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The Analysis of Health Literacy Differences Among Junior High School Students in The Plateau Areas of Haidong City and Yushu Tibetan Autonomous Prefecture in Qinghai Province

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Abstract: Health literacy is the foundation of physical education and one of the most important core literacies. Physical health literacy refers to the knowledge and skills that students learn and master about physical health, as well as their awareness and concern for their own physical condition. The survey subjects were junior high school students in Haidong City, Qinghai Province and Yushu Tibetan Autonomous Prefecture in Qinghai Province, and the overall health literacy and health literacy of the two regions were compared through questionnaire survey method and statistical analysis method, and it was concluded that there were significant differences in the overall health literacy between Haidong City and Yushu Tibetan Autonomous Prefecture in Qinghai Province, among which there was no significant difference in personal health information ability and government social support, and there were significant differences in health information characteristics, personal health knowledge and personal characteristics. In addition, the average score of junior high school students in Yushu Tibetan Autonomous Prefecture is higher than that of Haidong City, due to the differences in geographical location, development and related policies, it is hoped that the health literacy of junior high school students in Haidong City will be improved by increasing publicity, organizing learning, participating in practical sports activities, and providing relevant policy support.

Keywords: Plateau Region; Core Literacy; Physical Health Literacy; Junior High School Students

1 INTRODUCTION

Health literacy refers to an individual's ability to access and understand health information, and to use that information to maintain and promote their own health [1]. The evaluation index of citizens' health literacy is included in the national health development plan, as an evaluation index that comprehensively reflects the development of the national health industry. Health literacy includes three aspects: basic knowledge and concepts, healthy lifestyles and behaviors, and basic skills [2]. Health literacy is an important determinant of health and an important indicator to measure health quality, which directly affects people's life and quality of life, and then affects the level of social productivity and the development of the entire economy and society [3]. The Bangkok Charter for Global Health Promotion, adopted by the Sixth World Conference on Health Promotion in 2005, regards improving people's health literacy as an important action and goal of health promotion, and the U.S. government has also listed health literacy as one of the important goals in the health policy white paper "Healthy America 2010" [4-5].

There are several definitions of health literacy. While there are significant differences in emphasis, almost all definitions share the same core elements that describe the literacy and numeracy skills that enable individuals to acquire, understand, evaluate

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and use information to make decisions and take actions that have an impact on health. Over the past decade, practitioners and researchers have gained a better understanding of the implications of the context in which people need to use their health literacy skills and competencies [6]. "Residents' health literacy level" is a comprehensive evaluation index that reflects the level of economic and social development and the health level of the people [7]. The Healthy China Action Plan (2019-2030) proposes that by 2030, the health literacy level of residents in China should not be less than 30%[8].

In the 90s of the 20th century, the academic community came up with various definitions of "health literacy". At present, there is a gradual consensus on the concept of health literacy [9]. This concept has also been introduced by Chinese scholars and has been recognized by health authorities.

Health literacy is an important determinant of health, a comprehensive reflection of the level of economic and social development, and is influenced and constrained by political, economic, cultural, and educational factors [10]. The direct purpose of improving public health literacy is to prevent healthy people from getting sick, get sick less and get sick later, so that patients have better self-management ability for the diseases they suffer, prevent the deterioration of diseases, and reduce disability and death [11], and the ultimate goal is to improve the health level and quality of life of the whole people [12].

Health literacy is not only related to people's health level and quality of life, but also highly related to the level of social and economic development, so the country should pay attention to the health literacy of the whole people in the process of development, improve the importance of health literacy in the hearts of the whole people, and promote the high-quality development of the country. Taking Haidong City and Yushu Tibetan Autonomous Prefecture in Qinghai Province as examples, this paper compares the health literacy status of junior high school students in different regions of the Qinghai-Tibet Plateau, analyzes the reasons for the differences in health literacy in the two regions, and proposes relevant countermeasures to improve health literacy.

2 Research Objects and Methods

2.1 Subjects

The subjects of the study were junior high school students in Haidong City, Qinghai Province and Yushu Tibetan Autonomous Prefecture, Qinghai Province.

2.2 Research Methodology

2.2.1 Sampling Methods

A total of 464 junior high school students from Haidong City, Qinghai Province and Yushu Tibetan Autonomous Prefecture of Qinghai Province were randomly selected.

2.2.2 Questionnaire Method

（1）. Questionnaire design

A standardized questionnaire was used to carry out the survey, and the questionnaire was developed on the basis of the health literacy evaluation index system. It includes 5 items: health information characteristics, personal health information capabilities, personal health knowledge, personal characteristics, and government and social support.

