Original article

Health-promoting lifestyles and their related influences among nursing assistants in nursing homes in China

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ABSTRACT

Objective: The aims are to assess the health-promoting lifestyle status of nursing assistants in nursing homes in China and explore the roles of demographic, health conception, perceived health behavior self-efficacy, and job satisfaction in health-promoting lifestyles.
Method: Using a cross-sectional descriptive design and convenience sampling, 285 nursing assistants from different nursing homes in Hangzhou were investigated using the Health-Promoting Lifestyle Profile II, Self-Rated Abilities for Health Practice Scale, Health Conception Scale, Minnesota Satisfaction Questionnaire, and a demographic questionnaire to measure their health-promoting lifestyle status. The collected data were analyzed using SPSS20.0.
Results: The total score of health-promoting lifestyles among investigated nursing assistants is 114 (13). Six dimensions are standardized, including interpersonal relations, health responsibility, stress management; nutrition, spiritual growth, and physical activity, listed in descending order of their values. The variables of gender, education, number of care recipients, and religion appear to significantly influence nursing assistants' health-promoting lifestyles ($p < 0.05$). Perceived health behavior self-efficacy, health conception, and job satisfaction are significantly positively correlated with health-promoting lifestyles ($p < 0.05$). Multiple regression analysis revealed that the predictor variables, such as gender, religion, number of care recipients, and perceived health behavior self-efficacy, can explain 48.4% of the variance in health-promoting lifestyles.
Conclusion: The level of health-promoting lifestyles is mediocre in nursing assistants in China, with the highest score in interpersonal relations and the lowest score in physical activity. The variables of gender, education, number of care recipients, religion, and perceived health behavior self-efficacy can serve as effective predictors of health-promoting lifestyles.

1. Introduction

Since the 1980s, when the Chinese government imposed a family-planning policy that allowed one couple to have only one child, China's demographic structure has undergone tremendous changes. Sustained low fertility has led to a rapid decline in the proportion of young people in the entire population. China has been an aging society since 1999. In many economically developed cities, as the generation born in the 1980s has their offspring, families with a "4-2-1" population structure (four aging adults, two adults, and one child) have become more popular. According to a report on the development of China's aging affairs published by the Chinese Academy of Sciences (Ge, 2007), China reached the first peak in aging growth in 2013 with an aging population

of 202 million and an aging rate of 14.8%. The aging population will increase by one million annually until the end of 2025. Large numbers of elderly and disabled people have to change their conventional home-based care to public care, living in public nursing homes. Therefore, heavy demand for nursing resources has exploded in big cities. In nursing homes, the daily care of the elderly and the disabled is usually undertaken by nursing assistants. By the end of 2015, the number of nursing assistants in China had reached 800,000 and is expected to reach 6 million by the end of 2020.[1] In China, the field of nursing assistants has its own characteristics: (1) > 70% are between the ages of 40 to 50; (2) about 90% are female; (3) most are not well educated, only holding a junior or senior high school diploma; (4) their social and economic status is usually below the middle class, since most transited

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from industrial workers or landless peasants, attracted by better pay in health care industry; and (5) they usually do not have much professional nursing knowledge and care for patients under the limited supervision of professional nurses.

The continuous growth in the capacity of nursing homes prolongs the work hours of nursing assistants and causes extra pressure, which undoubtedly affects their health, quality of life, and work efficiency (Cucciare, Gray, Azar, Jimenez, & Gallagher-Thompson, 2010; Jutras & Lavoie, 1995). During the workday, patients easily build trust with nursing assistants and even form psychological dependence, although nursing assistants do not have professional medical knowledge and are mostly engaged in physical labor, which does not prevent the formation of such relationships. Therefore, health-promoting lifestyles of nursing assistants are crucial for the cultivation of trust and high-quality daily care. On one hand, health-promoting lifestyles can improve nursing assistants' own health status, enabling them to provide high-quality care services. On the other hand, through concerns about their own health status, they can master adequate professional knowledge about heathy lifestyles that also can promote their service quality. In China, nursing assistants' health status faces great risks, because in most cases, one nursing assistant serves seven patients, which is far more than the government recommended three patients (Chen, Xu, Wang, & Yang, 2010; Chen, Zhang, Ni, Yang, & Yang, 2008). Previous studies have shown that the demission rates of nursing assistants in China's big cities are as high as 37% to 59%. One major factor deteriorating their health is the heavy workload (Purk & Lindsay, 2006; Su, Peng, & Zheng, 2009). Because good health is closely related to health-promoting lifestyles, the latter is the basic issue for maintaining or improving individuals' well-being (Lee, Ko, & Lee, 2006; Lima et al., 2011). Thus, to maintain a stable workforce of nursing assistants and improve their care qualities, it is important to study their health-promoting lifestyles. Furthermore, our research can provide valuable information for local governments to introduce sound policies to regulate this emerging health care market.

