ChinaRxiv

AI translation · View original & related papers at
chinarxiv.org/items/chinaxiv-202211.00060

The Impact of Dementia Prevention Beliefs on Health-Promoting Lifestyles in Adults: Postprint

Authors: LI Hua, ZHANG Jinying, WANG Li, YANG Tiantian, YANG Yanni

Date: 2022-10-31T00:00:00+00:00

Abstract

Background The incidence of dementia in China is gradually increasing. Healthy lifestyle represents an important modifiable factor for dementia occurrence, and the Health Belief Model can be widely applied to explain and predict health-related behaviors. Objective To investigate and analyze the influence of public health beliefs regarding dementia prevention on health behavior levels, and to provide a scientific basis for developing preventive intervention programs grounded in the Health Belief Model. Methods Using a convenience sampling method, an online questionnaire was administered to survey general information, dementia prevention knowledge, dementia prevention beliefs, and health-promoting lifestyles among 1021 adults in China. Multiple linear regression analysis was employed to examine the impact of dementia prevention beliefs on health-promoting lifestyles. Results Within dementia prevention health beliefs, perceived barriers (β=-0.280, $P < 0.01$), self-efficacy (β=0.148, $P < 0.01$), perceived susceptibility (β=-0.118, $P < 0.01$), perceived benefits (β=0.069, $P < 0.01$), and overall health motivation (β=0.093, $P < 0.0$); and within demographic factors, place of residence (β=0.057, $P < 0.05$), education level (β=0.120, $P < 0.01$), history of dementia contact (β=0.080, $P < 0.01$), and level of dementia prevention knowledge (β=0.087, $P < 0.01$) significantly influence adults' health-promoting lifestyles. Conclusion Adults' health behavior and lifestyle levels are associated with certain dimensions of dementia prevention health beliefs and demographic factors. Future dementia prevention interventions for populations can be implemented based on the relational characteristics between the Health Belief Model and behavior.

Full Text

Study on the Influence of Dementia Prevention Beliefs on Health-Promoting Lifestyles in Adults

Li Hua, Zhang Jinying, Wang Li, Yang Tiantian, Yang Yanni*

Funding: 2020 National Social Science Fund Project (Project No.: 20BRK039)

400038 Chongqing, Department of Basic Nursing, School of Nursing, Army Medical University

Corresponding author: *Yang Yanni, Professor, Doctoral Supervisor; E-mail: yangyan9787@sina.com*

Abstract

Background: The incidence of dementia is gradually increasing in China. Healthy lifestyle represents an important modifiable factor for dementia onset, and the Health Belief Model can be widely applied to explain and predict health-related behaviors. **Objective:** To investigate and analyze the impact of public dementia prevention health beliefs on health behavior levels, providing a scientific basis for developing prevention interventions grounded in the Health Belief Model. **Methods:** Using convenience sampling, we surveyed 1,021 Chinese adults via online questionnaires regarding general demographics, dementia prevention knowledge, dementia prevention beliefs, and health-promoting lifestyles. Multiple linear regression analysis was employed to examine the influence of dementia prevention beliefs on health-promoting lifestyles. **Results:** Within dementia prevention health beliefs, perceived barriers (β=-0.280, P<0.01), self-efficacy (β=0.148, P<0.01), perceived susceptibility (β=-0.118, P<0.01), perceived benefits (β=0.069, P<0.01), and general health motivation (β=0.093, P<0.01) significantly impacted health-promoting lifestyles. Among demographic factors, residence (β=0.057, P<0.05), education level (β=0.120, P<0.01), dementia contact history (β=0.080, P<0.01), and dementia prevention knowledge level (β=0.087, P<0.01) also exerted significant effects. **Conclusion:** Adults' health behaviors and lifestyle levels are associated with certain dimensions of dementia prevention health beliefs and demographic factors. Future dementia prevention interventions can be implemented based on the relationship characteristics between the Health Belief Model and behavior.

