the elderly in the four nursing homes in Qilin District

Sex and age group	number of people	proportion
Male, 60-69	104	18.6%
Female 60-69	97	17.3%
Male number 70-79	178	31.8%
Female 70-79	157	28%
Male, 80 and above	10	1.8%
Female of 80 and above	14	2.5%
amount to	560	100%

As can be seen from Table 1, among the elderly in Qilin District, 104 male elderly people aged 60-69 accounted for 18.6%, 97 female elderly people accounted for 17.3%; 178 male elderly people accounted for 31.8%, 157 female elderly people accounted for 28%; 10 male elderly people over 80 years old accounted for 1.8%, and 14 female elderly people accounted for 2.5%. It can be seen that the elderly in the nursing home in this area are mainly 70-79 age stage.

Table 2: Education status of the elderly in the four nursing homes in Qilin District

Educational status	Have a school education experience	Literacy but had no school education experience	an illiterate person	amount to
number of people	102	161	297	560
proportion (%)	18.2	28.8	53.0	100

As can be seen from Table 2, there are 297 illiterate elderly people in Qilin District nursing home, accounting for 53.0%, only 102 people with school education experience accounting for 18.2%, and 161 elderly people with literate education but with no school education experience accounting for 28.8%. This indicates that the education level of the elderly in this area is generally low. According to the investigation, most of the elderly people living in the nursing home are the original farmers who occupy the farmland because of the urban expansion, so their education level is generally low.

Table 3: Spouses of the elderly in the four nursing homes in Qilin District

Spouse condition	unmarried	Divorce or Widowed	The spouse is still alive	amount to
number of people	186	345	29	560
proportion (%)	33.2	61.6	5.2	100

Can be seen from table 3, the elderly, divorced or widowed people 345 people accounted for 61.6%, and 18633.2% of the unmarried elderly, spouse still living elderly only 5.2%, the kirin district nursing homes in the old man is given priority to with the elderly, also shows that the homes is still in its infancy, mainly for the most vulnerable social groups to provide pension services. At the same time, it also reflects that people are influenced by traditional ideas that the service object of the nursing home is the lonely elderly.

2.2 The current situation of physical exercise for the elderly in the four nursing homes in Qilin District

2.2.1 Basic situation of physical exercise conducted by the elderly in the four nursing homes in Qilin District

In order to deepen the reform of sports, develop mass sports and advocate the new fashion of national fitness, The State Council issued the National Fitness Plan (2016-2020) in 2016 (hereinafter referred to as "Plan") [4]. According to the survey, 68.04% of the elderly in Qilin District Nursing Home know nothing about the plan, accounting for nearly 70%; only 6 people know, accounting for 1.07%. These data show that the cognitive level of the plan among the elderly in this area is very low, which is not conducive to the elderly to fully understand the importance of physical exercise, and affects the formation of the social concept of lifelong sports.

Table 4: Knowledge of the elderly in the four nursing homes in Qilin District about the National Fitness Plan (2016-2020)

ask for information	Very familiar with	Compare the understanding	know of	Don't know at all
Baishi Jiang Street Nursing home	3	12	30	83
Xicheng Street Nursing home	2	10	47	98
Chen Zhen nursing home	0	8	28	91
Jiuhua Nursing Home	1	2	36	109
amount to	6	32	141	381

As can be seen from Table 4, the elderly in Qilin District Nursing Home of Qujing City have little understanding of the National Fitness Plan (2016-2020). Among them, Baishi River Street.

There are 3 people, 10 people, 10 people, and 119 people. According to the survey, because the elderly in the area are generally low education level, they do not care about the national policy outline. Among them, Baishjiang Street Nursing Home and Xicheng Street Nursing Home are located in the city, so the education level of the elderly is higher than that of the elderly in Chen Zhen and Jiuhua Nursing Home, so the number of people who know about the plan is more.