1.1. Literature review

Health promotion lifestyles refer to the behaviors of individuals, families, communities, and societies forwards the promotion of peace, happiness, and the realization of health potential, that is, the any activity that one may take to achieve a higher level of health, self-realization, peace and happiness (Walker, Sechrist, & Pender, 1987). Individuals with healthy lifestyles can effectively improve their health status and quality of life (Clark et al., 2012). Many studies have investigated the status of health-promoting lifestyles among different groups. Yang and Fu (2013) conducted an integrative review on the health-promoting lifestyles of Chinese nurses and found that the level of their health-promoting lifestyles was mediocre. In their study, the best and the worst performances were in interpersonal relations and physical activity, respectively. Lo (2009) conducted a comparison study on health-promoting lifestyles between middle-aged female family caregivers and middle-aged female non-family caregivers. The comparison results showed that the family caregivers had higher scores than the non-family caregivers in stress management and physical activity. A study conducted by Sisk (2000) found that informal caregivers performed worst in health responsibility, spiritual growth, and nutrition. But their conclusion was challenged by some researchers, whose studies found that females in Mexico outperformed males in physical activity (Díez & Pérez-Fortis, 2010). Huang, Ren-Hau, and Feng-Cheng (2010) studied the relationship between health-promoting lifestyles and age in groups with different occupations. Their results showed that age is positively correlated to the total score of the health-promoting lifestyle in nutrition, health responsibility, spiritual growth, and stress management. Among numerous factors relevant to health-promoting lifestyles, some are more important, such as perceived self-efficacy, health conception, and job satisfaction. Perceived self-efficacy is defined as people's beliefs about their capabilities to produce given attainments

(Bandura, 1997). Individuals who perceive their successful completion of specific health behaviors will significantly affect their participation in health-promoting behaviors (Pender, 2011). Gillis (1993) reviewed the influential factors of health-promoting lifestyles between 1983 and 1991. The results showed that perceived health behavior self-efficacy is an important predictor of the health-promoting lifestyle. The higher the perceived health behavior self-efficacy, the higher the level of health-promoting lifestyles. Health conception refers to an individual's understanding and cognition of the meaning of health, and by understanding the individual's perception of the meaning of health, it helps to understand the motivations of the choices of behaviors (Laffrey, 1986). Frank-Stromborg, Pender, Walker, and Sechrist (1990) studied the influential factors of health-promoting lifestyles in 385 cancer patients and revealed that health conception is positively correlated to health behaviors. Job satisfaction is an individual's subjective experience of his or her physical and psychological feelings and the work environment (Weiss, Dawis, & England, 1967). Sisk (2000) reported that caregivers who perceive more recreation time, personal freedom, and camaraderie with those being cared for find it easier to practice health-promoting behaviors. To the best of our knowledge, this is the first study investigating the health-promoting lifestyles and current health status of nursing assistants in China.

1.2. Study aims

The aims of our study are to (1) assess health-promoting lifestyle status among nursing assistants in China and (2) determine the predictable factors of nursing assistants' health-promoting lifestyles.