[**Keywords**] Dementia; Prevention; Health belief; Health behavior

---

Introduction

Dementia represents a serious social problem accompanying population aging, imposing tremendous material and psychological burdens on individuals, families, and society. By 2019, the prevalence of dementia among Chinese individuals aged 65 and above had risen to 5.60%, making China the country with the largest number of dementia patients worldwide [1]. In recent years, due to lifestyle changes and improved education levels, developed countries have effectively controlled and even reversed the rising trend of dementia incidence [2]. However, low- and middle-income countries, including China, continue to

experience increasing dementia prevalence. Research indicates that controlling modifiable risk factors related to lifestyle could reduce dementia incidence in China by 40% [3]. The World Health Organization (WHO) released its first *Guidelines on Risk Reduction of Cognitive Decline and Dementia* in May 2019 [4], recommending dementia risk prevention through physical exercise, balanced nutrition, weight control, and social participation. Active preventive interventions can effectively delay disease onset and progression, improve quality of life among older adults, and reduce societal and family burdens.

The Health Belief Model represents one of the most important health behavior theories, widely used to explain and predict behaviors related to chronic diseases [5, 6]. This theoretical framework posits that factors influencing public adoption of health behaviors for disease prevention include multiple dimensions: perceived severity and susceptibility to disease, anticipated benefits of behavior change, barriers to behavior modification, cues to action, and self-efficacy. Due to varying disease perceptions, the effect of each dimension differs across diseases, and application of the Health Belief Model in dementia prevention remains rarely reported. This study examines the impact of dementia prevention health beliefs on health-promoting lifestyles from the novel perspective of promoting brain health and reducing dementia risk, aiming to provide scientific evidence and reference for future dementia prevention intervention development.

Methods

1.1 Study Participants Using convenience sampling, we collected questionnaires through an online survey platform between February and March 2020, selecting Chinese adults aged over 18 years as study participants. Inclusion criteria were: (1) normal reading and comprehension ability to complete the questionnaire; (2) age over 18; and (3) voluntary participation with signed informed consent. Exclusion criterion: inability to independently complete the survey using a mobile phone. This study was approved by the Medical Ethics Committee of Army Medical University (Approval No.: 2020-030-02).

1.2 Survey Instruments 1.2.1 General Information Questionnaire: Designed by the researchers based on literature review, including gender, age, residence, education level, employment status, marital status, dementia contact history, and dementia family history.

1.2.2 Dementia Prevention Knowledge Questionnaire: Developed based on WHO' s *Guidelines on Risk Reduction of Cognitive Decline and Dementia* and adapted from the questionnaire used in Heger et al.' s study [7]. The content covers 11 knowledge points related to dementia risk, including physical exercise, nutrition, hypertension, diabetes, and dyslipidemia. Each correct answer scores 1 point, with total scores ranging from 0 to 11. Higher scores indicate better

dementia prevention knowledge. The Cronbach' s α coefficient for this self-developed questionnaire was 0.824 in this study.

1.2.3 Chinese Version of the Motivation to Change Lifestyle and Health Behaviors for Dementia Risk Reduction (MCLHB-DRR) Scale: This scale measures dementia prevention health beliefs, originally developed by Kim et al. [8] based on the Health Belief Model and later translated by our research group [9]. The scale contains 27 items across seven dimensions: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, general health motivation, and self-efficacy. Each item uses a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The perceived barriers dimension is reverse-scored. Total scores range from 27 to 135, with higher scores indicating stronger dementia prevention health beliefs. The Chinese version demonstrated test-retest reliability of 0.868 and Cronbach' s α of 0.763; in this study, Cronbach' s α was 0.866, indicating good reliability and validity.

