

Factors Affecting Health-Promoting Behaviors of University Students in Jordan

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Abstract

Objectives: To determine health promoting behaviors of university students in Jordan and factors influencing them. **Design and Methods:** A cross-sectional descriptive design was used to recruit convenience sample (n = 525) of university students receiving education from two governmental and one private universities in Jordan. Data were collected between September 2013 and January 2014 by using Health Promoting Lifestyle Profile II. Pender Model provided conceptual framework to guide the study. **Results:** The mean score of Health Promoting Lifestyle Profile of the student was at (127.87 ± 19.91). Significant differences were found between Health Promoting Lifestyle Profile mean score and the mean score of its subscales and student's age, gender, employment status, family income, university type, and faculty type. **Conclusions:** These findings suggest that interventions are needed to enhance the practice of health promoting behaviours. These interventions should focus on demographic variations among university students.

Keywords

Health-Promoting Behaviors, Pender Model, University Students, Demographics

1. Introduction

Health promotion is an important determinant of individual health status which held the individual responsible for his own health. Health promotion behaviors are directed toward achieving a higher level of wellness, personal fulfillment, and self actualization [1]. According to Pender's health promotion model, health-promoting lifestyles include six dimensions: physical activity, nutrition, stress management, health responsibility, interpersonal support and self-actualization [2]. Health related behaviors in young age are important factor that affects the individual risk for non-communicable diseases and other disorders later in life [3]-[5]. Non-communicable

diseases are the leading cause of death and disability worldwide [6]-[8]. In addition to that, non-communicable diseases are responsible for the loss of economic output in developing countries, an estimated US\$ 84 billion of economic production will be lost between 2006 and 2015 if no action taken to reduce the risk of non-communicable diseases [9]. In Jordan, the incidence of non-communicable diseases including diabetes, hypertension, and obesity is increasing rapidly which create a major burden for the society and health care system [10] [11]. On the other hand the connection between lifestyle behaviors such as physical activity and non-communicable diseases is well documented [12]. World Health Organization (WHO) has estimated that the elimination of major risk factors of non-communicable diseases will prevent at least 80% of all heart diseases, stroke, and type 2 diabetes mellitus [6]. Despite the high prevalence and cost of non-communicable diseases, most of these diseases are preventable by simple and affordable ways. Health-promotion is a major strategy to promote health and prevent illness [13].

University students are going through transitional period from childhood to adulthood characterized by physical, psychological, social, and sexual development. Promoting healthy behaviors during this period increase their chance to be healthy adults in the future [4]. Although the benefits of health promoting behaviors are well known, many studies revealed that university students have unhealthy lifestyle, such as physical inactivity, which needs further attention [14]-[19].

In Jordan, previous study conducted by Haddad *et al.* (2004) [20] revealed that first year nursing students obtained low score in Health Promotion Lifestyle Profile (HPLP) subscales and differed significantly in the three subscales of health responsibility, physical activity, and interpersonal relations; from first year Canadian nursing students. Another Jordanian study by Ammouri (2008) [21] revealed that a small percentage of Jordanian adults participated in health promoting behaviors and that demographic factors such as gender, age, and income are important determinant of the individual engagement in the health promoting behaviour. A study by Abu-Mogli *et al.* (2010) [22] that examined the effect of five days education program on type of diet, physical activity and nutritional habit revealed that there was a positive influence of training on improving health behaviors of university students related to the three behavioral categories.

It is evident that promoting healthy lifestyle behaviors among university students is essential to decrease disease risk later in adulthood, thus it is important to investigate their health promoting behaviors. Therefore, this research was conducted to determine the level of university student's engagement in health promoting behaviors and its association with socio-demographic factors.

2. Methods

Design and sample: the target population for the study is university students in Jordan. A cross-sectional descriptive design was used to examine health promoting behaviors of university students. Using G power soft program utilizing Z test indicating descriptive study using $\alpha = 0.05$ two tail level of significance, effect size = 0.2 (low medium), power = 0.8 at least 369 students are needed for this study. A convenience sample of 525 students participated in the study. Participants were included if they were Jordanian university students, agreed to participate, and not disabled or has acute medical conditions that affect their participation in health-promoting activities.

