

Original Paper

The Relationship Between Self-efficacy and Health-promoting Lifestyle in Students



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ABSTRACT

Introduction: Health-promoting lifestyle is an important determinant of health status and has been identified as a major factor in maintaining and promoting health. Self-efficacy is a psychosocial factor that promotes health.

Objective: This study aimed to determine the relationship between self-efficacy and health-promoting lifestyles in students.

Materials and Methods: The present study is a cross-sectional analysis. The research population included all students studying at universities in Zanjan City, Iran. The sampling is done by census method at the University of Medical Sciences, and cluster random method at non-medical universities among senior students who entered the study if they wish to participate. Data collection tools included demographic information questionnaires, generalized self-efficacy scale, and Health-Promoting Lifestyle Profile 2 (HPLPII). The obtained data were analyzed using descriptive and inferential statistics, including the Pearson correlation coefficient test, and linear regression analysis.

Results: A total of 1103 students participated in this study, with a Mean±SD self-efficacy of 41.82±9.76, and a Mean±SD health-promoting lifestyle of 2.53±0.40. The Pearson correlation coefficient test was a significant relationship between self-efficacy and health-promoting lifestyle ($r=0.081$, $P=0.007$), and its three subgroups included nutritional habits ($r=0.082$, $P=0.006$), spiritual growth ($r=0.070$, $P=0.019$), and interpersonal communication ($r=0.073$, $P=0.016$), and the three subgroups of stress management, physical activity, and health responsibility were not significantly associated with self-efficacy. Multivariate linear regression analysis showed self-efficacy ($\beta=0.003$, 95%CI: 0.001-0.006, $P=0.006$), age ($\beta=0.007$, 95%CI:0.001-0.014, $P=0.033$), and gender ($\beta=0.050$, 95%CI= 0.001-0.100, $p=0.046$), respectively, and was associated with a health-promoting lifestyle.

Conclusion: According to the results of the study, there was a very weak relationship between self-efficacy, health-promoting lifestyle, and self-efficacy as a poor predictor of health-promoting lifestyle in students.

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Highlights

- Self-efficacy is one of the sociopsychological factors that lead to health promotion.
- Health-promoting lifestyle is one of the most important determinants of health status, which has been identified as a major factor in maintaining and promoting health.
- There was a direct relationship between self-efficacy and health-promoting lifestyle and its three subgroups, including eating habits, sociopsychological well-being, and interpersonal relationships.

Plain Language Summary

Self-efficacy is a verdict of one's ability to perform one's actions and is an important predictor of one's intention to perform health behaviors and the ability to adopt healthy patterns that are effective in maintaining and promoting health. Health-promoting behaviors are usually formed during adolescence and youth. Understanding the factors that affect people's adaptation to healthier behaviors, and reducing risky behaviors is especially important. Therefore, identifying the relationship between self-efficacy as an effective factor in changing and maintaining behavior is very important. This study aimed to determine the relationship between self-efficacy and health-promoting lifestyle in students and the results showed that self-efficacy was directly related to health-promoting lifestyle and its three dimensions, including nutritional habits, sociopsychological well-being, and interpersonal relationships.

Introduction

Self-efficacy is a verdict of one's ability to perform a specific action and is an important predictor of people's intention to perform healthy behaviors and the ability to adopt healthy patterns [1]. Beliefs about self-efficacy affect health in two ways: First, such beliefs play an effective role in adapting to new health behaviors, initiating health behaviors through stopping unhealthy behaviors, or harmful habits, and maintaining behavioral changes in facing with challenges and problems; second, self-efficacy beliefs also affect several biological processes that in turn affect health and disease [2]. Self-efficacy is a psychosocial factor that promotes health [3]. Behaviors that promote health are the beliefs and activities that people do to stay healthy and prevent diseases [4]. Health-promotion lifestyle is an important determinant of health status and has been identified as a major factor in maintaining and promoting health [5]. Health-promoting behaviors are usually formed during adolescence and youth [6]. Youth and young adults are increasingly exposed to risky behaviors associated with epidemiological and socioeconomic transition, especially in middle- and low-income countries [7].

