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Health Promoting Lifestyle, Perceived Health Competence, Barriers and Benefits Among Nursing Students in Alexandria

Rasha Abd El Hakim Abdou[1] Houaida Anas El Wogoud Helal[2*]
1.Assistant Professor, Community Health Nursing, Faculty of Nursing, Alexandria University.Egypt
2.Assistant Professor. Community Health Nursing, Faculty of Nursing, Alexandria University.Egypt
College of Nursing Jeddah , KSAU-HS . KSA

Abstract
Increased understanding of health practices and greater efforts toward promoting healthy behaviors and wellbeing among youth is essential. ***Objective:*** Assess nursing students' current health promoting behaviors, perceived health competence, benefits and barriers to health promoting activities. The study was carried out at the Faculty of Nursing, Alexandria University. subjects of the study were 300 nursing students during the academic year 2015-2016. Five tools were used for data collection. The first tool was students' basic data structured interview schedule to identify data related to students' personal and socio-demographic characteristics and health status. The second tool was Health Promoting Lifestyle Profile II (HPLP- II) to measure the health promoting behaviors. The third tool was Perceived Health Competence scale to measure the degree to which an individual feels capable of reasonably managing his/her health outcomes. The forth tool was Benefits Assessment Scale to measure the perceived benefits of health promoting behaviors, while the fifth tool was The Barriers to Health Promoting Activities Scale to measure the barriers that keep an individual from taking responsibility for his/her health. Findings of the present study revealed that the majority of the students had fair health promoting lifestyle and health competence level. More than half of the students had high perception of benefits of health promoting behaviors while lack of facilities, bad weather, work overload were among the main perceived barriers against such healthy behaviors. The study concluded that the majority of the students were fair in total health promoting lifestyle; the gender of the students didn't affect their health promoting life style in a significant manner. The vast majority of the students had fair health competence, more than half of the students had high perception regarding the benefits of the health promoting lifestyle. Lack of convenient facilities was the first barrier to health promoting lifestyle.
Keywords: Health promotion, Health competence, Benefits, Barriers, Youth

1. Introduction

Reducing health risks and improving health will increase longevity, improve quality of life and reduce health care costs. Today, therefore, increasing emphasis is placed on health promotion, wellness and self care (Nassar & Shaheen,2014). Health promotion is a process in which individuals increase control over their health. Health promoting behaviors comprise six components including health responsibility, physical activity, nutrition, interpersonal relations, spiritual growth and stress management. These behaviors are part of daily activities of life that impact individual happiness, values and wellbeing (Altun 2008). Adopting such behaviors as part of a lifestyle expresses the human tendency towards self actualization and increases quality of life (Raj, Senjam and Singh 2013).

A good health promoting behaviors depends on the living habits adopted during early years of life. Most of healthy lifelong and unhealthy lifestyle habits are established during adolescence. Therefore, health promoting lifestyle among youth has become a research focus worldwide (Musavian , Pasha, Rahebi , Roushan & Ghanbari 2014). Promoting health in youth is foundation for good health in adulthood. Many of today's and tomorrow's leading causes of death, diseases and disabilities can be significantly reduced by preventing risky behaviors that are imitated during youth years (Ramasubramaniam & Lyengar 2014).

World Health Organization (WHO) pointed that 60% of the quality of an individual's health and life depend on his / her behaviors and lifestyle. Unfortunately, there is a tremendous increase in the prevalence of lifestyle related illness such as diabetes, hypertension and cardiovascular diseases among youth populations. Furthermore, risk factors associated with these diseases, for example, obesity; smoking and sedentary lifestyles are common among youth and might witness a frightening increase in the future (Ansari , Stock & Deeny 2011)

Previous researches indicates that health promoting behaviors is difficult to fully understand without examine the influential factors to such behaviors, which may include social norms, culture, media, environment, in addition to socio demographic factors (Chim 2011, Wang , Ou , Chen &Duan 2011). . Among the strong predictors of health promotion behaviors are perceptions of health status and self efficacy (health competence) as it impels individuals to adhere to behavioral modifications in their lifestyles (Aghamolaei & Tavafian 2013) How the individuals perceive their health status may influence the type of health promoting activities they choose. As perception of good health increases, individuals are more likely to act in ways to achieve and maintain healthy lifestyles (Altun 2008, Rezanejad , Shirazi , Hosseini , Bahadornejad & Shirazi 2013).

For the health of future generations, young people deserve the attention of public health professionals. Increased understanding of their health practices will help in promoting healthy behaviors among this group especially among undergraduate baccalaureate nursing students. (Nassar & Shaheen,2014, Altun 2008).