1.2.4 Health-Promoting Lifestyle Profile-II Revised (HPLP-II R): Revised by Cao et al. [10] from the original HPLP-II, this instrument assesses health-promoting lifestyles. It comprises 40 items across six dimensions: nutrition, physical activity, health responsibility, interpersonal relations, spiritual growth, and stress management. Items are rated on a 4-point Likert scale from 1 (never) to 4 (routinely), with total scores ranging from 40 to 160. Mean item scores of 1-2, 2-3, and 3-4 indicate low, moderate, and high levels of health-promoting lifestyle, respectively. Higher scores represent better health-promoting lifestyle. The scale' s Cronbach' s α coefficients range from 0.63 to 0.81, with test-retest reliability of 0.69; in this study, Cronbach' s α was 0.934, demonstrating good reliability and validity.

1.2.2 Data Collection and Quality Control We conducted the survey using an online questionnaire distributed via WeChat to obtain the sample. Researchers posted the questionnaire on a domestic online survey platform (Wenjuanxing) and obtained a shareable link. When distributing the link, investigators explained the survey purpose, content, completion method, and precautions to participants. The questionnaire was anonymous, voluntary, and data automatically uploaded to the platform upon completion, which researchers then exported. To ensure quality, each IP address could submit only once, and all items had to be completed before submission. A total of 1,022 questionnaires were collected; one was excluded due to obvious errors (identical responses for all items or completion time <300 seconds), yielding 1,021 valid questionnaires (99.9% valid response rate).

1.2.3 Statistical Analysis Measurement data are expressed as mean ± standard deviation ($\bar{x}\pm$SD), and count data as frequency and percentage. SPSS 24.0 software was used for analysis of variance or t-tests to compare health-promoting lifestyle scores across different demographic characteristics. Pearson

correlation analysis explored relationships between variables. Multiple linear regression analysis examined the influence of dementia prevention health belief dimensions and other factors on health-promoting lifestyle. P<0.05 was considered statistically significant.

Results

2.1 Dementia Prevention Knowledge and Health Belief Levels in Adults The dementia prevention knowledge score among surveyed adults was 7.46$±$2.85, representing a 67.82% scoring rate. Health belief scores are presented in Table 1 .

Table 1 Scores of health belief in dementia prevention in adults (n=1021)

Dimension	Mean Score	Item Mean	Ranking
General health motivation	17.58$±3.13|4.40±0.787||*Perceivedseverity*|8.12±1.71|4.16±0.86|2||*Perceivedsusceptibi* *e f f icacy*|2.56±1.03|7.63±2.35|6||*Perceivedbarriers*|2.08±0.82|8.32±$3.29		

Note: All dimensions and items use forward scoring.

2.2 Health-Promoting Lifestyle Levels in Adults The total health-promoting lifestyle score among surveyed adults was 99.93$±$15.72. Specifically, 71 participants (7.00%) had low-level lifestyles, 831 (81.87%) had moderate-level lifestyles, and 113 (11.13%) had high-level lifestyles.

2.3 Influence of Demographic Characteristics on Health-Promoting Lifestyle The relationship between health-promoting lifestyle and sociodemographic characteristics is shown in Table 2 .

Table 2 The relationship between health-promoting lifestyle and sociodemographic characteristics ($\bar{x}$±SD)

Characteristic	n	Health-Promoting Lifestyle Score	F/t value
Age			

Characteristic	n	Health-Promoting Lifestyle Score	F/t value
Young adult (18-44)	539	98.11$±17.07|2.15||*Middle* − *aged*(45 − 59)|480|100.80±15.19|||*Olderadult*(60)|2|99.18±16.21|||∗ ∗*Education* ∗ ∗|||||*Juniorhighorbelow*|39|93.35±15.12|8.73∗ ∗||*Highschool/technicalsecondary*|101|95.67±13.78|||*College*|311|98.97±15.45|||*Ba* ∗*Residence* ∗ ∗|||||*Rural*|104|92.42±15.41| − 4.91 ∗ ∗||*Urban*|917|101.03±15.67||| ∗ ∗*Dementiacontacthistory* ∗ ∗|||||*No*|721|98.61±16.15| − 3.01 ∗ ∗||*Yes*|300|102.62±$14.40	

Note: Chronic diseases primarily refer to hypertension, diabetes, hypercholesterolemia, and other conditions closely associated with dementia.