Procedure: participants were recruited from two governmental universities and one private university in Jordan. Data were collected using self-administered questionnaires between September 2013 and January 2014. Data collectors visited humanities, scientific and health faculties and entered different classes after arranging with faculty administrators. In each class, data collectors explained study purpose to students and distributed the questionnaires to students who agree to participate. The questionnaire was distributed to the university students in the class at the beginning of the lecture. Students filled the questionnaire and returned it to the research assistants in the same lecture in a sealed envelope. The researcher provided the research assistants with identical instructions and brief description about the study to explain it to the students before distributing the questionnaire. Prior to data collection, ethical approval was obtained from the Research Committee at the researcher faculty and the Research Ethical Committee at the Deanship of Academic Research at the University where the researcher work. A written informed consent was obtained from each student prior to data collection.

Instrument: the Health-Promoting Lifestyle Profile II (HPLP II) was used to assess Jordanian university students' health-promoting behaviors. The HPLP II was developed by Walker, Sechrist, and Pender [2]. The 52-item summated behavior rating scale employs a 4-point response format (never, sometimes, often, routinely) to

measure the frequency of self-reported health-promoting behaviors in the domains of health responsibility, physical activity, nutrition, spiritual growth, interpersonal relations and stress management. An example of a health responsibility item was “read or watch TV programs about improving health”; an example of a physical activity item was “take part in light to moderate physical activity (such as sustained walking 30 - 40 minutes 5 or more times a week)”; an example of a nutrition item was “choose a diet low in fat, saturated fat, and cholesterol”; an example of a spiritual growth item was “feel I am growing and changing in positive ways”; an example of an interpersonal relations item was “discuss my problems and concerns with people close to me”; and an example of stress management item was “take some time for relaxation each day”. The Arabic version of HPLP II was used. The reliability and validity of the Arabic version was established by previous studies conducted by Haddad *et al.* [23]. In the current study the Cronbach’s alpha coefficient was 0.90 for the total scale and ranged from 0.61 to 0.80 for the subscales. A composite score was obtained as well as individual subscale scores. Demographic characteristics were obtained from participants through a questionnaire that was developed by the author.

Conceptual Framework: Nola J. Pender’s Health Promotion Model (HPM) was used as a theoretical framework for this study. The model was developed in 1982 and revised in 1996 and 2002 [1]. Pender *et al.* [1] hypothesized that there are three determinants of the individual engagement in healthy behavior’s; individual characteristics and experiences, behavior specific cognitions and affect, and situational/interpersonal influences. Individual characteristics include behavioral factors and personal factors. Personal factors (biological, psychological, sociocultural) are general characteristics of the individual that influence health behavior such as age, personality structure, race, ethnicity, and socioeconomic status. Demographic factors are part of individual characteristics that influence health promoting behaviour directly or indirectly through behaviour specific cognition and effects. For better understanding of health promoting behaviours, Pender suggested examining a limited number of these factors at one time. In this study we examined the influence of selected demographic factors on health promoting behaviors of the students which is consistent with the conceptual framework.

Data analysis: data were analyzed using the Statistical Package for Social Science (SPSS) version 17. Preliminary data screening was done prior to the analysis to identify any potential problems and remedy them. Descriptive statistics (Percentage, mean, standard deviation minimum, maximum) were used for demographic and HPLP. Person correlation was used to examine the association between HPLP and age and HPLP and monthly income. Independent sample t-test was used to determine differences in the HPLP according to gender, university and school type, and employment status. Findings were considered statistically significant if the p value was <0.05.

3. Results

A total of 650 students were invited to participate in the study. Finally, 525 questionnaires were returned. The mean age of the students was 20.65 ± 2.42 (range 17 - 35) years and 71.8% (n = 525) of the students were female. The mean family income per month was 820.19 ± 981.25 (100 - 10,000) JD. **Table 1** presents demographic characteristics of study participants.

The mean item score for the total HPLP 127.87 ± 19.91 (range: 53 - 189). The lowest mean in the subscales was for physical activity (16.43 ± 4.98) and the highest for spiritual growth (25.28 ± 4.84). The mean item score for each subscale is presented in **Table 2**.

The demographic characteristics associated with health promoting behaviors were age, gender, family income, university and school type, and employment status (see **Table 3**). A statistical significant negative correlation was found between students’ age and HPLP Scale total score and interpersonal relations subscale. The spiritual growth and stress management subscales were positively correlated with students’ age. Family income was positively correlated with score average of all subscales.

The results of T test analysis revealed that there were significant differences between males and females on health responsibility and interpersonal relations subscales. The means for health responsibility and interpersonal relations subscales were higher for females than males. Employed students had significantly lower means on stress management subscale than unemployed students. Students from governmental universities had higher means on spiritual growth, interpersonal relations, and stress management subscales than students from private universities. Students from health faculties had higher means on health responsibility subscale but lower means on stress management subscale than students from humanities or scientific faculties. No statistical significant

Table 1. Distribution of students' socio-demographic characteristics (n = 525).