The nursing students are educated to encourage their clients to engage in health promoting activities to prevent illnesses associated with unhealthy lifestyles, with the main focus being primary prevention. Nursing students as future health care providers will play a key role in health promotion and their behaviors towards health promotion highly influences their health and performance (Chim 2011).

Nursing students are viewed by the public as reliable models that would normally practice health promoting behaviors. However, in reality, they may engage in unhealthy lifestyle behaviors as other youth may do (Al Dossary A, Barriball L 2012).

To achieve their care provider role effectively, nursing students should be equipped with knowledge and skills about health promotion practices during their studying years (Nassar & Shaheen 2014,Chim 2011) . Nursing curriculum covers the concept of health promotion in many courses in order to improve students' awareness of practicing healthy lifestyle. This may ultimately lead to better health outcomes of the students themselves, as well as their clients and the whole community.

Aims of the study

The aims of the study are to:

- Assess nursing students' current health promoting lifestyle, perceived health competence, benefits and barriers to health promoting activities.
- Identify the relation between nursing students' current health promoting lifestyle, perceived health competence, benefits and barriers to health promoting activities.

Research questions:

1. What are the nursing students' health promoting lifestyle, perceived health competence, benefits and barriers to health promoting activities?
2. What are the relation between nursing students' current health promoting lifestyle, perceived health competence, benefits and barriers to health promoting activities?

Materials and Method

Materials:

Research design:

The descriptive design was adopted to carry out this study . Quantitative descriptive research through cross sectional survey was used to obtain information concerning the current status of the phenomena (the health promoting lifestyle of the nursing students as well as their perceived health competence and to find out the benefits and barriers to health promoting activities as perceived by the nursing students)

Setting:

The study was carried out at the Faculty of Nursing, Alexandria University, a governmental Egyptian university. The Faculty of Nursing follows the credit hours system in which the curriculums were distributed along eight semesters over four years. The faculty accept admission of male and female students after completion of their secondary school education. .

Subjects:

Using the proportional allocation method , Four out of eight semester were randomly selected , a random sample of 25% of nursing students enrolled in the selected semesters (first, third, fifth and seventh semesters) during the academic year 2015-2016 were selected to participate in the study.

- The total sample size was 300 nursing students.

Inclusion criteria was the student willingness to participate in the study, with no exclusion criteria.

Tools: In order to collect the required data for the study, the following tools were used:

Tool (I): Nursing Students' basic data structured interview schedule: It was developed by the researchers after reviewing of the recent literatures. It included two parts:

First part: Socio demographic data about the students and their families such as age, sex, place of residence, parents' level of education, occupation, income, marital status and social level which was assessed using Fahmy and El Sherbieny Scale. (13)

Second part: Students' physical health status data: It included data about presence of health problems, used health services and satisfaction about those services.

Tool (II): Health Promoting Lifestyle Profile II (HPLP- II) (14): Description of reliability and validity of tool

It is a self-reported scale developed by Walker, Sechrist and Pender at 1996 to measure health promoting

behaviors. It consists of 52 items using four point response format (1= never, 2= sometimes, 3= often , 4= routinely) to measure the frequency of self-reported health promoting behaviors in 6 different domains; health responsibility (9 items), physical activity (8 items), nutrition (9 items), spiritual growth (9 items), interpersonal relations (9 items) and stress management (8 items).The total score of HPLP-II were generated by summing up the scores of all dimensions resulting in a total score ranges from 52-208, which was distributed as follows;

Subscale	Poor	Fair	Good
Health responsibility	9-17	18-26	27-36
Physical activity	8-15	16-23	24-32
Nutrition	9-17	18-26	27-36
Spiritual growth	9-17	18-26	27-36
Interpersonal relations	9-17	18-26	27-36
Stress management	8-15	16-23	24-32
The total score HPLP-II	52-103	104-155	156-208

Criterion-related validity was indicated by significant correlations with concurrent measures of perceived health status and quality of life (r's = .269 to .491). The alpha coefficient of internal consistency for the total scale was .943; alpha coefficients for the subscales ranged from .793 to .872(14).
In the current study the reliability was tested by Cronbach Alpha coefficient test and r was equal 0.94.
Tool (III): Perceived Health Competence:
It is a self-reporting instrument developed by Smith et al at 1995 to measure the sense of perceived competence, the degree to which an individual feels capable of reasonably managing his/her health outcomes. It consists of 8 items using a 5 point likert scale (1= strongly agree, 2= agree, 3= uncertain, 4= disagree, 5= strongly disagree). The total score ranges from 8 to 32 which classifies as follow;