2.4 Correlation Analysis Among Dementia Prevention Knowledge, Health Beliefs, and Health-Promoting Lifestyle Health-promoting lifestyle showed significant positive correlation with dementia prevention knowledge (r=0.210, P<0.01). All health belief dimensions demonstrated significant correlations with health-promoting lifestyle: perceived susceptibility, perceived severity, and perceived barriers were significantly negatively correlated (r=-0.214, -0.107, and -0.361, respectively; P<0.01), while perceived benefits, cues to action, general health motivation, and self-efficacy were significantly positively correlated (r=0.242, 0.151, 0.266, and 0.341, respectively; P<0.01).

2.5 Influencing Factors of Health-Promoting Lifestyle Based on Health Belief Model Using total lifestyle score as the dependent variable and health belief dimensions plus demographic variables showing significant differences in univariate analysis as independent variables, multiple linear regression analysis revealed that significant influencing factors included perceived susceptibility, perceived benefits, perceived barriers, self-efficacy, general health motivation, dementia prevention knowledge level, residence, education level, and dementia contact history (P<0.05). Independent variable assignments are shown in Table 3 , and regression results in Table 4 .

Table 3 Assignment of independent variables

Variable	Assignment
Education	Junior high or below=1, High school/technical secondary=2, College=3, Bachelor' s degree=4, Master' s or above=5
Residence	Rural=0, Urban=1
Dementia contact history	No=0, Yes=1
Dementia prevention knowledge, health beliefs	Original values entered

Table 4 Multiple linear regression analysis of health promoting lifestyle in adults (n=1021)

Variable	B	SE	β	t	P
Perceived susceptibility	-0.471	0.118	-0.118	-3.99	0.000
Perceived benefits	0.486	0.152	0.069	3.20	0.001
Perceived barriers	-0.280	0.035	-0.280	-7.93	0.000
Self-efficacy	0.148	0.025	0.148	5.85	0.000
General health motivation	0.093	0.032	0.093	2.94	0.003
Residence	0.057	0.023	0.057	2.45	0.014
Education level	0.120	0.023	0.120	5.15	0.000
Dementia contact history	0.080	0.026	0.080	3.11	0.002
Dementia prevention knowledge	0.087	0.026	0.087	3.31	0.001

Adjusted R^2=0.282, F=43.805, P=0.000

Discussion

3.1 Characteristics of Dementia Prevention Health Beliefs and Health-Promoting Lifestyles in Adults Our findings reveal that among the seven dimensions of adults' beliefs about changing lifestyle to reduce dementia risk, scores from lowest to highest were: perceived susceptibility, perceived barriers, perceived severity, cues to action, perceived benefits, self-efficacy, and general health motivation. Both perceived susceptibility and perceived severity scored below the midpoint of 3, indicating this population tends to deny that dementia is serious and likely to occur. While this may prevent worry, anxiety, and fear, excessively low susceptibility and severity perceptions may also reflect inadequate dementia-related knowledge [11]. General health motivation scored highest, suggesting people are relatively concerned about their overall health status and believe health behaviors and lifestyles play positive roles. Self-efficacy and perceived benefits also scored relatively high,

indicating this population believes healthy lifestyles help reduce dementia risk and feels confident in their ability to act. Perceived barriers involve obstacles such as insufficient time, economic constraints, family responsibilities, and disruption of established routines. This dimension typically represents a key focus in designing preventive interventions. In this survey, perceived barriers scored slightly below the midpoint, suggesting substantial room for intervention regarding barriers to implementing health behaviors.

