ANALYSIS OF HEALTH PROMOTING LIFESTYLE BEHAVIORS AMONG NURSING STUDENTS FROM A COLLEGE OF A HEALTH SCIENCES ACADEMY IN KATHMANDU, NEPAL

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Abstract

Introduction: Health promoting lifestyle (HPL) of nurses may affect the quality of care in healthcare settings. Nursing students not only learn from curricular activities, but mentoring from faculty members and seniors also helps them to develop HPL skills and practices. Therefore, this study was undertaken to assess the HPL behaviors and examine factors related to HPL among all levels of nursing students.

Methods: The cross-sectional study was conducted in School of Nursing and Midwifery at Patan Academy of Health Sciences, Lalitpur, Nepal, in September 2017. A total of 331 nursing students participated in the study. The Body Mass Index (BMI) was calculated by dividing the weight by the height squared (kg/m2). HPL behavior was evaluated using Walker's Health Promoting Lifestyle Profile (HPLP). Data were analyzed using independent t-test and analysis of variance test by SPSS Version 16 package with significance level of $p < 0.05$.

Results: The mean age of the participants was 22.86±5.80 years (range 16 - 54). The BMI of respondents revealed that 69.8% had normal weight, 15.4% underweight and 14.8% overweight. The mean of the total health promoting behaviors were 2.74±0.41 out of a score of four. The HPLP score of Bachelor of Nursing (BN) was highest (2.83±0.49), whereas it was lowest (2.70±0.37) for the Proficiency Certificate Level (PCL) Nursing. Out of six sub categories of HPLP, Spiritual Growth (3.05±0.49) and Interpersonal Relationship (3.04±0.56) showed high scorers, while Physical Activities (2.32±0.60) and Nutrition (2.58±0.49) had low scorers throughout all the levels of students.

Conclusion: The physical activity and nutrition level of students was inadequate in general among all. It was expected that nurses would show more health-promoting behaviors than the general public. The hectic schedule of academic work as well as their societal orientation about life and living might have contributed toward such divergence. Low exercise score indicated the need for intervention programs for the nurses.

Key words: Health promoting lifestyle, Nepal, Nursing students

Introduction

A healthy society starts with healthy youth [1]. The global health statistics averred that, 65% of individual health and quality of life related factors are correlated to lifestyle [2]. Lifestyle means way of life or style of living that reflects the attitudes and values of a person or group [2, 3]. Health behavior is skills and practices in order to stay healthy and to avoid diseases [1].Prevention of disease and promotion of health have always been the focus of public health all over the world [2]. Nepal has been endeavoring for the development and implementation of policies and strategies that make use of health promotion and evidenced based legislation, regulations and fiscal measures to reduce the consumption of tobacco and alcohol; promote the consumption of healthy food, promote physical activities and oral health [4]. It is viewed that investigate, plan, and implement measures to targeting young people to acquire and maintain healthy habits is worthwhile for the betterment of the society [5].

The WHO report [6] has suggested that Body Mass Index (BMI) is used as an indicator of obesity (>30) and overweight (25 – 29.9) as well as under-nutrition (<18.5), and warrants profound attention in terms of its relationship with HPLP. A healthy lifestyle directs happiness and full potentiality of living [6-7]. Health promoting lifestyle (HPL) is stronger determinant than genetic factors for quality of life [8]. Our previous study among undergraduate medical students from Nepal had 2.60±0.99 means score in health promotion lifestyle [9]. The HPL is self-initiated actions and perceptions [10]; and surrounding effects [8]. It is obvious that the people who live a healthy life most probably engage in health-promoting lifestyle. The HPLP score reflects the commitment of health maintaining act, so the better the score, the better will be the health profile [11].

In Nepal, nursing is the largest group of health professionals [12-13]. In order to display these positive behaviors, nurses must have sufficient knowledge about the subject of health promotion and adopt healthy lifestyle behaviors [14, 15]. They rely on a broad range of healthcare that comprises disease prevention and health promotion [16] and hence are subject to more stress at their worksite. As the largest group of healthcare providers in Nepal [17], nurses have the potential to exert a strong influence on health care practices in their nation [14-15].

The socio-economic status and age [18-19] is directly associated with better health-promoting behavior outcomes among university students. Senior students are better in health responsibilities [20]. Studies have shown that females engaged more in health responsibility behaviors and nutrition than stress management and physical activity [9, 21]. Anther study among undergraduate medical students showed that interpersonal relations and health responsibility increases as their education grade progresses but is poorer in stress management [20]. It seems that the health-promoting behaviors of nursing and health sciences university students are receiving increased attention worldwide [22-23]. However, this area is still under research in the case of PAHS. Thus, the purpose of this study was to determine the health promotion lifestyle behaviors of nursing students and to investigate the factors related to these behaviors.