Low competence	8-15
Moderate competence	16-23
High competence	24-32

Cronbach Alpha Coefficient was used to ascertain the reliability of tool III (r = 0.90)
Tool (IV): Benefits Assessment Scale:
It is a self-reporting questionnaire developed by Murdaugh and Verran at 1987 to measure the perceived benefits of health promoting behaviors. It consists of 12 statements describing benefits of undertaking preventive health behaviors using a 4 points likert scale. Responses range from 1 (strongly disagree) to 4 (strongly agree), giving a total score ranges from 12 to 48, where the higher scores indicates the greater the participants' perceived benefit. Reliability test Cronbach Alpha coefficient , r was 0.79

Tool (V): The Barriers to Health Promoting Activities Scale:
It is a self-reporting instrument developed by Stuifbergen & Becker at 1994. It contains 18 statements, 4 points likert scale (1= never, 2= sometimes, 3= often, 4= routinely) that requests individual to indicate how often the listed barriers keep him/ her from taking responsibility for their health. The total score ranges from 18 to 72, the higher the scores, the greater the perceived barriers. Reliability test Cronbach Alpha coefficient , r was 0.82.

Methods:
After reviewing the recent relevant literature, tool (I) was developed by the researchers. It was validated by juries of (5) experts in the field of Community Health Nursing. Their suggestions and recommendations were taken into consideration. An English version of tools II, III, IV, and V were used. A pilot study was carried out on 30 nursing students in order to ascertain the relevance, clarity and applicability of the tools, test wording of the questions and estimate the time required for the interview. Based on the obtained results, the necessary modifications were done. The questionnaire was distributed to the selected students during their break time between lectures.

- Ethical considerations:

- Ethical approval was obtained from the Faculty of Nursing prior to the conduction of the study after explanation of the purpose of the study. Informed written consents were obtained from the students after brief explanation of the purpose and nature of the research. The anonymity and confidentiality of responses, voluntary participation and right to refuse to participate in the study were emphasized to students. Data was collected by the researchers during the academic year 2015-2016 over a period of 2 months (from November to December 2015).

- Statistical analysis:

The collected data were coded and analyzed using PC with the statistical package for social sciences (SPSS version 20) and tabulated. Frequencies and percentages were calculated. The level of significance selected for this study was P equal to or less than 0.05. It was used as the cut off value for statistical significance

Results:

Table (I): describes the socio demographic characteristics of the nursing students. The results indicates that more than half (58.3%) of the students were females and the rest (41.7%) were males. The age of the students ranged from 18 to 24 years with a mean of 21.09 ± 1.78 years. The table reveals that 27% of the students were enrolled at the first semester compared to 23.3% of them were at the seventh semester. Furthermore, those who were living in urban areas constituted 52.7% of them and less than three quarters (70.0%) of them were living with their families during their study years. Moreover, less than one fifth (19.7%) of the students were working beside their education.

Figure (I): portrays that less than one quarter (24.3%) of the students had chronic diseases like diabetes and only 5% of them perform checkup at regular basis.

Table (II): presents the socio demographic characteristics of the students' families. It was found that the majority (87.0%) of the parents were married. More than one third (34.7%) of the students' fathers and more than one quarter (26.9%) of the mothers had university education. Moreover, the majority (90.9%) of the fathers were working compared to less than half (46.6%) of the mothers. Additionally, around four fifths (80.7%) of the students stated that their families' income were enough as those of middle and high social level constituted 50.3% and 32.3% respectively.

Table (III): shows the students' level of health promoting lifestyle. Regarding health responsibility domain, more than half (54.7%) of the students had fair health responsibility and the rest (45.3%) had poor health responsibility. While, less than two thirds (65.3%) of them were poor in physical activity compared to 34.7% of them who were fair. With respect to nutrition domain, more than one tenth (14.7%) of the students were good and 7.3% of them were poor. Concerning spiritual growth, those students who were fair and good constituted 59.3% and 35.3% of them respectively. Furthermore, equal percentage (45%) of the students was fair and good in personal relations domain. Additionally, only 5% of the students were good in stress management compared to less than one fifth (17.3%) of them were poor. Lastly, the majority (87.7%) of the students was fair in total health promoting lifestyle and the rest (12.3%) of them were poor. Moreover, the same table shows that the mean total score of HPLP-II was 124.07 ± 17.48. The highest mean was observed in spiritual growth domain 25.47 ± 4.58, while, the lowest mean was 14.38 ± 3.20 for physical activity domain.

Table IV: shows that higher mean scores were noticed among female students with respect to health responsibility, nutrition, personal relation, and spiritual growth domains (18.51±3.82, 22.75±4.03, 25.53±4.45, and 25.54±4.03 respectively). On the other hand, male students got higher mean scores in physical activity and stress management domains (14.50±3.19 and 18.42±3.45 respectively) with no statistically significant difference between them.