Among them, health information characteristics (2 items); Personal health information ability includes 9 items: general information ability (6 questions), information acquisition ability (7 questions), information evaluation ability (6 questions), information decision-making ability (10 questions), information communication ability (11 questions), information application ability (20 questions), interpersonal communication ability (8 questions), self-regulation ability (12 questions), and goal achievement ability (7 questions). Personal health knowledge includes 5 items: disease knowledge (5 items), health-related knowledge (8 items), public health knowledge (4 items), health system knowledge (13 items), and scientific knowledge and skills (5 items). Personal characteristics include 2 items including personal characteristics (6 items) and personal attitudes (18 items); Government social support includes 3 items: medical service provider support (8 items), social support (5 items), and other support (2 items).

（2）. Validity test of questionnaires

After the questionnaire was designed, in order to objectively and effectively reflect the research questions in the questionnaire, 7 experts were interviewed to test the validity of the content and structure of the questionnaire.

Table 1 Statistical Table of Experts for Questionnaire Validity Test (N=7)

Job Title	Professor	Associate Professor
Number	4	3

Table 2 Expert Evaluation Results of Questionnaire Validity (N=7)

	Very effective	Relatively effective	Generally effective	Not very effective	void
Number	3	4	0	0	0
Percentage (%)	42.9	57.1	0	0	0

（3）. Reliability test of questionnaires

In order to ensure the authenticity and validity of the questionnaire, the reliability of the questionnaire was

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scientifically tested. In order to test the reliability of the questionnaire, this study used the retest method, 100 junior high school students in Haidong City and 45 junior high school students in Yushu Tibetan Autonomous Prefecture were randomly selected 15 days after the first questionnaire was issued, and these survey subjects were retested, and then the correlation test of the data of the two surveys was carried out by SPSS statistical software, and R=0.837 proved that the questionnaire survey data were reliable and met the research requirements.

2.2.3 *Scoring Methodology*

Questionnaire scoring method, multiple-choice questions, "strongly agree" is worth 5 points, "agree" is worth 4 points, "general" is worth 3 points, "disagree" is worth 2 points, "strongly disagree" is worth 1 point, and missing a selection is worth 0 points; Multiple-choice questions were scored using SPSS statistical software.

2.2.4 *Statistical Analysis*

SPSS27.0 statistical software was used for data collation and statistical analysis.

3 Results

3.1 *Basic Information*

In this survey, a total of 464 junior high school students were enrolled in Haidong City, Qinghai Province and Yushu Tibetan Autonomous Prefecture, Qinghai Province. Among them, 236 were males, accounting for 50.9%, and 228 were females, accounting for 49.1%; 112 in the first year of junior high school, accounting for 24.1%, 70 in the second year of junior high school, accounting for 15.1%, and 282 in the third year of junior high school, accounting for 60.8%; 374 people from Haidong City, accounting for 80.6%, and 90 people from Yushu Tibetan Autonomous Prefecture, accounting for 19.4%.

3.2 *Results*

3.2.1 *Comparison Of Health Information Characteristics Between Haidong City, Qinghai Province And Yushu Tibetan Autonomous Prefecture, Qinghai Province*

The results showed that the P<0.05 of the health information received in Haidong City of Qinghai Province and Yushu Tibetan Autonomous Prefecture of Qinghai Province showed a significant difference, and the average score of Yushu Tibetan Autonomous Prefecture was higher than that of Haidong City. The P>0.05 of the received information promotes or harms health, and there is no significant difference between the two regions (Table 3).

Table 3 Comparison Of Health Information Characteristics Between Haidong City In Qinghai Province And Yushu Tibetan Autonomous Prefecture In Qinghai Province

Unit: minutes

		Current residence in the province or city	M±SD	P-value
Health information characteristics	Receipt of health information	Haidong	2.14 ± 0.98	0.017
		Yushu	2.31 ± 0.80	
	Receive information Promotes or endangers health	Haidong	13.82 ± 2.10	0.136
		Yushu	14.41 ± 2.16	

3.2.2 *Comparison Of Personal Health Information Capabilities In Haidong City, Qinghai Province And Yushu Tibetan Autonomous Prefecture, Qinghai Province*

The results showed that the P<0.05 of information acquisition ability, information application ability and goal achievement ability were significantly different, and the average score of Yushu Tibetan Autonomous Prefecture was higher than that of Haidong City. There was no significant difference between the two regions in terms of information evaluation ability, information decision-making ability, information communication ability, general information ability, interpersonal communication ability, and self-regulation ability > 0.05 (Table 4).