2. Theoretical background

This study adopts the Health Promotion Model (Pender, 2011; Sakraida, 2010) as its theoretical framework. As Fig. 1 shows, the Health Promotion Model provides a structure to explain the relationship among characteristics and experiences, behavior-specific cognitions and affects, and behavior outcomes. The characteristics and experiences include prior related behaviors and personal factors that can directly or indirectly affect behavioral outcomes. The behavior-specific cognitions and affects are the most important sources of individuals' motivations to maintain or perform healthy behaviors, which include constructs of perceived benefits, perceived barriers, perceived self-efficacy, activity-related affects, situational influences, and interpersonal relations. The behavior outcomes of the Health Promotion Model are health-promoting behaviors that are desired to achieve positive health outcomes. Based on the Health Promotion Model, this study was performed to establish the theoretical framework of the health-promoting lifestyles in nursing assistants. Perceived barriers and perceived benefits are important parts of the Health Promotion Model. However, at present, there are no mature, objective, and standard scales for measuring them. Designing new scales for these variables is beyond the scope of this study. Thus, we simply omitted these two variables as did many previous health-promoting lifestyle-related studies.

3. Method

3.1. Study design

This is a cross-sectional descriptive design to investigate the levels of health–promoting lifestyles in nursing assistants in China and explore influential factors, including demographics, perceived health behavior self-efficacy, health conception, and job satisfaction.

3.2. Participants and setting

A convenience sample of 285 nursing assistants was recruited from 4 nursing homes in Hangzhou. Because Hangzhou is one of the most
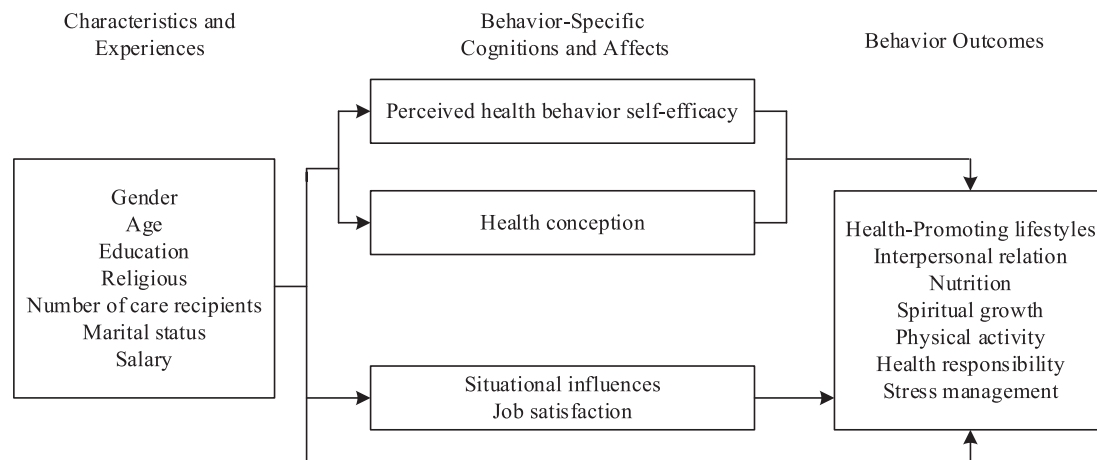
Fig. 1. The theoretical framework of this study.

developed cities in China, the research outcomes derived from this sample are representative. The nursing homes are all institutions for general elderly populations. The daily operations of these nursing homes follow the guidelines and restrictions formulated by the Municipal Civil Affairs of Hangzhou. The monthly incomes of the nursing assistants working in these four institutions are similar. Their monthly income consists of a basic salary and overtime bonuses, which also follow the government guidelines. Although the numbers of beds in these four nursing homes are 2000, 1785, 450, and 152, respectively, their care-to-bed ratios are almost identical (1:7–8). In this study, the inclusion criteria satisfy (1) nursing assistants who provide care and assistance to the elderly, (2) who continually worked over three months, and (3) who voluntarily participated in our investigation.

3.3. Sample size

We used a set of questionnaires including a total of 25 variables: a demographic questionnaire (eight items), the Self-Rated Abilities for Health Practice Scale (four dimensions), the Health Conception Scale (four dimensions), the Health-Promoting Lifestyle Profile II (six dimensions), and the Minnesota Satisfaction Questionnaire (three dimensions). According to Kendall's simple sample size calculation method, the sample size was obtained using the number of variables multiplied by 10, that is, including approximately 250 nursing assistants. Finally, according to the potential loss rate of 20%, we recruited 300 participants from different nursing homes in Hangzhou.