Table 5: Physical exercise participation of the elderly in the four nursing homes in Qilin District

Nursing home name	join	non-participation
Baishi Jiang Street Nursing home	85	90
Xicheng Street Nursing home	76	88
Chen Zhen nursing home	56	79
Jiuhua Nursing Home	23	63
amount to	240	320

According to Table 5, there are 240 elderly people taking physical exercise, 85,76,56,56,23,320 physical exercise, 90,88,79 and 63. Not many elderly people participate in physical exercise overall, mainly because the elderly people are weak and not suitable to participate in physical activities, and there is no sufficient sports facilities and no professional guidance. The old people who think that their body is weak and should not participate in physical exercise have serious misunderstandings about the understanding of physical exercise.

Table 6: Statistical table of hindering factors for physical exercise for the elderly in the four nursing homes in Qilin District

obstructive factor	Baishi Jiang Street Nursing home	Xicheng Street Nursing home	Chen Zhen street Nursing home	Jiuhua Street Nursing home	amount to
without interest	25	22	14	18	79
No guidance	40	37	23	25	125
Weak body should not be used for exercise	24	23	28	31	106
The body does not need to exercise	33	31	10	10	84
No sports facilities are available	47	43	18	19	127
other	11	9	7	12	39

As can be seen from Table 6, the main reasons why the elderly in Qilin District Nursing Home in

Qijing City do not participate in physical exercise are their weak bodies and are not suitable to participate in physical exercise, without enough sports facilities and no professional guidance. The old people who think that their own body is weak and should not participate in physical exercise have a serious misunderstanding about the understanding of physical exercise.

2.2.2 Purpose and motivation of the elderly to participate in exercise in the four nursing homes in Qilin District

Motivation is the internal reason that drives people to their activities, and the purpose is the result that people want to achieve through their activities. Motivation and purpose can be converted, that is, purpose often has the function of motivation. The diversity of sports functions determines that the purpose of people participating in sports activities will be different.

Table 7: Analysis of the purpose and motivation of the elderly people participating in physical exercise in the four nursing homes in Qilin District.

purpose And move machine	Baishi Jiang Street Nursing home				Xicheng Street Nursing home				Chen Zhen nursing home				Juhua Nursing Home			
	man		woman		man		woman		man		woman		man		woman	
	number of people	proportion%	number of people	proportion%	number of people	proportion%	number of people	proportion%	number of people	proportion%	number of people	proportion%	number of people	proportion%	number of people	proportion%
Protection against the disease	66	24	44	16	79	28	58	21	86	31	30	11	45	16	43	16
Leisure and entertainment	51	25	53	33	58	29	40	25	47	23	39	24	45	22	30	19
Strengthen communication	6	23	9	26	8	31	11	31	4	15	10	29	8	31	5	14
Body-fit and body shape	10	32	12	24	8	26	14	27	9	29	16	31	4	13	9	18
count one's thumbs	49	31	35	24	46	29	36	24	30	19	49	33	35	22	27	15
other	6	33	5	38	4	22	4	31	3	17	2	15	5	28	2	15

Table 7 shows that the purpose and motivation of male and female participants in the physical fitness activities. In general, most elderly people take part in physical exercise to resist disease, improve health, recreation and spend time. This is mainly because the body becomes old, and there are various opportunities for random generation. Therefore, the elderly attach great importance to the effect of physical fitness on resisting disease and improving health. In addition, the elderly have retired, no longer have the pressure of work, and have a lot of free time. What they think most about every day is how to enrich their spare time and enrich their life. Therefore, the main reason for them to participate in physical exercise is leisure entertainment and killing time.

