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Research on Health Literacy of Vocational College Students

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Abstract: *This study adopts the Resident Health Literacy Monitoring Framework issued by the National Health Commission as a basis, targeting the group characteristics of vocational college students. A total of 412 enrolled students from three vocational colleges in Qingdao, Shandong Province, were surveyed through questionnaires and semi-structured interviews. The results indicate that the overall health literacy attainment rate among the surveyed vocational college students is 28.4%, slightly below the national average health literacy level of residents during the same period. Based on the findings, interventions are proposed at three levels: optimizing the curriculum system, constructing healthy campus scenarios, and promoting school-enterprise coordinated health guidance, to provide a reference for cultivating high-quality skilled talents.*

Keywords: *vocational colleges; college students; health literacy*

1. Background of Health Literacy Research among Vocational College Students

Health literacy refers to an individual's ability to obtain, understand, and process basic health information and services, and to use this information and these services to make correct health decisions to maintain and promote their own health. It is a core indicator for measuring a nation's public health development level and the overall quality of its residents. With the ongoing advancement of the Healthy China Initiative, the enhancement of health literacy has gradually shifted from broad-based work aimed at all residents to precise interventions focusing on key groups such as adolescents and occupational populations.

Vocational college students are at a critical transition stage from adolescence to adulthood, which is a prime period for the formation of personal health behaviors and lifestyles. Their health literacy not only encompasses general health knowledge and skills needed by ordinary citizens but also requires additional specialized health protection abilities adapted to their future occupational roles. However, vocational colleges typically emphasize professional skill training within their talent cultivation systems, with relatively insufficient development of students' health literacy. Some students exhibit irregular routines, inadequate psychological and emotional regulation capabilities, and a lack of occupational protection knowledge.

Therefore, conducting a systematic investigation into the health literacy status of vocational college students, accurately identifying their weaknesses and core influencing factors, and constructing intervention pathways tailored to their group characteristics hold great practical significance.

2. Evaluation Elements of Health Literacy among Vocational College Students

Since the concept of health literacy was first proposed in the 1970s, its connotation has evolved from the initial "basic reading and writing ability to understand medical prescriptions and health information" to a comprehensive ability system covering knowledge, behavior, skills, and situational adaptation. Since 2008, China has officially launched national resident health literacy monitoring, forming a standardized evaluation framework that includes three core dimensions: health concepts and basic knowledge, healthy lifestyles and behaviors, and health skills. This framework has been widely applied and validated across

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various population groups nationwide [1].

This study builds on the national general three-dimensional health literacy evaluation framework and specially adds the "Occupational Scenario Specific Health Literacy" dimension, ultimately forming a four-dimensional research framework adapted to vocational college students: The first dimension is health concepts and basic knowledge, encompassing recognition levels of general health knowledge such as physiological health, disease prevention, safety first aid, and medical policies; the second dimension is healthy lifestyles and behaviors, covering the practice of daily health behaviors such as regular routines, balanced diet, physical exercise, and prevention of smoking, alcohol, and addictive behaviors; the third dimension is health skills, including practical abilities such as common injury emergency handling, basic health indicator monitoring, health information discrimination, and psychological and emotional regulation; the fourth dimension is occupational scenario specific health literacy, focusing on students' awareness of occupational hazards related to their future positions, mastery of protective skills, and understanding of occupational health rights.

3. Participants and Methods

This study used stratified cluster sampling to select second- and third-year students from three vocational colleges in Qingdao, Shandong Province, with different training orientations. The sample covered 11 majors across three categories: equipment manufacturing, medical care, and commerce and services. A total of 450 combined electronic and paper questionnaires were distributed; after excluding invalid questionnaires with totally uniform responses or missing key information, 412 valid questionnaires were recovered, with an effective recovery rate of 91.6%.

During the survey, semi-structured interviews were simultaneously conducted with 24 students from different majors to supplement qualitative research data, aiming to understand the genuine motivations and practical obstacles behind students' health behaviors. All collected data were input and cleaned using statistical analysis software. One-way ANOVA was used to compare health literacy score differences among students with different demographic characteristics, followed by binary logistic regression models to identify core independent factors affecting vocational college students' health literacy levels, ensuring the scientific rigor and accuracy of the study results.

4. Results and Analysis

4.1 Overall Level of Health Literacy

The survey results show that among the 412 vocational college students surveyed, 117 were determined to have health literacy, with an overall attainment rate of 28.4%, slightly below the national average of 33.69% during the same period [2], and also lower than the average health literacy level reported for regular university students in domestic studies. The four dimension-specific scores demonstrate significant disparities: the health concepts and basic knowledge dimension performed best, with an average correct rate of 72.3%. Over 70% of students could accurately identify common infectious disease transmission routes, grasp basic safety and first aid knowledge, and meet basic cognition standards for common daily health issues. The healthy lifestyles and behaviors dimension scored next highest, with a behavior attainment rate of 58.7%. Outstanding problems were concentrated in routine and diet: less than 30% of students could guarantee 7-8 hours of regular sleep daily; over 60% stayed up late using phones or reversed day-night cycles on weekends; nearly half of students relied mainly on takeout, lacking balanced diet diversity; intake of sugary beverages was significantly high; some students had no daily habit of consuming fresh fruits and vegetables.

