

RESEARCH PROGRESS AND THINKING ON HEALTH LITERACY OF INFECTIOUS DISEASES AT HOME AND ABROAD

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Abstract: This paper expounds the concept and research significance of infectious disease health literacy, and summarizes the research progress of infectious disease health literacy at home and abroad from the aspects of infectious disease health literacy evaluation tools, levels, influencing factors and intervention measures, in order to improve the level of infectious disease health literacy of the whole people. Provide reference for the prevention and control of infectious diseases.

Keywords: Health literacy; Infectious diseases; Assessment tools; Influencing factors; Intervention measures; Review

1 THE CONCEPT AND RESEARCH SIGNIFICANCE OF INFECTIOUS DISEASE HEALTH LITERACY

With the continuous deepening of economic and trade globalization, population mobility and international exchanges have become increasingly frequent, not only severe acute respiratory syndrome (SARS), highly pathogenic avian influenza, novel coronavirus pneumonia (COVID-19) and other emerging infectious diseases continue to Infectious diseases, such as tuberculosis and syphilis, which were once under control, have resurged and wreaked havoc again, threatening human health and national security more and more. The World Health Organization pointed out: In 2019, infectious diseases accounted for 3 of the top 10 causes of death in the world, and the number of people who died from infectious diseases accounted for 25% of the total number of deaths each year [1]. China is also a high-incidence area of infectious diseases. In 2020, a total of 5.806 million cases of notifiable infectious diseases were reported and 26,374 people died [2]. Studies have shown that the spread of the epidemic is closely related to the public's low ability to prevent and control infectious diseases. The high number of cases reminds us that if we do not pay attention to the prevention and control of infectious diseases, human beings will face the threat of increasing infectious diseases in the future. The etiology is complex, the onset is hidden, and the trend of globalization [3]. This paper summarizes the research progress of health literacy of infectious diseases at home and abroad from the aspects of evaluation tools, levels, influencing factors and intervention measures of infectious diseases health literacy at home and abroad, in order to provide a theory for improving the health literacy of infectious diseases and carrying out targeted prevention and control of infectious diseases basis and countermeasures.

Since Simonds put forward the concept of "health literacy" for the first time in 1974, after decades of development, it is currently recognized as the definition of health literacy by the World Health Organization: Health literacy refers to the individual's acquisition, understanding and processing of health information, and its application. The ability to use health information to make correct judgments and promote one's own health. Infectious disease health literacy refers to the ability of individuals to prevent and manage infectious diseases in order to promote their own health and reduce the occurrence of infectious diseases [4]. Health literacy is an important part of health promotion and is closely related to health behaviors. Improving the health literacy of the public on infectious diseases can significantly improve their health protection behavior, and is one of the most economical and effective ways to prevent and control infectious diseases [5]. Residents with insufficient health literacy for infectious diseases have a lack of awareness of active epidemic prevention [6] and poor compliance with disease prevention, treatment, and management [7], which has brought a huge negative impact on the effective prevention and control of infectious diseases. Therefore, the "Healthy China 2030" Planning Outline emphasizes that improving health literacy should be a priority task for improving the health of the whole people.

2 MEASURING TOOLS FOR INFECTIOUS DISEASE HEALTH LITERACY

2.1 Universal Health Literacy Assessment Tools for Infectious Diseases

In the early days abroad, universal health literacy assessment tools were often used to measure the health literacy of infectious disease patients. For example, Rebeiro et al. [8] used the Brief Health Literacy Screening Form (BHLS) to measure the health literacy level of AIDS patients. Dunn-Navara et al [9] used the Short Test of Functional Health Literacy in Adults (S-TOFHLA) to assess the reading and numeracy skills of parents of children with upper respiratory tract infection.

In China, the relevant test questions on the prevention and control of infectious diseases in the national residents' health literacy monitoring questionnaire are mostly used to evaluate the residents' literacy on the prevention and control of infectious diseases [10]. In 2016, Tian et al [11] compiled the Infectious Disease Health Literacy Scale for Chinese Residents (IDSHL), which includes basic knowledge and concepts of infectious diseases (7 items), prevention of

infectious diseases (7 items), infection Disease management and treatment (4 items), identification of pathogens and infectious sources (4 items) 4 dimensions. Cronbach's α coefficient is 0.832, and it is tested in a large-scale population, which has the advantages of practicality, applicability, and science.

2.2 Specific Assessment Tools for Health Literacy in Infectious Diseases

Due to the diversity of infectious disease transmission routes, its prevention and control have strong specificity, and the universal health literacy scale for infectious diseases is difficult to reflect the health literacy level of a specific infectious disease. Born one after another.