Characteristic	Students (N)	Students (%)
Gender		
Male	139	26.5
Female	377	71.8
Grade		
1st year	77	14.7
2nd year	166	31.6
3rd year	141	26.9
4th year	126	24.0
5th year	7	1.4
Marital status		
Single	481	91.6
Married	33	6.3
Divorced	2	0.4
Employment status		
Employed	68	13.0
Unemployed	436	83.0

Table 2. Students health promoting lifestyle profile total and subscale mean scores (N = 525).

Rank order	HPLP and subscales	(\bar{x})	(SD)	(Min)	(Max)	Highest and lowest obtainable score
	Total HPLP score (52 items)	127.87	19.91	53	189	52 - 208
1	Spiritual growth (9 items)	25.28	4.84	9	36	9 - 36
3	Health responsibility (9 items)	21.49	4.66	9	36	9 - 36
6	Physical activity (8 items)	16.43	4.98	8	32	8 - 32
4	Nutrition (9 items)	20.66	4.37	9	35	9 - 36
2	Interpersonal relations (9 items)	24.41	4.51	9	35	9 - 36
5	Stress management (8 items)	19.56	3.87	8	32	8 - 32

HPLP, Health promotion life-style Profile; \bar{x} , mean; SD, standard deviation; min, minimum; max, maximum.

Table 3. Associations and differences of healthy HPLP total and sub scale score with demographic variables (n = 525).

Descriptive feature	Spiritual growth	Health responsibility	Physical activity	Nutrition	Interpersonal relations	Stress management	HPLP total
Age							
r	0.095*	-0.044	-0.061	-0.029	-0.123**	0.160**	-0.133*
p	0.036	0.327	0.177	0.177	0.006	0.000	0.012
Family income							
r	0.777**	0.800**	0.646**	0.726**	0.722**	0.708**	-0.035
p	0.000	0.000	0.000	0.000	0.000	0.000	0.478
Gender							
Male	25.10 ± 4.91	20.50 ± 4.89	16.96 ± 4.78	20.15 ± 4.10	23.66 ± 4.66	19.20 ± 3.79	125.58 ± 19.04
Female	25.38 ± 4.82	21.88 ± 4.56	16.24 ± 5.08	20.84 ± 4.48	24.70 ± 4.44	19.74 ± 3.91	128.82 ± 20.28
t	-0.569	-3.00	1.44	-1.56	-2.309	-1.411	-1.630
p	0.569	0.003*	0.149	0.118	0.021*	0.151	0.104
Employment status							
Employed	25.01 ± 4.76	21.61 ± 4.97	17.55 ± 6.27	20.83 ± 4.01	24.07 ± 4.44	18.33 ± 3.58	127.52 ± 20.71
Unemployed	25.45 ± 4.80	21.55 ± 4.64	16.22 ± 4.79	20.69 ± 4.42	24.62 ± 4.39	19.83 ± 3.90	128.38 ± 19.70
t	-0.707	0.099	1.676	0.250	-0.955	-2.964	-0.331
p	0.480	0.122	0.098	0.802	0.340	0.003*	0.741
University Type							
Governmental	25.43 ± 4.79	21.52 ± 4.60	16.31 ± 4.94	20.58 ± 4.35	24.60 ± 4.53	19.75 ± 3.84	128.24 ± 19.53
Private	23.84 ± 5.04	21.21 ± 5.30	17.52 ± 5.23	21.42 ± 4.62	22.58 ± 3.96	17.78 ± 3.78	124.42 ± 23.15
t	2.245	0.450	-1.652	-1.275	3.058	3.490	1.291
p	0.025*	0.649	0.099	0.203	0.002*	0.001**	0.197
School type							
Health	25.01 ± 4.89	22.05 ± 4.92	16.32 ± 5.25	21.02 ± 4.51	24.27 ± 4.63	19.13 ± 4.01	127.84 ± 21.70
Scientific & human- istic	25.45 ± 4.83	21.15 ± 4.52	16.47 ± 4.84	20.42 ± 4.31	24.49 ± 4.45	19.84 ± 3.78	127.84 ± 18.90
t	-1.011	2.130	-0.334	1.503	-0.551	-2.015	0.003
p	0.313	0.034*	0.739	0.134	0.582	0.044*	0.998

HPLP, Health promotion life-style Profile; *Correlation is significant at the 0.05 level (2-tailed); **Correlation is significant at the 0.01 level (2-tailed).

difference was found between HPLP Scale total score and the subscales and marital status, past medical history, and place of residence.

