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Analysis of the Current Situation and Influencing Factors of Physical Activity Among the Elderly in the Community

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Abstract: *Objective:* To explore the current situation of physical activity among elderly individuals in the community, identify influencing factors, and provide a theoretical basis for improving their physical activity levels in the future. *Methods:* A questionnaire survey was conducted among 265 elderly community residents using the Physical Activity Scale for the Elderly. *Results:* The median (p50) score on the Physical Activity Scale for the Elderly was 220.425, indicating a high level of physical activity. There was no statistically significant difference in physical activity levels between genders. *Conclusion:* Elderly individuals should be supported in actively and scientifically participating in physical activities to mitigate physical function decline and achieve successful aging.

Keywords: Community; Elderly; Physical activity

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1. Introduction

With the development of society, China's elderly population over 60 years of age has reached 178 million, accounting for 13.26% of the total population. Elderly individuals often lack contact with the community and are a high-risk group for low physical activity. However, physical activity can improve their psychological state, enhance self-recognition and sense of belonging to the community, and improve their physical health [1]. This study aims to analyze the current situation of physical activity among the community elderly and identify influencing factors, providing a reference for improving physical activity levels and making effective interventions [2].

2. Materials and methods

2.1. Subjects of the survey

From January 2023 to April 2024, 265 elderly people from neighboring communities in Baoding City were

surveyed using the convenience sampling method. Inclusion criteria were: (1) Age ≥ 60 years; (2) No mental or cognitive disabilities; (3) No major medical diseases affecting physical function tests; (4) Ability to walk independently; (5) Informed consent and voluntary participation. The samples were well represented in the pre-test.

2.2. Methodology

A questionnaire survey was conducted. Before administering the questionnaire, respondents were informed of the instructions. All 265 recovered questionnaires were valid.

2.3. Survey instruments

2.3.1. General information questionnaire for the elderly

The questionnaire was developed by the researcher through a literature review and expert consultation. It included gender, age, ethnicity, education level, occupational type, marital status, chronic disease status, surgical history, use of mobility aids, children, residence, monthly income, hobbies and interests, and attitudes toward community-based elderly care environments.

2.3.2. Physical Activity Scale for the Elderly (PASE)

The Physical Activity Scale for the Elderly (PASE) was developed by Washburn *et al*. using the Physical Activity Questionnaire (PAQ) as a reference and was revised for the elderly population aged 60 years and above. The scale is a self-reported survey of time and types of activities in the past seven days, divided into three parts: leisure activities, household chores, and occupation-related activities. It serves as a criterion for assessing the level of daily physical activity of the elderly [3]. In 2002, Taiwanese scholar Chia-Yi Wu translated the original scale and tested it on domestic samples, proving its reliability and validity. The PASE includes ten questions: the first five questions (leisure activities) are rated on a four-point scale, including the number of days engaged per week (0 = never, 1–2 days = infrequent, 3–4 days = sometimes, 5–7 days = frequently) and the number of hours engaged per day (1 = less than one hour, 2 = one to two hours, 3 = two to four hours, 4 = more than four hours). The last four questions (domestic) and the remaining question (functional) require yes/no responses. Scores are weighted according to frequency and item categories: frequency of activity (days of the week) × duration of activity (hours per day) ÷ 7 days × weighting of each activity, with a total score range of 0–360. A physical activity score > 180 (50% of the total score of 360) is considered high physical activity [4].

2.4. Data collection

Two forms of questionnaires were used: paper and online. For paper questionnaires: (1) Postal method: questionnaires were printed and sent to respondents by post, then recovered for data analysis; suitable for literate elderly. (2) On-site method: questionnaires were filled out directly by the elderly in community parks and other places, and collected on-site by investigators. For online questionnaires: the telephone interview method was used, where interviewers asked specific questions and recorded respondents' answers. The choice of data collection method considered the elderly's cultural level, expression, and comprehension abilities to ensure the questionnaire design and survey methodology were scientific and reliable, avoiding misleading and subjective questionnaires.

2.5. Statistical analyses

The SPSS 27.0 software package was used for statistical analysis. Data were expressed as either [*n* (%)] or mean ± standard deviation (SD) and analyzed using either the *t* or chi-squared test. A *P* value of less than 0.05 indicated a statistically significant difference.

3. Results

3.1. General information on survey respondents

There were 136 (51.3%) males and 129 (48.7%) females; 148 (55.8%) were aged 60 to 69, 240 (90.9%) were Han Chinese, and 122 (46.0%) had only primary school education. Other specific data are shown in **Table 1**.