Methods

A cross-sectional survey was used to assess nursing students at Patan Academy of Health Sciences in Nepal. The studied population comprised all current students studying at Proficient to Master level. The researcher team shared the research protocol with students in their respective classrooms and invited them tp participate in the study. The prospective participants were informed that participation in research was voluntary and were assured of confidentiality. If they were interested in participating in the study, they were asked to fill out the questionnaire.

All the students were eligible to participate and participation in the study was voluntary. Written consent was taken before filling out the questionnaire. Students dropped filled questionnaire into a designated box. After seven days of questionnaire distribution, we collected responses and counted 359 (94.2%). Twenty-eight participants were removed from the research due to their incomplete responses. The study was conducted among 331 nurses. The research protocol was approved from PAHS.

This study utilized the Health-Promoting Lifestyle Profile (HPLP) survey developed by Walker et. al. [24]. In this study, the HPLP scale had a Cronbach alpha of 0.877. We distributed the questionnaire to 381 students who presented on 8 November 2017 in their respective classrooms after a short orientation of study. The first part of the questionnaire included demographic questions; and the second part was related to lifestyle questions, which was designed in six aspects and included 52-items on a 4-point Likert scale (never, sometimes, often, and routinely) tool based on Pender's Health Promotion Model which contains 6 subscales: self realization (SR), health responsibility (HR), physical activity (PA), nutrition (N), interpersonal relations (IR) and stress management (SM) [25]. For each subscale, the scores for the questions were added and divided by the number of items in the subscale for obtaining the subscale scores. The lowest possible individual overall score of the HPLP is 52 (1 × 52) and the highest possible is 208 (4 × 52). The higher the mean score obtained, higher is the index of a health-promoting lifestyle.

Anthropometry measurement

Regarding anthropometric measurement, one of the co-investigators measured the height and weight of participants. The participants' height was measured using a portable stadiometer and weight was measured using digital scales. Height and weight were measured to the nearest 1cm and 0.1kg, respectively. BMI was calculated as weight (kg) divided by height squared (m2) and classified using the standard international adult BMI ranges: *underweight* (BMI <18.5), *healthy weight* (BMI = 18.5-24.9), *overweight* (BMI = 25.0-29.9), or *obese* (BMI >30) [6].

The analysis was performed using Statistical Package for the Social Sciences (SPSS) 16.0. Distribution of socio-demographic characteristics, and characteristics of lifestyle of the students were evaluated and differences between mean score in the HPLP overall and in the subscales were analyzed. The statistical differences between the groups were in terms of socio-demographics and HPLP. The HPLP scores were compared according to gender, residence type, school background and academic year. Scores were analyzed using independent t-test and analysis of variance (ANOVA) test. Multiple comparison tests were conducted to identify significant differences among university year (first, second, third and fourth) groups. The post-hoc test was performed to determine the direction and significance of differences between the groups. A p<0.05 was considered to be statistically significant.

Results

The survey was carried out among 331students representing proficiency certificate (40.5%), bachelor (50.5%) and master's (9.1%) level. The majority of students were from an urban area (82.8%), nuclear types of family structure (72.2%) and studied school level from private school (65%). Table 1 shows the results of demographic information of the respondents. In current residence, 39.3% had their own home in the town whilst 27.5% were residing in a college hostel. Major occupation of the father was service (33.2%) and business (26%).

The mean age of the participants was 22.86±5.80 years (range 16 - 54). The results showed that 61% of respondents had a monthly family income less than 50 thousand ($1 ~ 105 NRP), 43.2% had perception as good family health lifestyle, 47.1% self-rated own health lifestyle as good.

The majority (69.8%) of students' BMI falls into the normal range followed by underweight (15.4%) and Overweight (10.9%). Thought negligible, 3.9% were obese. (Health Promotion Lifestyle Profile II scores for the self-reported health-promoting behaviors among nurses are listed in Table 1).

The mean of the total health promoting behaviors were 2.74±0.41 out of a score of four. The result also indicated that the status of the health promoting behaviors of BN was highest (2.83±0.49) among them and least (2.70±0.37) was of PCL. Out of six sub categories, spiritual growth (3.05±0.49) and interpersonal relationship (3.04±0.56) were high scorers while physical activities (2.32±0.60) and nutrition (2.58±0.49) were low scorers throughout the level of students. The majority (70.5%) students were relatively good (mean score range 2.5 – 4) and the remaining were poorer. (Table 2)

The higher the education level, the HR and IR was greater but PA and SM was least. The BN students secured highest (2.83±0.49) HPL score among all level of students.

The respondents were assessed based on their self-declared geographical types of home town, types of school in which they attained secondary level education, and the average monthly family income. The students from urban background had high (2.75±0.40) HPLP mean score compared to rural (2.70±0.47). The mean score of nutrition among urban students was high (2.61±0.51) compared to students from rural backgrounds (2.45±0.58). There was a strong relation between nutrition and geographical types of home town where from they came (p<0.001).