4. Discussion

The present study focused on various levels of HPLP among university students in Jordan with different demographic characteristics. The total mean score of HPLP obtained in this study was (127.87 ± 19.91). In a study conducted by Hacıhasanoğlu *et al.* [15] and Karadağ & Yildirim [24] in Turkey, the average score for the healthy lifestyle behavior was lower. This difference could be due to the differences in socio-cultural background.

Regarding the HPLP sub-domains, the student in this study scored the highest in spiritual growth. Similar finding was reported in previous studies [14] [17]. The influence of the culture and belief system of Jordan society might help to maintain spiritual growth. Interpersonal relation took the second rank, but physical activity

was the lowest one. Some studies carried in our country and other countries also showed that university students have low scores on physical activity sub domain [20] [22] [25]-[28]. The suggested explanation of this result may be that In Jordan, the commitment to physical activity programs still little, moreover, it is not easy to access exercise centers, and in addition to that the economic factor may be contributed to this finding as most of sport centers charge moderate to high fees. Other potential explanation can be that students are loaded by heavy studying duties at university, and they need extra hours to study at home. Interestingly, other western studies reported similar results [15] [17] [18] [24] [28]-[30].

The present study showed also a significant negative correlation between students' age and HPLP total score, which means that younger students tended to practice healthier life style than older students. Similar results obtained in previous Jordanian study [21]. Regarding the subscales, the results showed that the students' age is positively correlated with the spiritual and stress management subscales. Older students handle stressors effectively may be an indicator of the gradual tolerance of demanding nature of the university life. On the other hand, the students' age is negatively correlated with the interpersonal relation. Inconsistency regarding the relationship between age of the study participants and the sub-domains of HPLP reflected in literature. For instance, a study by Hong [30] found that older students had a significant high level of overall health promotion life style, particularly, in stress management, self actualization, health responsibility, and nutrition domains. In the same line, other studies found that only the mean score of the health responsibility domain increased parallel to the age of participants [15] [17]. More studies are needed to understand the effect of age on health promoting behaviors.

The results of the study reflected a significant positive correlation between family monthly income and the average score of all subscales. This result is consistent with the study of Wei *et al.* [31] which found a significant correlation between Japanese university students' monthly income and interpersonal relations sub domain. Similarly, Can *et al.* [17] showed a statistical significant difference between nursing students' total HPLP and averages of all subscales and their level of income. In addition, a Turkish study by Hacıhasanoğlu *et al.* [15] revealed that the mean total score and sub scores increased as the level of income increase. Contrast results were found in the study of Hong [30]. Now days, Jordan as other countries in the region is affected by the global economic slowdown, which in turn impact the living conditions of the families. Therefore, student from middle and poor classes cannot charge for practicing sport in club, and nourishing food. No statistical significant difference was found between gender and the mean total score for HPLP. This result is similar to those obtained in previous studies [15] [21].

The T-test result of this study indicated that female student significantly have higher scores on healthy responsibility and interpersonal relation than male students .This result can be explained from cultural and societal view that is; in the rearing process in Arab Muslim world, it is expected that female have a paramount role in nurturing and caring for the family members, as well as, strengthening the family ties and relationships than men. This result is in agreement with the previous studies which reported that female students were more skillful in building relations with others than male students [15] [17] [31].

In our study students in health faculties scored higher in health responsibility subscale than students from humanities and scientific faculties. This could be due to the exposure to health promotion material in health faculties. Similar results obtained in previous study by Can *et al.* [17].

Limitations

The limitation of this study may be related to the cross-sectional design that may hinder the ability to infer the causal effect relationship. More studies using longitudinal designs and mixed qualitative and quantitative methods are needed for better understanding of health promotion practices. Convenience sampling method for recruiting the study participants is another limitation; therefore this sample may not be truly representative of the entire population.

5. Conclusion

This study evaluated health promoting behaviors of Jordanian university students and identified the association between health promoting behaviors and selected socio-demographic variables. Based on study findings, it seems that there is a problem in health promoting behaviors of the University students in Jordan. Particularly in physical activity, and stress management sub domains. Furthermore, the health promoting behaviors of the students were determined by age, monthly income, gender, university and school type, and employment status. In

the line of the study results, more emphasis should be directed toward encouraging the student to practice better and healthy life style by continuous integration of health promotion courses in the curriculum of all faculties of the universities. This may help the students to understand the importance of practicing healthy lifestyle behaviors and eventually improve their health practices. Universities should consider the establishment of on-campus exercise facilities in attainable prices to encourage students to exercise especially because they spent a substantial part of their time in the university.

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