3.4. Instruments

This study was a questionnaire survey. Five questionnaire tools were utilized as follows. (1) A demographic questionnaire was used to collect individual information, including gender, age, education, spouse, salary, religion, number of care recipients, and years of work. (2) The Chinese version of the Self-Rated Abilities for Health Practice Scale (SRAHPS) was developed by Becker, Stuifbergen, Oh, and Hall (1993) and reported Cronbach's α for the scale range from 0.86 to 0.87. It was used to assess an individual's ability to perform health behaviors. The scale includes 28 items that are classified into four dimensions: health responsibility (seven items), exercise (seven items), nutrition (seven items), and psychological well-being (seven items). (3) The Chinese version of the Health Conception Scale (HCS) was developed by Laffrey (1986) and reported Cronbach's α for the scale range from 0.72 to 0.76. It was used to assess to the health conception. The scale also includes 28-items that can be classified into four dimensions: clinical (seven items), role/functional performance (seven items), adaption (seven items), and eudemonistic (seven items). (4) The Chinese version

of the Health-Promoting Lifestyle Profile II (HPLPII) was developed by Huang and Chiou (1996) and reported Cronbach's α for the scale range from 0.79 to 0.87. It was used to measure the frequency of engagement in health-promoting behaviors. The scale includes 52 items that can be classified into six dimensions: health responsibility (nine items), interpersonal relations (nine items), spiritual growth (nine items), nutrition (nine items), stress management (eight items), and physical activity (eight items). (5) The Minnesota Satisfaction Questionnaire (MSQ) was developed by Weiss et al. (1967) and reported Cronbach's α for the scale range from 0.81 to 0.92. It was used to measure an individual's general attitude about work. The scale includes 20 items that can be classified into three dimensions: intrinsic satisfaction (12 items), extrinsic satisfaction (six items), and general satisfaction (two items).

3.5. Data collection and analysis

We recruited participants strictly according to the inclusion criteria described in Section 3.2. Before the investigation started, we informed the nursing assistants about the purpose, contents, and significance of the investigation. Only after obtaining the participants' consent did we start to collect data. This investigation used face-to-face and one-on-one interviews to collect data. Those who understood the meanings of the questionnaire items were encouraged to complete them independently. For those with obstacles to reading and understanding, we explained the questions face-to-face and asked them to complete the questionnaires under our supervision. Once the questionnaire was completed, we immediately collected them and checked the answers. If some items were unanswered or had obvious logical errors, we asked the nursing assistants to do them again as soon as possible. The questionnaires were collected by the first author of the paper from March 2016 through December 2016. Before the questionnaire survey started, the author carefully studied the questionnaire items to ensure that all entries were accurately and consistently interpreted and understood.

Two researchers used EpiData (version 3.0) to build a database. The collected data were analyzed using SPSS (version 20.0). The demographic characteristics and the health-promoting lifestyles of the participants were assessed in terms of percentages, medium, and interquartile range. The differences in the health-promoting lifestyles with respect to the participants' demographic characteristics were analyzed using the Mann-Whitney *U* test and the Kruskal-Wallis H test. The associations among perceived health behavior self-efficacy, health conception, job satisfaction, and health-promoting lifestyles were analyzed using Spearman's correlation coefficient. A multiple regression analysis was performed to identify the factors that can affect the health-promoting lifestyles of the participants.

Table 1

Demographic characteristics and health-promoting lifestyles scores of the investigated nursing assistants (N = 285).

Characteristic	N (%)	M (Q)	F/z
Gender			− 4.439**
Male	29 (10.2)	105.5 (8)	
Female	256 (89.8)	115 (13)	
Age			6.043
≤ 40	26 (9.1)	113 (12)	
40–50	210 (73.7)	115.5 (14)	
≥ 50	49 (17.2)	112 (10)	
Education			35.591**
Primary and below	116 (40.7)	111 (13)	
Junior	129 (45.3)	116 (12)	
Senior and above	40 (14.0)	120 (24)	
Spouse			− 0.183
Yes	266 (93.8)	113.5 (13)	
No	19 (6.2)	114 (16)	
Religion			− 9.009**
Yes	62 (21.8)	122.5 (9.5)	
No	223 (8.2)	111 (12)	
Number of care recipients			9.209**
1–2	61 (21.4)	110 (11)	
3–6	80 (28.1)	116 (13)	
≥ 7	144 (50.5)	120 (14)	
Salary			5.067
< 3000	123 (43.2)	114 (7)	
3000–4000	147 (51.6)	115 (10)	
> 4000	15 (5.2)	115 (8.25)	
Years working			1.936
≤ 1	50 (17.5)	113 (14)	
2–5	122 (42.8)	115 (14)	
≥ 6	113 (39.8)	114 (14)	