2.2.3 Selection of exercise programs for the elderly in the four nursing homes in Qilin District

Table 8: Selection of physical exercise programs for the elderly in the four nursing homes in Qilin District

project	man		woman	
	number of people	proportion (%)	number of people	proportion (%)
canter	101	32.5	87	35.1
Qigong and Taijiquan	56	17.9	19	7.7
Aerobics, sports dance class	8	2.6	56	22.6
table tennis	40	12.8	25	10.1
badminton	38	12.1	23	9.3
swim	19	6.1	2	0.8
bowling	0	0	0	0
rope skipping	13	4.2	15	6
gate ball	30	9.6	21	8.4
Fitness device activities	7	2.2	0	0
amount to	312	100	248	100

As can be seen from Table 8, among the physical exercise programs, the top five are jogging, Qigong, Taijiquan, badminton, table tennis and gateball. Among them, 101 like jogging accounted for 32.5%, 56 like Qigong and Tai Chi accounted for 17.9%, 38 like badminton accounted for 12.1%, 40 like table tennis accounted for 12.8%, and 30 like 9.6%. Among the sports that elderly women like to participate in, the top five are jogging, aerobics and sports dance, table tennis, badminton and goalball; 87 like jogging for 35.1%, 56 like aerobics and sports dance for 22.6%, 25 like table tennis for 10.1%, 23 like badminton for 9.3%, and 21 for 8.4%. Among them, jogging is the most popular physical exercise program among the elderly. Mainly because this project is more convenient to exercise, easier to operate, and is not limited by the site [5]. In addition to the obvious differences in qigong and Taijiquan, aerobics and sports

dance, there is not much difference in other physical exercise programs. In addition, the elderly choose tennis, bowling and fitness activities for physical exercise proportion is very low, mainly because the three kinds of projects are basically distributed in the charging venues, in the elderly itself is the most vulnerable social groups, and limited income to bear the economic burden caused by physical exercise. Therefore, the economic income limits the sports consumption of the elderly in the nursing home in this area.

2.2.4 Selection of exercise places for the elderly in the four nursing homes in Qilin District

Table 9: Selection of exercise places for the elderly in the four nursing homes in Qilin District

Exercise place	Between 60 – 64 years old and the (%)	Between 65 – 69 years old, and (%)	Between 70 – 74 years old and (%)	Are 75 years and older with (%)
Park and Square	13.2	16.3	11.1	9.1
Public sports venues	11.2	8.2	8.6	5.4
School sports venues	4.2	3	2.1	0
Nursing home	43.6	57.1	56.0	62.3
By the road or by the street	25.2	14.2	22.2	23.2
Commercial fitness place	2.6	1.2	0	0
amount to	100	100	100	100

As can be seen from Table 9, the most popular physical exercise place for the elderly in the nursing home, among which nearly 70% of the elderly aged 75 and above choose to participate in physical exercise in the nursing home. After talking with the nursing home management personnel and the elderly, this has a lot to do with the management system of the nursing home. In order to strengthen the safety management, the nursing home regularly opens the gate and does not allow the elderly to enter and exit at will. The starting point of this management mode is to ensure the safety of the elderly, but in addition to the most vulnerable social groups, few elderly people live in the nursing home.

2.2.5 Time and intensity arrangement of physical exercise for the elderly in the four nursing homes in Qilin District

Table 10: Statistical table of the number of weekly physical exercises of the elderly in the four nursing homes in Qilin District

project	man		woman		ensemble	
	number of people	proportion (%)	number of people	proportion (%)	number of people	proportion (%)
Less than one time	19	6.1	17	6.9	36	6.4
1-2 Times	91	29.2	53	21.3	144	25.7
3-4 Times	139	44.6	87	35.1	226	40.4
Five times or more	63	20.1	91	36.7	154	27.5
amount to	312	100	248	100	560	100

As can be seen from Table 10, 36 of the elderly in Qilin District participated in physical exercise less than 1 time per week, accounting for 6.4%, 144 for 1-2 times 25.7%, 226 for 3-4 times 40.4%, and 154 with more than 5 times accounted for 27.5%. This shows that the elderly pay more attention to their physical health and are willing to spend time on physical exercise. It can also be found that there is no significant difference in the frequency of men and women participating in physical exercise activity.