In 2010, the questionnaire on prevention literacy of key infectious diseases among key populations was designed by the China Health Education Center [12] for five key populations: urban floating population, primary and middle school students, residents in pastoral areas, residents in flood-prone areas, and residents in poor western areas. of. The infectious diseases surveyed by the five groups of people have their own emphases, including indicators such as key infectious disease knowledge, behavior, reading comprehension, and on-site behavior observation. Infectious Disease Health Literacy. The Cronbach's α coefficients of the five types of questionnaires were all greater than 0.8, which indicated high reliability and validity. Both Brief Estimate of Health Knowledge and Action- HIV version (BEHKA-HIV) and HIV Literacy Test (HIV-LT) are effective tools for evaluating the health literacy of AIDS patients. The former was compiled by Osborn et al. The patient's ability to understand and apply disease knowledge, the content of the questionnaire is concise and easy to use. The latter was formulated by Tique et al. [14] in 2016, which contains 16 items and aims to measure the comprehension and calculation ability of AIDS patients on disease-related information. In addition, for rapid assessment, the developers also developed the HIV-LT-10 scale, which contains only 10 items. In 2012, some scholars compiled a health literacy assessment tool for respiratory infectious diseases [15]. The tool includes 3 dimensions of knowledge, behavior and ability, with a total of 39 items, and the Cronbach's α coefficient is 0.842. Since the tool needs to be used with the support of computer-aided technology, and the evaluation time is long, it is not suitable for large-scale clinical use. use.

In 2019, the cholera health literacy questionnaire designed by Tutu[16] included 4 dimensions and 20 items, and the Cronbach's α coefficient was 0.762, showing good reliability and validity. However, the scale was only tested on 401 poor residents in a town in a western African country, and whether it can be extended to other groups needs to be verified. Li et al. [17] developed the China Tuberculosis Health Literacy Scale (CHLS-TB) in 2019, which is used to assess the ability of tuberculosis patients to treat and self-manage the disease. The scale includes 4 dimensions of memory, comprehension, application and analysis, and 29 items. The Cronbach's α coefficient is 0.820, and the test-retest reliability is 0.958. The novel coronavirus health literacy questionnaire HLS-COVID-Q22 (Coronavirus-Related Health Literacy Survey Questionnaire) was designed by Okan et al. The questionnaire includes 4 dimensions of acquisition (6 items), comprehension (6 items), evaluation (5 items) and application (5 items), and the internal consistency Cronbach's α coefficient is 0.940. The questionnaire has been applied to 1 153 German Internet users, and the results show that the questionnaire can quickly assess the literacy of COVID-19 and is easy to use, and its applicability in other regions needs to be studied.

At present, the health literacy-specific assessment tools for infectious diseases developed abroad are mostly aimed at major infectious diseases such as AIDS, cholera, and new coronary pneumonia. In my country, however, most of the questions related to the prevention and control of infectious diseases in the National Residents' Health Literacy Monitoring Questionnaire are used to evaluate residents' infectious disease prevention and control literacy, which is still unable to fully evaluate the level of residents' infectious disease health literacy. The health literacy of Chinese residents' infectious diseases developed in 2016 Although the table comprehensively covers the important information of infectious diseases from different transmission routes, it has not been widely used.

3 LEVELS OF INFECTIOUS DISEASE HEALTH LITERACY

At present, the level of health literacy for infectious diseases at home and abroad is generally low. Le et al [19] pointed out that the average HPV health literacy score of Korean immigrant women was 4.06 points (total score 7 points). The COVID-19 literacy rate of German residents was only 49.9%, and 52% of the participants indicated that it was difficult to understand and apply information related to infectious diseases [18]. A survey in Indonesia found that 1 out of every 3 AIDS patients had insufficient health literacy, and as many as 44% of the patients had difficulty understanding the appointment form[20]. McCafery et al[21] conducted a survey of the Australian public and found that 13% of the subjects had insufficient health literacy, 40% of the public did not understand the key symptoms of infectious diseases, and even mistrusted false information about infectious diseases. Wang Lanlan et al [22] analyzed the national residents' health literacy monitoring data in 2018 and found that among the six types of health problem literacy, the level of infectious disease health literacy was the lowest, only 17.05%. In 2020, the research results of Zhang Xiaohong et al. [23] showed that the health literacy level of infectious diseases among middle-aged and elderly people in Tai'an City was only 15.5%, and the basic knowledge literacy (23.4%) was better than the health behavior literacy (20.3%), skill literacy (10.9%), suggesting that middle-aged and elderly people have the phenomenon of separation of knowledge and action.

4 INFLUENCING FACTORS OF INFECTIOUS DISEASE HEALTH LITERACY

Zhou Liang et al. [24] analyzed the status quo of infectious disease health literacy among residents aged 15-69 in Hubei Province, and the results showed that age, education level and occupation are important factors affecting residents' infectious disease health literacy. In addition, studies have shown that there is a large gap in the health literacy level of infectious diseases among the elderly with different economic status [25]. Du Weijing et al. [26] surveyed migrant workers in Zhejiang, Hubei, and Gansu provinces and found that the duration of Internet access and access to health information were significantly related to the level of infectious disease health literacy. A systematic review by Lakhani et al. [27] pointed out that the place of residence is also one of the important factors affecting health literacy of infectious diseases. Due to the low education level of the rural population, limited ability to obtain health information, and relatively weak awareness of epidemic prevention and control, their health literacy level of infectious diseases is far lower than that of the urban population [28]. Therefore, it is imminent to improve the health literacy of the public on infectious diseases, and it is urgent to pay attention to residents in rural areas, elderly, low-educated, poor economic conditions, and limited access to health information.