The health skills dimension was comparatively weak, with a core skill acquisition rate of only 47.2%. More than half of the students could not accurately measure basic health indicators such as blood pressure and heart rate, lacked ability to discern numerous false health rumors circulating online, and fewer than 35% had systematically learned regulation methods for common negative emotions like anxiety and depression. When facing psychological distress, they tended to endure it silently rather than actively seeking help from school counselors or professionals. The occupational scenario-specific health literacy dimension was the poorest-performing among all, with only 19.2% overall attainment. More than 80% of students lacked understanding of long-term chronic occupational hazards related to their future jobs. Many students only knew to avoid acute mechanical injuries during practical training but were completely unaware of chronic health risks such as lower limb varicose veins from prolonged standing,

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cervical and shoulder syndrome caused by long-term desk work, or lung damage from exposure to industrial dust. They were also ignorant of the basic occupational health rights granted to workers under the Occupational Disease Prevention Law, revealing a substantial gap in awareness of occupational health protection.

4.2 Differences in Health Literacy among Different Groups

One-way analysis results show significant differences in health literacy levels among student groups with different characteristics: by grade, third-year students scored significantly higher than first- and second-year students, mainly because higher-grade students had more exposure to professional internships and employment guidance, raising their attention to health issues; by major, medical and nursing students had the highest health literacy attainment rate at 42.6%, equipment manufacturing students second, and commerce and service students the lowest at 21.7%. Differences in the density of health-related courses offered were a core reason for this result; by daily behavior, students who exercised at least three times a week for half an hour each time had a health literacy attainment rate 2.1 times higher than those who rarely exercised. Students with long-term poor habits such as chronic late nights and excessive sugary beverage consumption generally scored significantly lower in health literacy.

4.3 Regression Analysis of Health Literacy Influencing Factors

After including statistically significant variables from one-way analysis into a binary logistic regression model, three core independent factors influencing vocational college students' health literacy levels were identified: First, whether students had received systematic health literacy-related course education; those who had completed full compulsory health courses were 2.7 times more likely to meet competent health literacy standards than those without such education, highlighting the school's curriculum supply as the most critical factor; second, family health atmosphere; families where parents practice good health habits and frequently discuss health knowledge with their children significantly boosted students' likelihood to meet health literacy standards, emphasizing the irreplaceable role of long-term familial influence; third, daily duration of physical exercise; students maintaining regular exercise habits not only had better physical fitness but also showed higher recognition of healthy lifestyles and greater willingness to actively learn various health knowledge.

5. Discussion and Intervention Strategies

The survey results indicate that vocational college students' overall health literacy is currently at a moderate level. While there is a solid foundation in general health knowledge, there remain notable gaps in transforming knowledge into healthy behaviors, mastery of health skills, and especially in occupational scenario-specific health literacy. This situation is related both to the traditional "skill-focused, health-neglected" cultivation orientation in vocational colleges and to behavioral habit characteristics and adverse online health information impacts among youth groups. To systematically improve vocational college students' health literacy, this study proposes intervention strategies at three levels:

First, comprehensively optimize the health literacy curriculum system in vocational colleges, breaking the limitations of fragmented traditional health education. Health literacy content should be extracted from scattered courses like physical education, safety education, and employment guidance, and integrated into a systematic compulsory course covering three modules: general health knowledge, daily health skills, and occupational-specific protection. Instruction should not only cover fundamental physiological health and disease prevention knowledge but also emphasize three core health literacy aspects vital to college students: scientific routines, reasonable diet, and emotional management [3]. Meanwhile, specific occupational health protection content tailored to different majors' job characteristics should be offered, enabling students to master all-context health protection skills before internships, thus reducing future occupational health risks at the source.

Second, build comprehensive supportive campus health scenarios to promote deep transformation from health knowledge to health behaviors. Vocational colleges can create a strong health-supportive campus atmosphere through constructing smoke-free environments, promoting healthy cafeterias, opening all-day sports fitness facilities, and regularly holding health science popularization activities [4]. These measures lower practical barriers to adopting healthy lifestyles. Moreover, using popular short videos, campus clubs, and other student-favored formats to disseminate authoritative health information can help students build the ability to discern false online health rumors and guide them to gradually

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convert classroom-acquired health knowledge into long-term stable daily habits.

Third, deepen the school-enterprise coordinated health guidance mechanism to connect campus and workplace health literacy continuation chains. In school-enterprise cooperative talent cultivation, enterprises can open their mature occupational health management resources to schools, organize students to visit enterprise occupational health experience centers, and intuitively understand health hazard prevention processes for different positions. This shifts students' occupational health cognition from abstract textbook knowledge to tangible practical experience, helping them maintain good health habits after entering the workforce and continuously safeguard their health status [5].

6. Conclusion

This empirical study finds that vocational college students' health literacy displays significant imbalance across different dimensions, with occupational scenario-specific health literacy being the most prominent shortcoming. Curriculum education, family atmosphere, and physical exercise are the three core factors influencing their health literacy levels. Coordinated efforts by institutions, families, and enterprises to systematically improve the health literacy development system can help students establish health literacy that supports their entire career development and ultimately achieve a mutual win for personal growth and high-quality industrial development.

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