Table 4 Comparison Of Personal Health Information Capacity Between Haidong City In Qinghai Province And Yushu Tibetan Autonomous Prefecture In Qinghai Province

Unit: minutes

		Current residence in the province or city	M±SD	P-value
Personal health	Ability to access information	Haidong	25.71±3.21	0.009
		Yushu	26.72±3.59	
		Haidong	21.94±3.71	

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Information capabilities	Ability to evaluate information	Yushu	22.58±3.33	0.114
	Information decision-making capabilities	Haidong	36.40±5.03	0.064
		Yushu	37.49±4.74	
	Ability to communicate information	Haidong	41.83±5.92	0.113
		Yushu	40.91±4.67	
	General ability to inform	Haidong	20.94±3.12	0.495
		Yushu	21.82±3.64	
	Ability to use information	Haidong	75.27±9.52	0.045
		Yushu	76.09±10.44	
	Interpersonal skills	Haidong	30.93±4.08	0.524
		Yushu	30.60±4.43	
	Ability to self-regulate	Haidong	41.40±6.03	0.069
		Yushu	42.80±8.41	
	Goal Achievement Skills	Haidong	25.40±4.45	0.026
		Yushu	26.54±4.01	

3.2.3 *Comparison Of Personal Health Knowledge Differences Between Haidong City, Qinghai Province And Yushu Tibetan Autonomous Prefecture, Qinghai Province*

The results showed that the P<0.05 of health-related knowledge and health system knowledge was significantly different, and the average score of Yushu Tibetan Autonomous Prefecture was higher than that of Haidong City. Public health knowledge P>0.05, no significant difference; The P<0.001 of disease knowledge and scientific knowledge and skills showed a significant difference, and the average score of Yushu Tibetan Autonomous Prefecture was higher than that of Haidong City (Table 5).

Table 5 Comparison Of Individual Health Knowledge In Haidong City, Qinghai Province And Yushu Tibetan Autonomous Prefecture, Qinghai Province

Unit: minutes

		Current residence in the province or city	M±SD	P-value
Personal health knowledge	Disease knowledge	Haidong	17.85±3.02	<0.001
		Yushu	19.52±4.14	
	Health-related knowledge	Haidong	29.32±4.20	0.01
		Yushu	30.58±3.89	
	Public health knowledge	Haidong	14.70±2.34	0.112
		Yushu	15.13±2.35	
	Health systems knowledge	Haidong	46.39±8.09	0.004
		Yushu	49.08±6.71	
	Scientific knowledge and skills	Haidong	16.36±3.96	<0.001
		Yushu	18.34±3.48	

3.2.4 *Comparison Of Individual Characteristics Between Haidong City, Qinghai Province And Yushu Tibetan Autonomous Prefecture, Qinghai Province*

The results showed that the personal attitude P<0.001 was significantly different, and the average score of Yushu Tibetan Autonomous Prefecture was higher than that of Haidong City. The P>0.05 of its own characteristics showed no significant difference (Table 6).

Table 6 Comparison Of Individual Characteristics Between Haidong City In Qinghai Province And Yushu Tibetan Autonomous Prefecture In Qinghai Province

Unit: minutes

		Current residence in the province or city	M±SD	P-value
Personal characteristics	own characteristics	Haidong	67.14±10.29	0.111
		Yushu	69.03±8.87	

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	Personal attitude	Haidong	17.83±3.93	<0.001
		Yushu	19.30±2.82	

3.2.5 Comparison Of Differences In Government Social Support Between Haidong City, Qinghai Province And Yushu Tibetan Autonomous Prefecture, Qinghai Province

The results showed that the social support P<0.05 was significantly different, and the average score of Yushu Tibetan Autonomous Prefecture was higher than that of Haidong City. Provider support, other support P>0.05, no significant difference (Table 7).

Table 7 Comparison Of Differences In Government Social Support Between Haidong City In Qinghai Province And Yushu Tibetan Autonomous Prefecture In Qinghai Province

Unit: minutes

		Current residence in the province or city	M±SD	P-value
Government social support	Health care providers In the tank	Haidong	30.34±6.37	0.663
		Yushu	30.67±6.2	
	Social support	Haidong	16.80±2.50	0.003
		Yushu	17.78±3.72	
	Other support	Haidong	6.75±2.21	0.054
		Yushu	7.30±1.64	

3.2.6 Comparison Of Health Literacy Differences Between Haidong City, Qinghai Province And Yushu Tibetan Autonomous Prefecture, Qinghai Province

The results showed that the health information characteristics were P<0.05, showing a significant difference, and the average score of Yushu Tibetan Autonomous Prefecture was higher than that of Haidong City. P>0.05 in personal health information ability, no significant difference; The P<0.001 of personal health knowledge showed a significant difference, and the average score of Yushu Tibetan Autonomous Prefecture was higher than that of Haidong City. The P<0.05 of personal characteristics showed significant differences, and the average score of Yushu Tibetan Autonomous Prefecture was higher than that of Haidong City. P>0.05 in government and social support, with no significant difference; The overall health literacy P<0.05 showed a significant difference, and the average score of Yushu Tibetan Autonomous Prefecture was higher than that of Haidong City (Table 8).