Table 1. General information on survey respondents (n = 265)

Group	Subgroups	Number (n)	Composition ratio (%)
Gender	Male	136	51.3
	Female	129	48.7
Age	60–69	148	55.8
	70–79	82	30.9
	≥ 80	35	13.2
Ethnicity	Han Chinese	240	90.6
	Minority	25	9.4
Educational attainment	Primary school and below	122	46.0
	Junior high school	95	35.8
	High school or junior college	35	13.2
	College and above	13	4.9
Type of occupation	Intellectual	60	22.6
	Physical	147	55.5
	Combination of intellectual and physical	58	21.9
Marital status	Married	226	85.3
	Single / Divorced	39	14.7
Number of chronic diseases	None	62	23.4
	1	103	38.9
	2	59	22.3
	≥ 3	41	15.5
Surgical history	None	182	68.7
	Once or more	83	31.3
Use of mobility aids	Yes	77	29.1
	No	188	70.9
Number of children	None	16	6
	1	57	21.5
	2	100	37.7
	≥ 3	92	34.7
Residence	Living alone	31	11.7
	With spouse	158	59.6
	With children	65	24.5
	With spouse and children	11	4.2

Table 1 (Continued)

Group	Subgroups	Number (*n*)	Composition ratio (%)
Monthly salary	< 3000	154	58.1
	3000–6000	74	27.9
	> 6000	37	14.0
Hobbies and interests	None	75	28.3
	1	69	26.0
	≥ 2	121	45.7
Attitudes towards aging in the community	Unsatisfactory	11	4.2
	Average	132	49.8
	Satisfactory	122	46.0

3.2. Physical activity levels of older people

The PASE score did not conform to a normal distribution and was thus described using the median. The P50 of this scale was 220.425, indicating a high level of physical activity. The highest score in this survey was 359.71. Further analysis showed no significant difference in the physical activity levels of elderly people of different genders ($P > 0.05$). See **Table 2**.

Table 2. Comparison of PASE scores of older adults by gender

Items	P5	P50	P95	Minimum value	Maximum value
Male	18.57	202.71	357.86	0	359.71
Female	25.94	238.14	356.68	0	349
Total	22.26	220.43	357.27	133.43	359.71

4. Discussion

4.1. Physical activity levels of the elderly

Physical activity refers to any activity that increases the body's energy expenditure at the basal metabolic level. Physical activity and health levels are closely related; older people with high activity levels tend to have better health than those with low activity levels. There is no gender difference in the amount of physical activity in this group of older people, which is consistent with the results of some domestic studies [5] but differs from the conclusions of foreign studies. This discrepancy may be related to the different samples and survey instruments selected.

4.2. Analysis of impact factors

4.2.1. Physical factors

During the aging process, the organs of the elderly undergo progressive decline, manifested by weakened cardiopulmonary function, skeletal muscle joint degeneration, reduced balance and flexibility, and decreased visual and auditory sensation. Especially after the age of 50, lower limb muscle strength and muscle mass significantly reduce, restricting mobility and the ability to perform activities of daily living [6]. Pathological status also affects the level of physical activity of the elderly in the community. Elderly people with poor vascular elasticity generally have a low level of physical activity and most have atherosclerosis, which is the pathological basis of various cardiovascular diseases [7]. It is recommended to cultivate the habit of regular exercise among the elderly in

the community to improve their pathological status, physical activity levels, and overall health.

4.2.2. Lack of health knowledge

It was found that older people in many communities have little knowledge of the impact of physical activity on health, and some even believe that physical activity is unnecessary. These negative thoughts and attitudes affect the willingness and motivation of older adults to be physically active, thus reducing their physical activity levels [8]. The level of health knowledge is related to the level of literacy. Studies have shown that as the level of literacy increases, the incidence of physical inactivity decreases [9]. A high level of literacy is a protective factor against physical inactivity among community-dwelling older adults. This may be because a higher level of literacy leads to a better understanding of the importance of physical activity, thereby increasing physical activity levels. Therefore, it is important to provide relevant health education programs to enhance physical activity-related health education so that the elderly understand the benefits of physical activity and thus increase their physical activity levels.

4.2.3. Community factors

The community is the main place where older people live, and its venues and facilities are the material basis for physical activity, which largely influences the level of physical activity among older people. The survey found that exercise equipment and facilities are very limited, which further reduces the enthusiasm and opportunities for physical activity among the elderly. It is recommended that the community improve the venues and facilities for physical exercise and provide professional exercise instructors when conditions permit.

4.2.4. Peer support

Social support from peers has been found to be a strong motivator for older people to be physically active. Olsen *et al*. found that older people in the community preferred group activities to exercising alone and that they preferred to do activities with people in their own situation, viewing each other as role models and benefiting from each other's achievements [10]. This is consistent with Dobanra's view that, instead of experience and role modeling, it is also a source of self-efficacy. The social support given by peers in group activities is associated with more positive responses and more enjoyable experiences for older people.

5. Conclusion

Research has shown that physical activity is an effective way to maintain and promote health. It is low-cost, low-tech, and can be implemented by almost everyone, making it essential for maintaining physical health and improving the quality of life [11]. The results of this study provide a reference direction for developing appropriate interventions for older adults to increase their level of physical activity and improve their physical functioning and physical and mental health.

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Disclosure statement

The authors declare no conflict of interest.

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