Figure II: illustrates the perceived health competence of the nursing students. It was found that the vast majority (92.3%) of the students had fair health competence while, a minority of them had poor and good health competence (2.7% and 5.0% respectively).

Figure III: portrays the perceived benefits and barriers to health promoting lifestyle. It was noticed that more than half (53.0%) of the students had high perception regarding the benefits of the health promoting lifestyle and none of them had low perception. On the other hand, those with low barriers perception constituted two fifths (40.0%) of the students compared to one tenth (10.0%) of them who had good barriers perception.

Table V: reveals that lack of convenient facilities was the first barrier to health promoting lifestyle with a mean score of (2.83±0.81), followed by work overload (2.80±1.01), poor service quality (2.57±1.05) and lack of time (2.53±1.06). The least perceived barriers were lack of information (1.92±0.96), lack of support (1.76±0.84), and presence of disability (1.41±0.73).

Table VI: shows the correlation analysis between health promoting lifestyle and perceived health competence, perceived benefits and barriers to health promoting activities. A significant positive correlation was found between health promoting lifestyle and perceived health competence as well as with perceived benefits (P= 0.003 and P= 0.009 respectively). Additionally, a significant negative correlation was noticed between health promoting lifestyle and perceived barriers (P= 0.000).

Table VII: reveals the correlation between mean health promoting lifestyle scores and students' socio demographic characteristics. It was found that the mean health promotion scores did not significantly associate with the students' sex. However, the female students showed higher mean scores (124.08 ± 17.75) than male students (124.06 ± 17.18).

Moreover, the table shows that the lower the students' age, the lower mean health promotion scores as those students aged less than 20 years had the lowest mean scores (122.32 ± 18.49) compared to those students aged from 22 to 24 years (125.43 ± 17.27) with no significant difference noticed between them. Additionally, the mean health promotion scores was the lowest in those students enrolled in the first semester (123.89 ± 17.56) compared to those enrolled in the seventh semester who had the highest mean scores (125.39 ± 17.43), with no significant difference between them.

Furthermore, it was observed from the table that those students lived in urban areas shows higher mean

scores (124.13±17.89) than those living in rural and squatters (123.80±16.73) with no significant difference between them.

The table also reveals that highest health promotion mean scores was encountered among those students who were living with their family during studying (125.29 ± 16.86) with a significant difference between them (P= 0.026). Moreover, it could be observed from the table that health promotion mean score was higher (125.20±16.77) among students' of married parents than unmarried ones (116.54±20.53). The marital status had a significant impact on students' health promoting lifestyle (P = 0.004).

With respect to students' working status, health promotion mean score was higher among working students (125.59 ±18.36) compared to non working students (123.70 ± 17.23). A statistically significant relation was observed between students' working status and health promoting lifestyle (P = 0.016).

The table also illustrates that students with no health problems and those who perform regular checkup had higher health promotion mean scores (125.35±16.45, and 133.27±8.81 respectively). Both students' health problems and regular checkup had a significant impact on their health promoting lifestyle (P = 0.025, and P = 0.036 respectively).

Lastly, the table also reveals that higher health promotion mean score was noticed among those students in high social level (129.29±13.79) compared to those in low social level (120.83±18.69). A significant relation was detected between health promoting lifestyle and students' social status (P = 0.0001).

Discussion:

Health promoting behaviors and healthy lifestyle are valuable approaches for health maintenance. Good health promoting practices depend on the living habits adopted during early years of life especially adolescence as there is a great chance for shaping health behaviors. It is a period where adolescents increasingly make independent choices about their lifestyle and health practices. However, it encompasses a desire for novelty and courage for exploration and experiments with risky behaviors which may lead to development of unhealthy lifestyle. The results of the current study revealed that none of the students had good health promoting lifestyle and the majority of them had a fair style. Similar findings were reported by Tirodimos I et al 2009 , Rezarei M et al 2012 and Karadag M 2010 who found that the majority of the students had fair lifestyle. This could explained by the nature of the nursing study where pressure of work is so sever the much of the students' energy and time are likely to be occupied by their study.

In the same context, the current study found that workload, lack of time and poverty were the main barriers of health promoting lifestyle reported by the students. These findings come in line with those of Phiri L et al 2014 and Sabharwal A 2017.

Regarding the subscale of the HPLP II, the students had the highest mean score on the spiritual growth, which was consistent with the results of Al Kandari F et al 2008 and Nassar O et al 2014. These results reflect the implication of religion on values and beliefs, daily practices and health promoting behaviors of the people especially in the Arabian countries.