M (Q) represents median (interquartile range).

  ** Represents *p-value* < 0.01.

3.6. Ethical considerations

Before the investigation started, we explained to the participants the purpose, contents, and significance of this study. Then, we told them how to correctly complete the questionnaires. We also informed them that their participation was completely anonymous and voluntary. We promised that the collected data were only going to be used in this study and would never be delivered to any other third party without the participants' permission. We also promised that the collected data were protected to the maximum extent in case of accidental disclosure.

4. Results

4.1. Participant characteristics

We distributed the questionnaires to 300 nursing assistants interested in the study and received 285 effective responses (a 95.0% response rate). Table 1 shows the demographic characteristics of the investigated nursing assistants. Of the 285 participants, 10.2% were male, 21.8% were religious, 5.2% had monthly incomes exceeding 4000RMB, and fewer than 15% had high school diplomas or advanced education. The majority of the participants (> 50%) cared for seven or more elderly people each workday. > 70% of the participants were 40 to 50 years old.

4.2. Scores of nursing assistants' health-promoting lifestyles

Table 2 shows the scores of the nursing assistants' health-promoting lifestyles. When we used HPLP-II to measure their levels of health-promoting lifestyles, the total score was 114 (13). Among all six dimensions evaluated, there were very high sores in interpersonal relations and health responsibility, and lower scores in physical activity.

Table 2

Scores of the health-promoting lifestyles of the investigated nursing assistants.

Dimension	Score range	Score	Item score	Rank
Health responsibility	9–36	20 (3)	2.22 (0.33)	2
Interpersonal relations	9–36	24 (4)	2.67 (0.44)	1
Spiritual growth	9–36	18 (4)	2.00 (0.44)	5
Nutrition	9–36	19 (3)	2.11 (0.33)	4
Stress management	8–32	17 (5)	2.13 (0.63)	3
Physical exercise	8–32	15 (2.5)	1.88 (0.32)	6
Total score	52–208	114 (13)	2.19 (0.25)	

Table 3

Scores of three scales of the investigated nursing assistants.

Scale	Item score range	Item score	Scale score range	Score
SRAHPS	0–4	1.71 (0.64)	0–112	48 (18)
HCS	1–6	4.57 (0.29)	28–168	128 (8)
MSQ	1–5	2.7 (0.38)	20–100	54 (7.5)

4.3. Scores of three variables of the investigated nursing assistants

Table 3 shows the scores of the three scales of the study subjects. We used SRAHPS, HCS, and MSQ to measure the levels of perceived health behavior self-efficacy, health conception, and job satisfaction, respectively. The total scores of the three variables were 48 (18), 128 (8), and 54 (7.5), respectively. All were at the moderate level.

4.4. Univariate analysis of health-promoting lifestyles

We applied a univariate analysis to the collected data. The health-promoting lifestyles scores had significant differences ($p < 0.01$) in some discontinuous variables: gender, number of care recipients, level of education, and religion. Female nursing assistants were more likely to perform health-promoting lifestyles. Religious nursing assistants scored better on health-promoting lifestyles than the non-religious ($p < 0.01$). The nursing assistants with higher education levels performed better than those with lower education levels. The greater the number of care recipients, the worse the health-promoting lifestyles.

Spearman's rank correlation coefficients for the continuous variables are shown in Table 4. The health-promoting lifestyles scores appear significantly positively correlated with respect to perceived health behavior self-efficacy ($r = 0.564$, $p < 0.01$), health conception ($r = 0.186$, $p < 0.01$), and job satisfaction ($r = 0.181$, $p < 0.01$).