5 INTERVENTION RESEARCH ON INFECTIOUS DISEASE HEALTH LITERACY

There are limited research reports on interventions related to health literacy of infectious diseases at home and abroad, and the intervention methods focus on the combination of audio-visual materials and education and training. Kim et al.[29] compiled the knowledge of respiratory infectious diseases into songs. After the elderly learned to sing, their knowledge and skills of infectious disease prevention and treatment were greatly improved, and the effect was maintained after one month. Jacque et al. set up an innovative classroom to integrate the knowledge and skills of infectious disease prevention and control into high school biology classes. The results showed that most students had mastered the skills of infectious disease prevention and control, and enhanced their ability to communicate infectious disease information with others. Tran et al. asked patients with hepatitis B to repeat the content of health education given by medical staff, evaluated their mastery and explained again. The research results showed that teaching-back method can enhance the communication ability between hepatitis B patients and medical staff, and improve their comprehension ability. , and ultimately ensure the effectiveness of the intervention. Studies by Rodriguez and others have shown that playing rap videos on AIDS prevention and treatment can improve the disease knowledge reserve of AIDS patients, promote mental health, and improve medication compliance. Hu Xiuqiong and others used comprehensive health communication activities such as health lectures, group learning, and new media to intervene with residents. The results showed that the residents' knowledge of infectious disease prevention and treatment was improved, their preventive behavior was improved, and their health literacy level for infectious diseases was significantly improved. Li Yingying's research shows that the multi-dimensional interaction between nursing students and residents can improve their health literacy for infectious diseases and enhance their self-efficacy in adopting healthy behaviors [30].

It can be seen that health education in the form of easy-to-understand pictures and videos can improve the public's acceptance of health information, and is an important way to improve health literacy of infectious diseases. Foreign research focuses on improving the disease-related health literacy level of patients with certain infectious diseases, while domestic intervention research on the health literacy of infectious diseases is less. To promote the key points of behavioral development, in order to carry out targeted research on the prevention and intervention of infectious diseases, it plays a decisive role in improving the self-prevention and management of infectious diseases of the people and curbing the occurrence and development of infectious diseases.

6 STRATEGIES FOR IMPROVING HEALTH LITERACY OF INFECTIOUS DISEASES

At present, my country mostly uses the questions related to the prevention and control of infectious diseases in the national health literacy questionnaire to monitor the health literacy level of infectious diseases among people aged 15-69. However, the Health Literacy Scale for Infectious Diseases of Chinese Residents developed in 2016 can comprehensively measure the health literacy level of infectious diseases from different transmission routes of infectious diseases, but it is only aimed at people aged 15 to 69, and has not yet been applied to children, adolescents and the elderly. High-risk and susceptible groups such as infectious diseases, it is urgent to accurately assess the status of infectious disease health literacy, influencing factors and key targets for intervention in various groups of people, and adhere to the principle of "prevention first, moving the threshold forward", in order to further formulate targeted infectious disease Provide ideas for prevention and control interventions.

7 INTEGRATING INFECTIOUS DISEASE HEALTH LITERACY INTO CORE CURRICULUM

Despite global calls to make health literacy an educational priority, only a few countries, such as Finland, have incorporated health literacy into core school curricula. The government needs to seize various educational opportunities, give priority to infectious diseases that are particularly harmful to young people, incorporate infectious disease health literacy into the core curriculum of schools, improve students' personal hygiene habits, and enhance their knowledge, attitudes and resilience to prevent infectious diseases. Prevent mass outbreaks of infectious diseases and promote their healthy growth.

8 CONCLUSION

Constructing an economical, applicable, and effective health promotion innovation model for infectious diseases starts from the people's demand for and supply of health services for infectious diseases, takes the health literacy of infectious diseases as a breakthrough point, and draws on advanced intervention methods for health literacy of infectious diseases at home and abroad. Theoretical-based intervention strategies are put into practice, using video, pictures and other multimedia as the carrier of information dissemination channels to jointly promote health education, combining fun with information technology, and constantly innovating the health promotion model of infectious diseases, in order to achieve "Healthy China" Action provides new ideas and new approaches.

To sum up, improving the health literacy of infectious diseases is an important part of building a healthy China, and it is a major livelihood issue for the people at present. It requires the joint efforts of the government, communities, families, schools and society to continue to advance. However, the level of health literacy of infectious diseases among Chinese residents is not optimistic. At present, survey research is still the mainstay, and intervention research is lacking. The outbreak of COVID-19 has brought huge losses and destroyed the physical and mental health of people around the world. Under the normalization of epidemic prevention and control, the prevention and control of infectious diseases is urgent. New theories and new methods of infectious disease health literacy can truly achieve the strategic goal of "Healthy China".

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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