The results of a study showed that self-efficacy can identify people who are at risk for unhealthy behaviors [8]. Other studies have reported that self-efficacy as a perceptual-cognitive factor is strongly associated

with health-promoting behaviors [8-10]. In the study of Mohammad Alizadeh, the variable of self-efficacy was recognized as one of the influential factors on health-promoting behaviors in adolescents [11]. The results of some other studies have also been associated with self-efficacy and a healthy lifestyle [12, 13].

It should be noted that university students are more likely to engage in risky health behaviors, such as low physical activity, stress, and poor eating habits, which proved to affect health [14, 15]. Therefore, it is important to identify the relevant factors that affect students' adaptation to healthier behaviors and reduce risky ones [16]. Today, it is believed that to be successful in changing behavior and promoting good health, individuals must be able to overcome the barriers to change them [17]. Therefore, identifying the relationship between self-efficacy and health promotion can provide the foundation and guarantee the success of related educational programs [12]. Because the studies that have examined the relationship between self-efficacy, and health-promoting lifestyle, as well as significant growth of the country's student population in recent years, have been limited [18]. The present study was conducted to determine the relationship between self-efficacy and health-promoting lifestyle in students.

Materials and Methods

The present study was a cross-sectional analysis. The research community included all students studying at universities in Zanjan City, Iran, sampling was carried out from November 1, 2016, to May 31, 2017. The students of the University of Medical Sciences entered the study by the census method, and the students of the non-medical universities entered the study due to their large number of multistage sampling methods, then, in each faculty, the samples were selected from the fields of study at random. The sample size was assumed to be 50% of students with appropriate self-efficacy, including $\alpha=0.05$, $Z_{(0.975)}=1.96$, $P=0.5$, $d=0.05$ and design effect=1.8, 680 subjects were estimated for non-medical universities ($n=680$). Also, taking into account the total number of senior students of Zanjan University of Medical Sciences ($n=540$), the sample size was calculated to be 1220 people in total.

The inclusion criteria were as follows: being a senior (last year of study), non-chronic illness, and willingness to participate in the study. Data collection tools included three questionnaires: Demographic information questionnaire, generalized self-efficacy scale questionnaire, and Health-Promoting Lifestyle Profile Questionnaire 2 (HPLPII). The general self-efficacy questionnaire was designed by Sherer et al. in 1982 and includes 17 questions in various ranges such as not giving in to problems, dealing with problems, achieving goals, and performing activities. The self-efficacy questionnaire scoring method is given a score of 1-5 for each item (totally disagree, disagree, have no opinion, agree, totally agree). The scores of items 1, 3, 8, 9, 13, and 15 get scores from 5 to 1 and the rest of the items get scores 1-5. This scale has a maximum score of 85, and a minimum score of 17. Higher scores indicate higher self-efficacy, and vice versa [19].

The health-promotion lifestyle questionnaire has 52 items with 6 subcategories: Health responsibility (9 questions), physical activities (8 questions), nutritional habits (9 questions), spiritual growth (9 questions), interpersonal communication (9 questions), and stress management (8 questions). Each question has 4 answers of never (1) sometimes (2) usually (3), and always (4). The minimum and maximum average score acquired for the overall score of the lifestyle and its subgroups are between 1 and 4. For this study, the psychometric versions of the health promotion behavior questionnaires [20], and the Sherer's general self-efficacy [21] were used. After explaining the objectives of the study and completed the data collection questionnaires, the students with the admitted criteria entered the study.

The subjects were ensured of the confidentiality of the information and then the informed consent form was completed by them. Questionnaires that were not fully completed were excluded and finally, the data of 1103 questionnaires were analyzed. The obtained data were analyzed using descriptive and inferential statistics in SPSS V. 21. The Kolmogorov-Smirnov test was used to determine whether the data distribution was normal. The Pearson correlation coefficient test and linear regression analysis were used to investigate the relationship between self-efficacy with health-promoting lifestyle, predicting the effect of self-efficacy, and demographic factors on the health-promoting lifestyle.