The online survey results show public health-promoting lifestyles at a moderate level, consistent with Cao et al.' s findings in Changzhi [10]. Specifically, 831 participants (81.87%) had moderate-level lifestyles, while 113 (11.13%) had high-level lifestyles—a significantly higher proportion than reported in Xia et al.' s study [12], possibly due to higher education levels in our sample, as education is an influencing factor. Over half of our participants had bachelor' s degrees or higher. Health-promoting lifestyles have been confirmed to closely correlate with dementia risk, affecting 40% of dementia incidence [2]. Our results suggest room for improvement across all lifestyle dimensions. Healthcare professionals should address existing lifestyle issues in the population, provide scientific health guidance, and apply WHO' s latest evidence-based guidelines [4] to guide healthy behavior maintenance from a dementia prevention perspective, promoting successful cognitive aging.

3.2 Impact of Dementia Prevention Health Beliefs on Lifestyle Regression analysis revealed that among the seven health belief dimensions, perceived barriers, self-efficacy, perceived susceptibility, general health motivation, and perceived benefits significantly influenced health-promoting lifestyle. Perceived barriers and susceptibility exerted negative effects, while self-efficacy, general health motivation, and perceived benefits showed positive effects. Specifically, greater perceived barriers to behavior change and higher perceived dementia risk were detrimental to health behavior formation, whereas stronger confidence in behavior change and greater perceived benefits facilitated healthy habit development.

Previous research has shown that perceived barriers constitute the most influential belief factor in preventive health behaviors [13], consistent with our findings. Perceived barriers represent internal and external obstacles to behavior change for dementia prevention, including time, space, economic costs, and subjective willingness. The significant impact of perceived barriers on lifestyle, with greater effect than perceived benefits, suggests that health policymakers planning dementia prevention strategies must not only disseminate knowledge but also understand difficulties people encounter when changing health behaviors. Helping individuals overcome internal difficulties and providing convenient social environments are essential for effectively guiding self-health management to reduce dementia risk.

In this study, perceived susceptibility negatively affected lifestyle—stronger perceived susceptibility was detrimental to health behavior development. Research

on disease prevention behaviors has found that perceived susceptibility plays an important role, with effects varying by direction [14, 15]. The negative effect observed here may stem from two factors: first, the belief that dementia is genetically determined and therefore unavoidable, with fatalism dominating susceptibility perceptions; second, inadequate knowledge about modifiable risk factors and prevention. The 2019 World Alzheimer Report noted that one-quarter of people still consider dementia unpreventable [4]. Higher knowledge levels form the foundation for correct belief systems—if people believe a disease is uncontrollable, they won' t take proactive preventive action. Therefore, future dementia prevention education should emphasize preventability and controllability, potentially transforming perceived susceptibility into a positive influence by correcting misconceptions. Our findings also suggest that because perceived susceptibility differentially affects health behaviors across diseases, analyzing each dimension separately rather than combining scores may be more meaningful when constructing Health Belief Model-based questionnaires.

General health motivation reflects concern for personal health. Our regression results show that greater attention to overall health correlates with better health behaviors and lifestyles. Previous research consistently demonstrates that general health motivation promotes health behaviors, though effect sizes vary. Peng et al. [16] found general health motivation was the most influential belief factor for stroke patients implementing health behaviors, whereas in our study its effect was smaller, suggesting that disease-specific perceptions influence the strength of general health motivation' s role. Promoting overall health concern rather than focusing solely on specific diseases may represent an effective approach to reducing dementia incidence. Future dementia prevention interventions based on comprehensive disease management concepts that enhance attention to overall health may prove effective.

Perceived benefits in dementia prevention beliefs showed positive effects on health-promoting lifestyle, a finding that cannot be overlooked. Self-efficacy demonstrated the strongest positive influence on healthy lifestyle, indicating that individuals'confidence in changing unhealthy habits to reduce dementia risk is the strongest predictor of success. Research shows that enhancing self-efficacy can effectively stimulate intrinsic motivation, strengthen self-management abilities, and positively promote target behaviors [17].