4.5. Multiple regression analysis of influential factors of health-promoting lifestyles

The independent variables used in the analysis were gender, education, religion, number of care recipients, perceived health behavior self-efficacy, health conception, and job satisfaction. The dependent variable was health-promoting lifestyle. Before conducting the multivariate regression analysis, we tested the residual normality and variance homogeneity. The shapes of the normal probability plot and scatter plot showed that the residual conformed to a normal distribution and the variance was homogenous, meeting the prerequisite of the

Table 4

Spearman's rank correlation coefficients on three continuous variables (N = 285).

Continuous variables	Health-promoting lifestyle
Perceived health behavior self-efficacy	0.564**
Health conception	0.186**
Job satisfaction	0.181**

  ** Represents *p-value* < 0.01.

Table 5
Analysis of significant variables using multiple linear regression.

Variable	b	Sb	β	t	p
Constant	110.073	2.803		39.275	0.000
Gender	− 4.867	1.401	− 0.155	− 3.473	0.001
Junior	1.097	0.896	0.142	1.224	0.222
Senior and above	3.891	1.392	0.057	2.795	0.006
Religion	7.137	1.003	0.329	7.113	0.000
Number of care recipients	− 2.835	0.534	− 0.239	− 5.308	0.000
Perceived health behavior self-efficacy	0.228	0.036	0.308	6.263	0.000

Gender (female = 0, male = 1); religion (no = 0, yes = 1).

multiple regression analysis. The results of the multiple regression analysis are shown in Table 5. Finally, gender, education, religion, number of care recipients, and perceived health behavior self-efficacy were included in the multiple linear regression model, which accounted for 48.4% of the variance in health-promoting lifestyle ($R = 0.699$, $R^2 = 0.484$, $F = 42.329$, $p = 0.000$).

5. Discussion

The total score of the health-promoting lifestyle scale was 114 (13), which is a medium level. This result is similar to the results of other studies on middle-aged urban men (Long, 2011) and middle-aged menopausal women (Cui & Li, 2009), which indicates that the level of the health-promoting lifestyles of nursing assistants is not ideal, with much room for improvement. In our study, 9.1% of the nursing assistants were under age 40, 17.2% were over age 50, and the remaining 73.7% were between 40 and 50. This age distribution is consistent with the phenomenon that nursing assistants in China are generally older. Middle-aged people usually bear heavy responsibilities from both family and society. They not only need to raise their children and support their parents, but also have to meet the requests from their managers, recipients being cared for, and the recipients' family members. In short, most work under great pressure. As the aging population in China's society keeps increasing and the family structure dramatically changes, the shortage of nursing assistants has become increasingly serious in recent years. More nursing assistants have to deal with very heavy workloads in nursing homes. Facing high-intensity work and increasing income, they are forced or choose to ignore their own physical and mental health.

The nursing assistants in this study exhibited the best performance on interpersonal relations and the worst performance on physical activity. This might be related to the nature of their work. Health care is a cumbersome, complicated, and repetitive work that must carefully deal with interpersonal relations. Obviously, it will definitely facilitate their daily work and improve their efficiency if nursing assistants can maintain good relationships with their recipients. We usually use the care-to-bed ratio to measure the workload of nursing assistants. The Hangzhou Civil Affairs Bureau provides a reference standard of this ratio for local nursing homes, for the healthy elderly, the ratio should be 1:(6–7) and for the sick elderly, it should be 1:(2–3) (Chen et al., 2008; Chen, Xu, et al., 2010). However, our study found that the care-to-bed ratio in the nursing homes in Hangzhou was < 1:7 on average. That is, the vast majority of nursing assistants have to prolong their work hours to complete their daily nursing work. In our investigation, we found that about 90% of nursing assistants work > 12 h a day and 66.7% work > 17 h a day. Compared to other countries, the workloads of nursing assistants in China is much heavier. For example, nursing assistants in Japan work 8.5 h a day on average (Song, 2016) and in the United States they usually work < 8 h a day (Tak, Sweeney, Alterman, Baron, & Calvert, 2010). Therefore, nursing assistants hardly have spare time to exercise. In addition, nursing activities usually include life care, rehabilitation care, and technical care, which all involve a great deal of physical exertion. A previous study (Hang & Shi, 2016) reported that 77.5% of nursing assistants deemed that their work involved heavy physical exertion and 13.7% said that their work involved severe physical exertion. However, physical labor does not equal physical exercise. The latter is a structured, planned physical activity that can enhance the physique of individuals and release their work pressure (Powell, Paluch, & Blair, 2011). However, our study found that some nursing assistants usually confused the two. Therefore, it is challenging for nursing assistants to reduce their physical labor and increase their exercise habits.