Results

The Mean \pm SD age of the students was 23.99 \pm 4.09 years. Most students were single (82.5%); 48% were female and 52% were male. Students' demographic characteristics are presented in Table 1. The Mean \pm SD health-improving lifestyle score of the students was 2.53 \pm 0.40. Their Mean \pm SD self-efficacy score was 41.82 \pm 9.76. Based on the Pearson correlation coefficient test, there was a significant relationship between self-efficacy, and health-promoting lifestyle ($r=0.081$, $P=0.007$) and 3 subgroups of nutritional habits ($r=0.082$, $P=0.006$), spiritual growth ($r=0.070$, $P=0.019$), and interpersonal communication ($r=0.073$, $P=0.016$). Moreover, 3 subgroups of stress management, physical activity, and health responsibility were not significantly associated with self-efficacy (Table 2).

Analysis of multivariate linear regression showed that among self-efficacy and demographic factors, self-efficacy, age, and gender were related to health-promoting lifestyle respectively so that for each increase in self-efficacy and age of the student, the health-promoting lifestyle score respectively increases to 0.003 ($\beta=0.003$, 95%CI:0.001-0.006, $P=0.006$) and 0.007 ($\beta=0.007$, 95%CI:0.001-0.014, $P=0.033$). Also, for female sex, the health-promoting lifestyle score increases by 0.062 ($\beta=0.050$, 95%CI:0.001-0.100, $P=0.046$) (Table 3).

Discussion

Based on the study results, there was a statistically significant relationship between self-efficacy with nutrition subgroups, sociopsychological well-being, interpersonal relationships, and overall health-promoting lifestyle scores, but the relationship was very weak. The results of Bakoui's study also showed that the average health-promoting lifestyle scores and subgroups in students with high self-efficacy were significantly higher

Table 1. Demographic characteristics of students participating in the study

Variables		No. (%)
Gender	Female	530 (48)
	Man	573 (52)
Marital status	Single	910 (82.5)
	Married	193 (17.5)
Location	Dormitory	437 (39.6)
	With family	594 (53.9)
	With friends	62 (5.6)
	Single	10 (0.9)
Average family income (\$)	≥375	628 (56.9)
	375>	475 (43.1)
Number of family members	<4	362 (32.8)
	4	629 (57)
	>4	112 (10.2)
Mother's education	Illiterate	184 (16.7)
	Diploma or less	664 (60.2)
	Higher than diploma	255 (23.1)
Father's education	Illiterate	112 (10.2)
	Diploma or less	610 (55.3)
	Higher than diploma	381 (34.5)
Mother's employment status	Housewife	907 (82.8)
	Employee	196 (17.8)
	Unemployed	19 (1.7)
Father's employment status	Employee	260 (23.6)
	Worker	50 (4.5)
	busines	515 (46.7)
	Retired	259 (23.5)

Table 2. The relationship between self-efficacy and the overall score and score of health-promoting behaviors

Self-efficacy Health-promoting Behaviors	r	Sig.*
Health responsibility	0.018	0.545
Physical activities	0.047	0.115
Nutritional habits	0.082	0.006
Spiritual growth	0.070	0.019
Interpersonal communication	0.073	0.016
Stress management	0.025	0.406
Total	0.081	0.007

* The Pearson correlation coefficient

Table 3. Factors related to the health-promoting lifestyle based on the regression model

Variables	Non-standardized Coefficient	SE	Standardized Coefficient	Statistics T	Sig.	95%CI	
						Lower	Upper
Self-efficacy	0.003	0.001	0.083	2.773	0.006	0.001	0.006
Gender	0.050	0.025	0.062	1.996	0.046	0.001	0.100
Age	0.007	0.003	0.072	2.136	0.033	0.001	0.014

than students with moderate or low self-efficacy [12]. In the study of Mohammad Alizadeh et al., the relationship between self-efficacy and subgroups of social support, physical activity, health responsibility, and nutrition in adolescents was poor [11]. In the study of Binay et al., the mean health-promoting lifestyle score was associated with the mean self-efficacy score in adolescents [22]. In the study of Peker and Bermek, among all related factors, self-efficacy was the strongest predictor of health-promoting lifestyle behaviors [13].