Interpersonal relationship and effective communication training are core elements of the nursing education in order to consolidate the student nurses role in health care and reach their full potential as effective communicators and educators. The results of the current study showed that only one tenth of the students had poor personal relationships, which come in line with those of Nassar O et al 2014 and Al Kandari F et al 2008 who found that personal relation was the second domain among the students and the majority of the students had fair scores.

The food consumption pattern of adolescents is of particular concern because they tend to skip meals frequently, eating fast foods and snacks. This may be understood because they eat in the school or university canteen where the service time is short and fixed and the food variety is limited. (24) These could explain why less than one fifth of the nursing students had good scores on the nutrition domain in the current study, which come in line with the results of Keller S et al 2008 and El Ansari W et al 2011 who found that a minority of the students had good nutritional practices.

Additionally, the current study revealed that none of the students had good health responsibility which comes in accordance with the results of Wald A et al 2014 and Chen M et al 2007. Nursing students especially those who reside on campus are less likely to pay attention to their own health than those who live with their parents and are frequently reminded about health practices. In the same line, the current study found that health promoting lifestyle was more prevalent among those students who live with their parents, which was supported by the results of Can G et al 2008 who concluded that unhealthy lifestyle was more encountered among students who lived away from their families during study years.

Moreover, university life adds more stress and requires more independent decisions making by young people. They are also challenged to attain the personal growth and perseverance necessary to cope with life stress and to establish healthy lifestyle. All these are probably reflected in the findings of the present study where nursing students were not doing well enough in stress management domain. Similar findings were reported by

Shaban I et al 2012 and Gurbinder K et al 2011.

Lastly, the nursing students of the current study had the lowest mean scores on the physical activity domain, which come in congruent with those of Wittaypun Y et al 2013 and Peker K et al 2011 who found that a minority of students practiced exercise on regular base. This finding could be explained from the cultural and social context as regular exercise habits are not integrated in the daily living life of the Egyptian people and sports to some extent still considered as leisure activity. Other explanation could be that nursing students have extensive theoretical and clinical schedule, so they may feel exhausted to practice exercises. This explanation could be supported by the current study finding were no time, fell tired and work load were among the barriers to health promoting life style mentioned by the students.

Anticipated benefits and barriers to health promoting behaviors have been shown to affect intentions to engage in and execute the behaviors. Perceived barriers and benefits an individual may could explain why individual do or don't engage in health promoting lifestyle. It determines how a person value health and participate in health care activities. This was portrayed in the current study findings as significant correlations were found between health promoting lifestyle and perceived benefits and barriers, which come in line with the results of Al-Khawaldeh O et al 2014.

How individuals perceive their health may influence the type of health promoting activities they choose. As perception of good health increases, individuals are more likely to act in ways to achieve and maintain a healthy lifestyle. Strong predictors for health promoting practices are perception of health and self-efficacy. (3) The current study showed a significant correlation between perceived health competence and healthy lifestyle, which come in accordance with the results of Bachmann J et al 2016 and Zulkosky K 2009.

Health promoting lifestyle is a multi-dimensional pattern of self-initiated behaviors affected by several factors. Age has been shown to be a positive factor in determining individual's willing to maintain healthy behaviors.(6) In the current study older and senior students were more involved in healthy lifestyle, which could be attributed to health curriculum and health promotion courses provided for senior students that shed the light on importance of adherence to healthy lifestyle. Similar findings were reported by Al Kandari F et al 2008 and Nassar O et al 2014 .

Gender also has been a strong predictor of health protective behaviors. Because women are the primary care givers, they are likely to have influences on their health behaviors and lifestyle. The current study findings revealed that female students were more attentive to health promoting lifestyle, which come in line with the results of Chen M et al 2007 and Karadag M et al 2012.

In the same context, the present study reveals that female students got higher scores in health responsibility, nutrition, spiritual growth and personal relations domains, while male students had higher scores in physical activity and stress management domains. The same results were portrayed by Nassar O et al 2014 and Al-Kandari F 2008.

Access to health care services and satisfaction with its quality has been emerged as an important predictor of health promoting lifestyle. The current study showed that healthy lifestyle was more prevalent among those students of higher social status and who reside at urban areas where access to variety of health services is available. These findings come in accordance with those of Nassar O et al 2014 and Al Kandari F et al 2008.

Having a chronic illness requires continuing medications and ongoing self-management. Chronic illness can add tasks that need adaptation to accompanied complaints and self-care tasks which can influence the quality of life, social participation, self-management and lifestyle. The current study reveals that healthy lifestyle was less prevalent among those students with chronic diseases. In agreement Karadag M et al 2012 and Nassar O et al 2014.