3.3 Influence of Other Factors on Health-Promoting Lifestyle Regression analysis revealed that urban residence, dementia contact history, higher education level, and better dementia prevention knowledge facilitated healthy lifestyle formation. Urban residents have better access to quality medical services, resulting in better health literacy and healthier lifestyles. Contact experiences with dementia patients motivate healthy lifestyle adoption, likely because direct exposure provides more intuitive understanding of dementia' s onset and progression, thereby increasing prevention awareness. Studies show that individuals with dementia contact history more accurately recognize lifestyle benefits

[18]. These findings suggest that broadcasting relevant videos through public media or organizing volunteer activities for dementia patients may help more people understand dementia and motivate proactive self-management for prevention.

Higher education correlated with better health-promoting lifestyles, consistent with Xia et al.' s findings [12]. Li et al. [19] also found that higher education associated with better health literacy, of which healthy lifestyle is a crucial component. The Alzheimer' s Disease International report noted that since evidence for dementia risk reduction through health behaviors has only accumulated over the past decade, the public largely still considers dementia a normal part of aging, with poor awareness of its preventability [20]. Liu et al.' s [21] survey of Chinese residents' dementia knowledge similarly found lowest scores for awareness of risk factors. Therefore, our results suggest that strengthening dementia prevention education and promoting correct understanding of dementia risk and severe outcomes may serve as an important intervention target for motivating Chinese adults toward proactive dementia prevention, warranting attention from health managers, policymakers, and healthcare providers.

Conclusion

This study found that among Chinese adults, general health motivation, self-efficacy, and perceived benefits in dementia prevention health beliefs scored relatively high, while perceived susceptibility, perceived barriers, and perceived severity scored relatively low. Health-promoting lifestyles were at a moderate level with substantial room for improvement. Perceived susceptibility, perceived benefits, perceived barriers, general health motivation, and self-efficacy significantly influenced healthy lifestyle, while dementia prevention knowledge, residence, education, and dementia contact history also exerted varying degrees of influence. These findings suggest that in promoting the "Healthy China 2030" goal of reducing dementia prevalence among older adults, healthcare personnel should focus on perceived barriers, self-efficacy, perceived susceptibility, general health motivation, and perceived benefits according to population characteristics. Targeted dementia prevention interventions based on the Health Belief Model can optimize intervention effectiveness. This study used online convenience sampling, with a predominantly female sample mostly residing in urban areas and having relatively high education levels, limiting representativeness and generalizability. However, this population may be suitable for online health interventions. Future research should improve sampling methods and conduct multi-center surveys to further clarify the mechanisms of health beliefs in dementia prevention.

Conflict of Interest: The authors declare no conflicts of interest.

References

[1] Jia L, Quan M, Fu Y, et al. Dementia in China: epidemiology, clinical management, and research advances[J]. Lancet Neurol, 2020, 19(1): 81-92. DOI:10.1016/s1474-4422(19)30290-x.

[2] Livingston G, Sommerlad A, Orgeta V, et al. Dementia prevention, intervention, and care[J]. Lancet, 2017, 390(10113): 2673-2734. DOI:10.1016/s0140-6736(17)31363-6.

[3] Mukadam N, Sommerlad A, Huntley J, et al. Population attributable fractions for risk factors for dementia in low-income and middle-income countries: an analysis using cross-sectional survey data[J]. Lancet Glob Health, 2019, 7(5): e596-e603. DOI:10.1016/s2214-109x(19)30074-9.

[4] World Health Organization. Risk reduction of cognitive decline and dementia: WHO guidelines[M]. Geneva: World Health Organization, 2019.

[5] Wan L, Ruan H, Zhou W, et al. Health beliefs and behaviors in patients with hypertension and first stroke[J]. Chinese Journal of Hypertension, 2014, 22(09): 859-864. DOI:CNKI:SUN:ZGGZ.0.2014-09-021.

[6] Fang H, Zhang M, Liu K. Correlation between health beliefs and health behaviors in patients with coronary heart disease[J]. Journal of Nursing Science, 2007, 24(7B): 26-28+74. DOI:CNKI:SUN:JFHL.0.2007-08-010.