As can be seen from Table 11, 134 people of the elderly in the nursing home in this area for less than 30 minutes, 232 people participated in physical exercise for 30-60 minutes accounted for 41.4%, and 194 people participated in physical exercise for more than 60 minutes accounted for 34.6%. It can be seen that the elderly in the nursing home do not take physical exercise each time, and there is no significant difference between men and women.

Table 11: Statistics of the physical exercise time of the elderly in the four nursing homes in Qilin District

project	man		woman		ensemble	
	number of people	proportion (%)	number of people	proportion (%)	number of people	proportion (%)
Thirty minutes, within the clock	59	18.9	75	30.3	134	24
For about 30 – 60 min	152	48.7	80	32.2	232	41.4
More than 60 minutes	101	32.4	93	37.5	194	34.6
amount to	312	100	248	100	560	100

To judge the intensity of physical exercise, you can see the heart rate, the maximum oxygen intake, subjective feeling and so on. Considering the particularity of the elderly, the subjective feeling was used as the judgment index in the survey. Among them, the slight fever of the body is determined to be less exercise intensity, slight sweating or moderate sweating is determined to be moderate intensity, and

sweating or sweating is determined as greater exercise intensity. The findings are shown below. It can be seen that 47.7% of the exercise intensity reached the medium, 72.9% of men reached the moderate, and 28.5% of women reached the medium, with obvious difference in gender.

Table 12: Statistical table of the intensity of each physical exercise of the elderly in the four nursing homes in Qilin District.

project	man		woman		ensemble	
	number of people	proportion (%)	number of people	proportion (%)	number of people	proportion (%)
Less intense	79	27.1	138	71.5	217	44.8
medium intensity	180	61.9	51	26.4	231	47.7
The strength is larger	32	11.0	4	2.1	36	7.5
amount to	291	100	193	100	538	100

As can be seen from Table 12, 217 of the elderly in the area participated in less physical exercise accounted for 44.8%, 231 and 47.7% with moderate intensity physical exercise 47.7%, and only 36 with high physical exercise intensity accounted for 7.5%. The overall exercise intensity is low, and the exercise intensity of male and elderly is generally higher than that of female elderly.

2.2.6 Physical exercise guidance for the elderly in the four nursing homes in Qilin District

Physical fitness guidance plays an important role in the formation of fitness technology and skills and the mastery of fitness knowledge, which is conducive to the development of sports interest, habits and ability.

Table 13: Statistical chart of the elderly receiving physical exercise guidance in the four nursing homes in Qilin District

Guide the situation	Baishi Jiang Street Nursing home	Xicheng Street Nursing home	Chen Zhen nursing home	Jiuhua Nursing Home	amount to
There is always guidance	0	0	0	0	0
Sometimes there is some guidance	7	5	6	3	21
Little guidance was given	64	70	59	94	287
Never had anyone been instructed	40	39	49	48	176

As can be seen from Table 13, among the elderly in Qilin District nursing home, there are 176 elderly people who have never guided 40 in Baishi Jiang, 39 in Xicheng, 49 in Chen, 48 in Jiuhua, 287 elderly people think that few people give guidance, and sometimes only 21, and no one often guides the elderly for physical exercise. It can be seen that the overall level of physical exercise guidance for the elderly in the nursing home in the area is quite low, the elderly basically have no professional personnel to guide during physical exercise at ordinary times, and the nursing home in the area is seriously short of professional social sports instructors.

2.2.7 Physical exercise venues and facilities of the four nursing homes in Qilin District

The venues and facilities of physical exercise are the material guarantee for the elderly to participate in physical exercise.