Table 8 Comparison Of Health Literacy Differences Between Haidong City In Qinghai Province And Yushu Tibetan Autonomous Prefecture In Qinghai Province

Unit: minutes

		Current residence in the province or city	M±SD	P-value
Five health literacy	Health information characteristics	Haidong	13.81±2.10	0.017
		Yushu	14.41±2.16	
	Personal health information capacities	Haidong	320.75±34.49	0.296
		Yushu	324.73±35.94	
	Personal health knowledge	Haidong	124.54±17.32	<0.001
		Yushu	132.66±14.94	
	Personal characteristics	Haidong	84.98±12.32	0.021
		Yushu	88.27±10.71	
	Government social support	Haidong	54.06±8.63	0.081
		Yushu	56.09±8.98	
Overall health literacy		Haidong	599.36±60.37	0.045
		Yushu	615.78±10.71	

4 Discussion

The results of this health literacy survey show that there are significant differences in the overall health literacy of junior high school students in Haidong City, Qinghai Province and Yushu Tibetan Autonomous Prefecture, Qinghai Province. Among them, there is no obvious difference in the ability of personal health information and government social support, because the government distributes resources for students'

physical health literacy education evenly, and the knowledge of personal health information received by students is not much different, and the current network is developed, all kinds of information can be obtained through the network, and the government and society support for the two regions is not much different, but in the two major items of information access ability,There are significant differences in the four sub-items of information application ability, goal achievement skills and social support, which may be due to the damage caused by the geological disaster in Yushu Tibetan Autonomous Prefecture that the region receives more social assistance, and the junior high school students in Yushu Tibetan Autonomous Prefecture do better than the junior high school students in Haidong City in terms of information acquisition ability and information movement ability.

However, there were significant differences in health information characteristics, personal health knowledge and personal characteristics. The main reasons for the three differences in health literacy of junior high school students in Haidong City of Qinghai Province and Yushu Tibetan Autonomous Prefecture of Qinghai Province are related to the following factors: First, Haidong City is close to Xining City, the capital of Qinghai Province, and Haidong City has a better source of health knowledge than Yushu Tibetan Autonomous Prefecture, and can understand health knowledge faster and more effectively, and various resources are better than those of Yushu Tibetan Autonomous Prefecture, which makes students in Haidong City not pay attention to the reserve of personal health knowledge. Secondly, Yushu Tibetan Autonomous Prefecture is located in a remote area, and Haidong City is close to the provincial capital Xining City, so the allocation of medical practitioners or medical and health equipment and other health resources in Yushu Tibetan Autonomous Prefecture is obviously not as good as that of Haidong City. Third, the state has provided relevant support to Yushu Tibetan Autonomous Prefecture. The above three points make junior high school students in Yushu Tibetan Autonomous Prefecture more sensitive to personal health knowledge, and have better knowledge about personal health care than Haidong City. Finally, although Haidong City and Yushu Tibetan Autonomous Prefecture both belong to Qinghai Province, they are far apart, Haidong City is more than 2,000 meters above sea level compared to Yushu Tibetan Autonomous Prefecture more than 4,000 meters above sea level, the geographical environment is quite different, and the different living environments have long been different personal characteristics of students in the two places.

5 CONCLUSION

Through the analysis of this paper, it is recognized that there are significant differences in the overall health literacy of junior high school students in Haidong City and Yushu Tibetan Autonomous Prefecture in Qinghai Province, and there is no significant difference in personal health information ability and government social support, but there are obvious differences in health information characteristics, personal health knowledge and personal characteristics between the two regions, which is caused by the geographical location, economic development level and national support of the two regions. In the future, it is hoped that by strengthening the publicity of health literacy in Haidong City, organizing students to participate in physical exercise and health literacy surveys, so that students can understand the importance of health literacy, optimize the access to health literacy-related knowledge, streamline health literacy-related content, enable students to directly and effectively learn the knowledge of health literacy, and provide corresponding policy support to improve the health literacy of junior high school students in Haidong City. Provide more opportunities to participate in physical activities at the school or social level, so that students can understand and learn physical health literacy in physical activities, realize the importance of physical health literacy, and increase students' initiative in learning and exploring physical health literacy, so as to improve students' physical health literacy more effectively, help students master physical education knowledge and skills, learn to exercise independently, gradually develop the habit of physical exercise, enhance physical fitness, lay a good physical foundation, and form the concept of lifelong physical education.

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