[7] Heger I, Deckers K, van Boxtel M, et al. Dementia awareness and risk perception in middle-aged and older individuals: baseline results of the MijnBreincoach survey on the association between lifestyle and brain health[J]. BMC Public Health, 2019, 19(1): 678. DOI:10.1186/s12889-019-7010-z.

[8] Kim S, Sargent-Cox K, Cherbuin N, et al. Development of the motivation to change lifestyle and health behaviours for dementia risk reduction scale[J]. Dement Geriatr Cogn Dis Extra, 2014, 4(2): 172-183. DOI:10.1159/000362228.

[9] Wang X, Yang Y, Tang B, et al. Reliability and validity of the Chinese version of the Motivation to Change Lifestyle and Health Behaviours for Dementia Risk Reduction Scale[J]. Journal of Nursing Science, 2016, 31(21): 13-16. DOI:10.3870/j.issn.1001-4152.2016.21.013.

[10] Cao W, Guo Y, Ping W, et al. Development and psychometric testing of the Chinese version of HPLP-II health-promoting lifestyle profile[J]. Chinese Journal of Disease Control & Prevention, 2016, 20(03): 286-289. DOI:10.16462/j.cnki.zhjbkz.2016.03.018.

[11] Rosato M, Leavey G, Cooper J, et al. Factors associated with public knowledge of and attitudes to dementia: A cross-sectional study[J]. PLoS One, 2019, 14(2): e0210543. DOI:10.1371/journal.pone.0210543.

[12] Xia X, Chen C, Hu L, et al. Analysis of health-promoting lifestyle and influencing factors among middle-aged and elderly residents in

Sichuan Province[J]. Modern Preventive Medicine, 2019, 46(19): 3575-3579. DOI:CNKI:SUN:XDYF.0.2019-19-033.

[13] Janz N K, Becker M H. The Health Belief Model: A Decade Later[J]. Health Education Quarterly, 1984, 11(1): 1-47. DOI: 10.1177/109019818401100101.

[14] Zeng Y. Analysis of influencing factors on lifestyle behaviors of the general public based on the Health Belief Model[D]. Fujian Medical University, 2016. DOI:CNKI:CDMD:2.1016.747881.

[15] Saghafi-Asl M, Aliasgharzadeh S, Asghari-Jafarabadi M. Factors influencing weight management behavior among college students: An application of the Health Belief Model[J]. PLoS One, 2020, 15(2): e0228058. DOI:10.1371/journal.pone.0228058.

[16] Peng H, Wan L, Huang Y, et al. Investigation on health beliefs and health behaviors in stroke patients[J]. Chinese Journal of Nursing, 2012, 47(01): 10-13. DOI:10.3761/j.issn.0254-1769.2012.01.004.

[17] Schonfeld P, Preusser F, Margraf J. Costs and benefits of self-efficacy: Differences of the stress response and clinical implications[J]. Neurosci Biobehav Rev, 2017, 75: 40-52. DOI:10.1016/j.neubiorev.2017.01.031.

[18] Smith BJ, Ali S, Quach H. The motivation and actions of Australians concerning brain health and dementia risk reduction[J]. Health Promot J Austr, 2015, 26(2): 115-121. DOI:10.1071/he14111.

[19] Li Y, Wu C, Zhong Q, et al. Analysis of health literacy status and influencing factors among Wuhan residents[J]. Chinese Journal of Public Health, 2019, 35(04): 471-474. DOI:10.11847/zgggws1121141.

[20] Alzheimer' s Disease International. World Alzheimer Report 2018: the state of the art of dementia research: new frontiers[R/OL]. (2018-09-21). https://www.alz.co.uk/research/world-report-2018.

[21] Liu D, Cheng G, An L, et al. Public Knowledge about Dementia in China: A National WeChat-Based Survey[J]. Int J Environ Res Public Health, 2019, 16(21): 4231. DOI:10.3390/ijerph16214231.

Note: Figure translations are in progress. See original paper for figures.

Source: ChinaXiv —Machine translation. Verify with original.