Table 14: Adequacy of physical exercise venues and facilities near the four nursing homes in Qilin District

Sufficient situation	Baishi river street		Xicheng street		Chen Zhen		solar and lunar radiace		amount to	
	number of people	Proportion %	number of people	Proportion %	number of people	Proportion %	number of people	Proportion %	number of people	Proportion %
Very sufficient	0	0	0	0	0	0	0	0	0	0
enough	7	26	9	29	5	16	6	19	31	6.4
Basic satisfaction	23	25	37	41.1	20	22	10	11.1	90	18.6
A little lack	65	23.2	75	26.8	60	21.4	80	28.6	280	57.9
Very lack of	20	24.1	19	22.8	24	28.9	20	24.1	83	17.1

Table 14 shows that in the survey of the elderly who participated in fitness activities, most of them think that the nursing home and the surrounding sports venues and facilities cannot meet the needs. Among them, 280 people 59.7% of the elderly people think nursing facilities near a little lack, 83 people accounted for 17.1% of people think nursing facilities is very lack, 90 people accounted for 18.6% of the elderly think nursing surrounding sports facilities can meet their usual physical exercise, only 31 people accounted for 6.4% of the elderly think nursing homes and surrounding sports venues and facilities enough for the usual exercise. On the whole, there is a lack of fitness venues and facilities for the elderly, and the facilities around the nursing home are difficult to meet the exercise needs of most elderly people

and are in urgent need of improvement.

2.2.8 Organization of physical exercise activities in the four nursing homes in Qilin District

The organization of the nursing home and the sports administrative department for the elderly is the support and guarantee for the elderly to participate in physical exercise.

Table 15: Organization of physical exercise activities for the elderly in the four nursing homes in Qilin District

Organization situation	Baishi river street		Xicheng street		Chen Zhen		solar and lunar radiance		amount to	
	number of people	Proportion %	number of people	Proportion %	number of people	Proportion %	number of people	Proportion %	number of people	Proportion %
Often organize	7	20.5	6	17.6	8	23.5	13	38.2	34	7
Sometimes the organization	50	32	46	29.5	35	22.5	25	16	156	32.2
Very few organizations	69	25.3	70	25.6	74	27.1	60	22	273	56.4
Never organize	6	28.5	4	19	5	23	6	28.5	21	4.3

As can be seen from Table 15, 273 people 56.4% of the elderly think that nursing homes are usually "rarely organized", that 34 elderly people account for only 7.0%, and 21 people 4.3% of the elderly think that the nursing homes have never organized physical exercise, and the rate of sports activities in each nursing home of the four nursing homes is not much different. It can be seen that the organization degree of the elderly participating in physical exercise in the nursing homes in this area is generally low.

3. Conclusion and recommendations

3.1 Conclusion

The education level is generally very low, mainly by the most vulnerable social groups. About 70% know nothing about the National Fitness Program (2016-2020), and know little about the national physical exercise policy;

The main factors hindering them from participating in physical exercise are their weak health and most of the elderly believe that the nursing home and its surrounding sports venues and facilities cannot meet their exercise needs;

The management concept of the nursing home is old, with few service types, and basically no service content of physical exercise;

When participating in physical exercise, they rarely receive professional guidance, and nursing homes rarely organize collective physical exercise activities;

Most of the elderly can not take physical exercise, and only a few part of the elderly can do physical exercise;

The elderly people participate in physical exercise for a very short time, most of them are within an hour, and the intensity is generally low;

3.2 Recommendations

It is suggested that nursing homes and government departments should strengthen publicity, popularize physical exercise knowledge, enhance the awareness of physical exercise of the elderly, and let more elderly people consciously participate in physical exercise;

It is suggested that the relevant government departments should increase the investment in sports and fitness venues and facilities, provide policy support for the elderly to participate in physical exercise, and ensure the effectiveness of exercise;

Fruit and exercise safety; suggest that nursing homes, enrich the channels of fund raising, update ideas, improve management, and constantly enrich the service level and service types of nursing homes;

It is suggested that the nursing home should broaden the channels, hire professional social sports

instructors, provide physical exercise guidance for the elderly, and improve the organizational degree of physical exercise activities in the nursing home.

It is suggested that the staff of the nursing home should take the initiative to drive the elderly people to carry out physical exercise, so that more elderly people can participate in the physical exercise;

It is suggested that the nursing home should set up certain incentive measures to give certain rewards to the elderly with long exercise time and enough intensity, and encourage the elderly to invest more time in physical exercise;

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