A multiple regression analysis showed that gender, education, number of care recipients, and perceived health behavior self-efficacy can serve as predictors of nursing assistants' health-promoting lifestyles. A difference analysis showed that the scores of the health-promoting lifestyles revealed significant differences ($p < 0.05$) with respect to the factors of gender, number of care recipients, level of education, and religion. Female nursing assistants are more likely to perform health-promoting lifestyles than males. This may be related to the fact that women often play the role of family caregiver over the long term (Park et al., 2012; Tang, Liu, Lai, & McCorkle, 2005; Wang, Shyu, Chen, & Yang, 2011), so they are more experienced and skilled in caring for the elderly and also have less work stress, which results in female nursing assistants having more time to enjoy health-related behaviors. Religion is another important predictor of health-promoting lifestyles, which had already been reported in previous studies (Cyphers, Clements, & Lindseth, 2016; Rew, Arheart, Thompson, & Johnson, 2013). Religious people regularly attend religious services. It is easy for them to establish an intimate relationship with the congregation (Homan & Boyatzis, 2010), so they can obtain more support and help. In addition, religious activities can release stress through prayer and meditation. The number of care recipients obviously has a negative impact on the level of health-promoting lifestyles of nursing assistants. An increase in the number of care recipients will raise individuals' care burdens. They have to extend their work hours to complete care tasks, directly leading to fatigue and leaving them no time and strength to focus on health behaviors. The analysis also showed that the level of education is another major influential factor on health-promoting lifestyles. Accordingly, the nursing assistants who had higher perceived health behavior self-efficacy tended to have a deep involvement in health-promoting lifestyles. This result is consistent with previous studies (Chen, Wu, Hwang, & Li, 2010; Fisher & Kridli, 2014; Tucker, Butler, Loyuk, Desmond, & Surrency, 2009), where the increase in individual self-efficacy or an individual's ability to perceive their achievement of completed health behaviors will enhance their enthusiasm for engaging in health-promoting behaviors. When nursing homes design intervention measures for nursing assistants, they can focus on improving their perceived health behavior self-efficacy, enhancing their beliefs about executing health behaviors, and eventually promoting the formation of health-promoting lifestyles. Finally, health conception and job satisfaction were positively correlated to the level of health-promoting lifestyles, but were not entered into the regression model.

6. Conclusion and future work

The level of health-promoting lifestyles is medium among nursing assistants in China. Predictors of health-promoting lifestyles include gender, religion, education, number of care recipients, and perceived health behavior self-efficacy. Nursing homes should pay sufficient attention to the correction factors and cognitive-perceptual factors that impact the health-promoting lifestyles of nursing assistants. A great deal of effort can be paid to increase the level of health-promoting lifestyles. First, nursing homes should increase wages in order to facilitate the recruitment of new employees and alleviate the workload of current workers. Second, nursing homes should design and implement more appropriate day-and-night work schedules to ensure their employees get adequate rest. Third, nursing homes should focus on

strengthening the perceived health behavior self-efficacy of nursing assistants, improving their self-health management capability, and helping them attain health-promoting lifestyles.

In this study, both the origin of the sample (involving only nursing assistants working in Hangzhou) and the non-probabilistic convenience sampling method prevented the generalization of the fitted regression model. Furthermore, the variables of gender, religion, number of care recipients, perceived health behavior self-efficacy, health conception, and job satisfaction altogether contributed only 48.4% to the explanation of the results. This indicates that there are still other influential factors. In the future, we will increase the investigated elements in different cities, adopt a more complicated sampling method, and involve more influential factors to obtain a more comprehensive analysis.

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