Table I: Distribution of the nursing students according to their socio demographic characteristics:

Students' characteristics	Total N= 300	
	No	%
Sex		
- Male	125	41.7
- Female	175	58.3
Age (years)		
- 18-	63	21.0
- 20-	90	30.0
- 22-24	147	49.0
X ± SD	21.09 ±1.78	
Academic year		
- First	81	27.0
- Second	73	24.3
- Third	76	25.3
- Forth	70	23.3
Family residence		
- Urban	158	52.7
- Rural	113	37.7
- Squatter	29	9.7
Student residence during study		
- With the family	210	70.0
- Away from the family	90	30.0
Work beside education		
- Yes	59	19.7
- No	241	80.3

Figure I: Distribution of the nursing students according to the presence of chronic diseases and regularity of checkup:

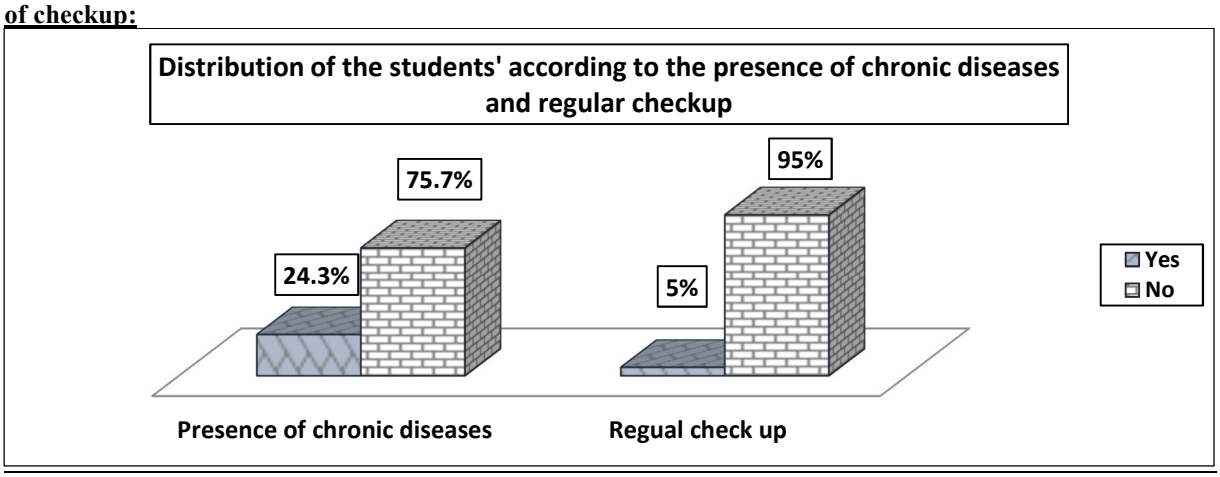

Figure II: Distribution of the nursing students according to their perceived health competence:

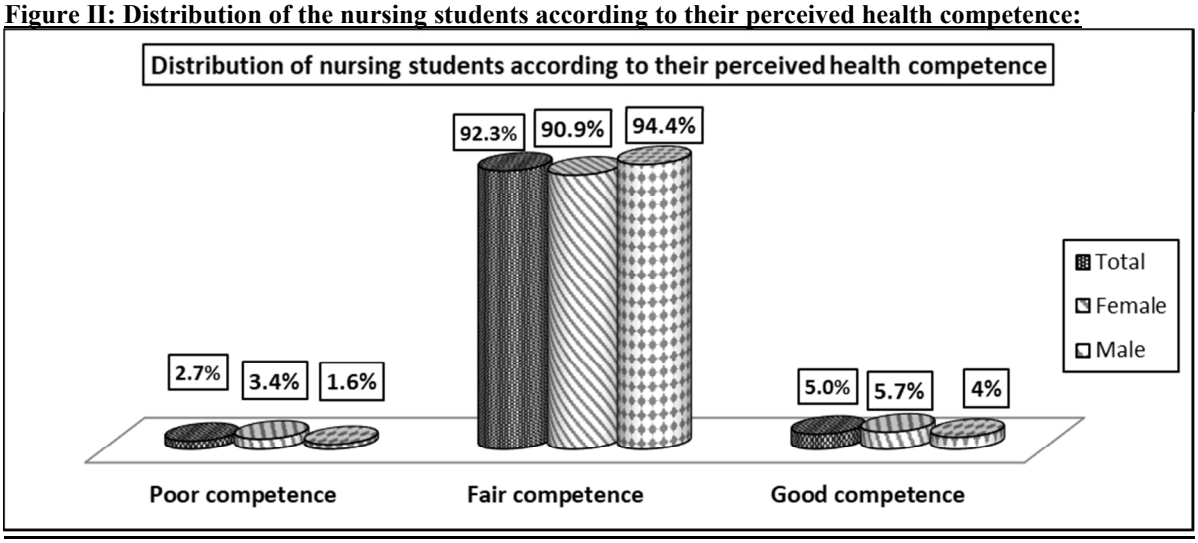

Table II: The distribution of the nursing students according to their families' characteristics:

Students' families characteristics	Total N=300	
	No	%
Parents' marital status		
- Married	261	87.0
- Divorced	18	6.0
- Widowed	21	7.0
Father education	N=285	
- Illiterate/ read & write	15	5.3
- Basic education	94	33.0
- Secondary/technical education	77	27.0
- University education	99	34.7
Father occupation		
- Working	259	90.9
- Not working	26	9.1
Mother education	N=294	
- Illiterate/ read & write	47	16.0
- Basic education	84	28.6
- Secondary/technical education	84	28.6
- University education	79	26.9
Mother occupation		
- Working	137	46.6
- Not working	157	53.4
Family's income	N=300	
- Enough	242	80.7
- Not enough	58	19.3
Family's social level		
- Low	52	17.3
- Middle	151	50.3
- High	97	32.3

Table III: Distribution of the nursing students according to their health promoting lifestyle:

Students' health promotion lifestyle	Level of health promotion						HPLP X ± SD
	Poor		Fair		Good		
	No	%	No	%	No	%	
- Total HPLP score	37	12.3	263	87.7	0	0.0	124.07±17.48
- Health responsibility	136	45.3	164	54.7	0	0.0	18.21±3.90
- Physical activity	196	65.3	104	34.7	0	0.0	14.38±3.20
- Nutrition	22	7.3	234	78.0	44	14.7	22.74±3.98
- Spiritual growth	16	5.3	178	59.3	106	35.3	25.13±4.02
- Personal relations	30	10.0	135	45.0	135	45.0	25.47±4.58
- Stress management	52	17.3	233	77.7	15	5.0	18.15±3.58

Table IV: Distribution of the mean scores of HPLP II by sex:

Students' health promotion lifestyle	Mean Scores of HPLP		Test of Significance	Total Mean score X ± SD
	Male	Female		
	X ± SD	X ± SD		
- Health responsibility	17.78±3.99	18.51±3.82	F=2.567 P=0.110	18.21±3.90
- Physical activity	14.50±3.19	14.20±3.22	F=0.652 P=0.420	14.38±3.20
- Nutrition	22.73±3.94	22.75±4.03	F=1.204 P=0.268	22.74±3.98
- Spiritual growth	24.84±3.99	25.54±4.03	F=2.199 P=0.139	25.47±4.58
- Personal relations	25.39±4.79	25.53±4.45	F=0.062 P=0.804	25.13±4.02
- Stress management	18.42±3.45	17.95±3.68	F=1.283 P=0.258	18.15±3.58
- Total HPLP score	124.06±17.18	124.08±17.75	F=1.101 P=0.333	124.07±17.48

F= ANOVA test

Figure III: Distribution of the nursing students according to their perceived benefits and barriers to health promoting lifestyle:

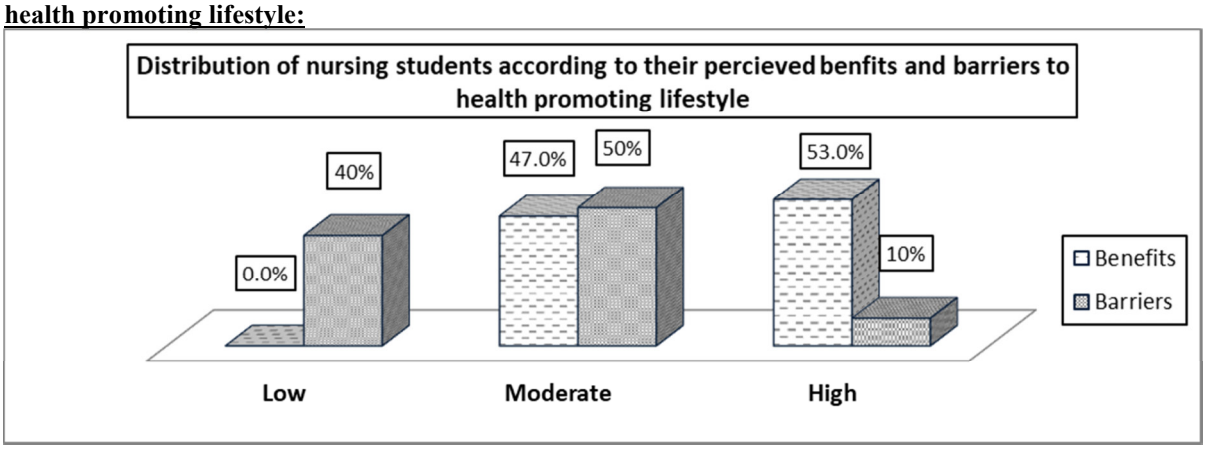

Table VI: Distribution of the barriers of health promoting lifestyle as rated by the students:

Items	Mean	S.D
Lack of convenient facilities	2.83	.81
Interferes with other responsibilities / work overload	2.80	1.01
Poor service quality	2.57	1.05
Lack of time	2.53	1.06
Poverty / Lack of money	2.50	.97
Lack of help from health care professionals	2.39	1.00
Feeling what I do doesn't help	2.37	.98
Lack of transportation	2.23	1.06
Not interested	2.21	.93
Feeling I can't do things correctly	2.19	.93
Difficulty with communication	2.13	.90
Embarrassment about my appearance	2.11	.92
Bad weather	2.08	1.06
Too tired	1.99	.81
No one to help me	1.98	.86
Lack of information about what to do	1.92	.96
Lack of support from family/friends	1.76	.84
Disability/ Impairment	1.41	.73

Table VII: Correlation between health promotion lifestyle profile, perceived health competence, benefits and barriers to health promotion:

Statistical Test Pearson's r	Correlation Coefficient	Significance
- Perceived health competence	0.170	0.003*
- Perceived benefit	0.151	0.009*
- Perceived barriers	- 0.207	0.000*

*** Significant at $P \leq 0.05$**

Table VIII: Relation between the mean total HPLP-II scores and the students' socio demographic characteristics and physical health status:

Students' characteristics	No.	X ± SD	Test of Significance
Sex			
- Male	125	124.06 ± 17.18	F = 0.000
- Female	175	124.08 ± 17.75	P = 0.991
Age (years)			
- 18-	63	122.32 ± 18.49	F = 0.000
- 20-	90	123.70 ± 16.58	P = 0.994
- 22-24	147	125.43 ± 17.27	
Academic year			
- First	81	123.01 ± 17.56	F = 0.205
- Second	73	123.89 ± 17.62	P = 0.975
- Third	76	124.08 ± 17.60	
- Forth	70	125.39 ± 17.43	
Family residence			
- Urban	158	124.13 ± 17.89	F = 0.044
- Non urban (Rural + Squatter)	142	123.80 ± 16.73	P = 0.957
Student residence during study			
- With the family	210	125.29 ± 16.86	F = 1.736
- Away from the family	90	122.62 ± 20.42	P = 0.026*
Work beside education			
- Yes	59	125.59 ± 18.36	F = 1.687
- No	241	123.70 ± 17.28	P = 0.016*
Presence of chronic health problems			
- Yes	73	120.10 ± 19.96	F = 5.060
- No	227	125.35 ± 16.45	P = 0.025*
Regular checkup			
- Yes	15	133.27 ± 8.819	F = 3.365
- No	285	125.63 ± 19.007	P = 0.036*
Parents' marital status			
- Married	261	125.20 ± 16.77	F = 8.53
- Not married (divorced- widowed)	39	116.54 ± 20.35	P = 0.004*
Social level			
- Low	144	120.83 ± 18.69	F = 7.494
- Middle	59	125.11 ± 18.62	P = 0.000*
- High	97	129.29 ± 13.79	

F = ANOVA Test *** Significant at P≤0.05**

Conclusion

The study results revealed that the majority of the students were fair in total health promoting lifestyle; the gender of the students didn't affect their health promoting life style in a significant manner. The vast majority of the students had fair health competence, more than half of the students had high perception regarding the benefits of the health promoting lifestyle and none of them had low perception. On the other hand, those with low barriers perception constituted two fifths of the students compared to one tenth of them who had good barriers perception. Lack of convenient facilities was the first barrier to health promoting lifestyle.

Recommendations

Based on the results of the study, the following recommendations can be suggested:

- The university should create a positive environment to strengthen, support, and reinforce the adoption of healthy related behavior, e.g. healthy food programs, sport facilities to ensure high level of physical activity.
- Establishment of health promoting or wellness clinic to the students, including program for regular medical checkup.
- Nursing education needs to acknowledge the importance of integrating the concepts of healthy lifestyle and lifestyle modification in the curricula plans.
- Counseling services should be established with a referral system from the faculties to help the students to face and deal with their problems and stresses.
- The need for more research into health promotion behaviors, study style, social environment or activities,

and recreational activities during students' university and daily lives. Qualitative research is needed to focus on perception of, and barriers to, exercise, as well as on means and ways of stress management of university students.

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