Self-efficacy is an important prerequisite for behavior change. People who are confident in their abilities are likely to actively participate in health promotion programs. A person with low self-efficacy is less likely to try new health behaviors or changes in behavior that have become accustomed to them. Problems with lifestyle changes also seem to require a high level of self-confidence and self-efficacy.

The findings of the present study showed no significant relationship between self-efficacy with stress management sub-groups, physical activity, and health responsibility. In the study of Sung in Korea and Mohammad Beigi in Iran, self-efficacy was not significantly associated with stress management sub-groups and physical activity in students [23, 24]. The results of a study confirmed a significant relationship between self-efficacy and stress levels in students [25] and in another study, self-efficacy played a weak mediating role in response to stress during the students' exam week [26]. Schonfeld's study showed that the role of self-efficacy was not always beneficial in controlling stress and that higher levels of self-efficacy can sometimes lead to increased stress, psychological responses, and decreased performance [27].

The findings of the present study were consistent with the results of the Critchley study, which showed that self-efficacy was not mediated by participation in physical activity changes behavior, and nutritional behaviors [28]. The findings also showed that health-promoting

lifestyle scores were significantly higher in girls than in boys, which were consistent with the findings of the Can and Chen's study [29, 30]. This may be due to social justifications that women have to perform certain tasks in the family including, strengthening relationships between family members, caring for the family, and cooking. The findings also showed a significant relationship between health-promoting lifestyle and age, i.e. in old age, the health-promoting lifestyle score increased, which was consistent with the findings of some studies [29, 31]. Perhaps this is because, with increasing age, awareness increases, and people's attitudes change as a result, which may be effective in improving lifestyle.

Although the study found a weak relationship between self-efficacy, subgroups of eating habits, psychosocial well-being, and interpersonal relationships and overall health-promoting lifestyle scores, one study found that self-efficacy in changing most areas of lifestyle is associated with motivation [32]. Self-efficacy can be a powerful factor in predicting people's motivation and performance over time and through intrinsic motivation, a person can spontaneously work in the environment and achieve self-efficacy beliefs. According to social cognitive learning theory, self-efficacy is directly affected by social reactions [33]. Therefore, it is suggested that variables such as motivation and social factors should be considered in future studies.

One of the limitations of the present study was that cross-sectional studies could not explain changes in health-promoting behaviors over time. Also, because the data were obtained by the self-reporting method, it may have led to the distortion of social desirability bias. In future studies, it is recommended to control, and reduce this bias. Finally, the findings of the present study provided students with information about self-efficacy, health-promoting lifestyle, and the factors affecting it, which can help managers and educational planners in designing educational guidelines to develop health promotion programs and make the universities healthier.

Ethical Considerations

Compliance with ethical guidelines

This study has been approved by the Research Vice-Chancellor of Ethics Committee of Zanjan University of Medical Sciences (Code: ZUMS.REC.1393.260). Before collecting the data, the participants in the study were explained about the research objectives. Besides, they were assured that their information would be kept confidential. An informed consent form was completed by the students.

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Authors contributions

Conceptualization: Soheila Abbasi, Soudabeh Mehdizadeh, Mansoureh Sepehrinia and Koroosh Kamali
Manuscript draft preparation: Soudabeh Mehdizadeh and Soheila Abbasi;
Statistical analysis: Koorosh Kamali and review and editing: All authors.

Conflict of interest

The authors declared no conflict of interest.

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