Based on school types of secondary education, private school graduates have high (2.76±0.41) HPLP mean score compared to public school graduates (2.71±0.42). Here public school background is the proxy indicator for low socio-economic status. Among different HPLP sub categories; IR, SG and SM mean scores were higher among the private school group. Family type (p = 0.007) and average monthly family income (p = 0.001) was found strongly associated with HPLP mean score. Respondents from joint family have higher (2.82±0.40) HPLP mean score with high mean values in all six subcategories. On the other hand, respondents having more than one hundred thousand average monthly family income had consistently higher mean value in all six HPLP subcategories. (Table 3).

The respondents were asked to rate their own health lifestyle. About half of the respondents (49.1%) had rated satisfactory and almost a similar number of respondents (48.2%) rated good. The respondents who self-rated 'good' had consistently high mean HPLP score in all six subcategories compared to satisfactory. (Table 4)

The majority (69.8%) of students' BMI falls in the normal range followed by underweight (15.4%) and overweight (10.9%). Thought negligible, 3.9% were obese. The mean total score on the HPLP II for the participating nurses was 122.6±19.47.

The data shows that HPLP mean scores of BMI normal weight group and overweight group were 2.77±0.51 and 2.76±0.51 respectively whereas the HPLP mean scores of obese and underweight group was 2.63±0.30 and 2.72±0.29 respectively. The highest mean score of HPLP subcategories were SG and IP at the same time as PA subcategory was low mean scorer consistently in all four BMI categories.

Table 1: Demographics of the participants (N = 331)

Variable	Percentage (n)	Age (mean ± SD)
Geographical types of home town		
Rural	17.2 (57)	21.53±4.59
Urban	82.8 (274)	23.15±5.99
Current studying level		
PCL	40.5(134)	18.3±4 2.17
B.Sc.	21.5 (71)	23.01±3.97
BN	29.0(96)	25.77±3.65
MN	9.1(30)	33.43±6.45
Family type		
Joint/Extended	27.8(92)	23.10±5.80
Nuclear	72.2(239)	25.38±6.31
Types of School (studied grade 8,9,10)		
Community School	35(116)	24.82±6.82
Private School	65(215)	21.81±4.87
Current resident		
Own home	39.3(130)	23.10±5.80
With relative	5.4(18)	25.38±6.31
Rented-home	26.6(88)	21.88±4.27
Hostel	27.5 (91)	19.95±3.48
Others	1.2 (4)	34.17±10.03
Average monthly family income		
<50k	61.0 (202)	22.67±5.59
50 - 100k	32.3 (107)	22.79±6.10
100 - 200k	4.8 (16)	24.56±6.53
>200k	1.8 (6)	26.17±5.04
How do you rate your own health lifestyle		
Good	47.1(156)	22.20±5.05
Satisfactory	49.8(165)	23.69±6.45
Not satisfactory	3.0 (10)	19.70±2.41
How do you rate your family health lifestyle		
Good	43.2(143)	22.21±5.27
Satisfactory	52.0(172)	23.56±6.24
Not satisfactory	4.8 (16)	21.25±4.70
BMI classification		
Underweight	15.4(51)	20.27±3.23
Normal range	69.8(231)	22.39±4.97
Overweight	10.9(36)	27.03±8.71
Obese	3.9(13)	29.92±6.95
Health promotion life style		
Poor	31.4(104)	22.60±6.17
Relatively Good	68.6(227)	22.99±5.64

Table 2: Mean score of HPLP subcategories of respondents based on an academic level of respondents

Academy level	HR	PA	Nu	SG	IR	SM	HPLP
All students	2.68±0.48	2.32±0.60	2.58±0.53	3.05±0.49	3.04±0.56	2.74±0.51	2.74±0.41
PCL (134)	2.64±0.44	2.34±0.57	2.50±0.48	2.99±0.49	2.98±0.44	2.71±0.50	2.70±0.37
B.Sc. (71)	2.61±0.46	2.25±0.52	2.53±0.53	3.09±0.43	3.06±0.66	2.74±0.50	2.72±0.39
BN (69)	2.76±0.53	2.44±0.68	2.72±0.58	3.12±0.52	3.08±0.65	2.82±0.57	2.83±0.49
MN (30)	2.77±0.52	2.04±0.52	2.61±0.48	3.04±0.46	3.11±0.46	2.64±0.36	2.72±0.38

Note: HR = Health Responsibility; PA = Physical Activity; N = Nutrition; SG = Spiritual Growth; IR = Interpersonal Relation; SM = Stress Management

Table 3. Mean score of HPLP subcategories of respondents based on geo-types of home-town, school background, family type and average monthly family income

Categories	Descriptions	HR	PA	N	SG	IR	SM	HPLP	P value
Geo type of home town	Rural (57)	2.63±0.48	2.31±0.69	2.45±0.58	3.06±0.57	2.98±0.56	2.73±0.51	2.70±0.47	0.296
	Urban (274)	2.69±0.48	2.33±0.58	2.61±0.51	3.05±0.47	3.05±0.56	2.75±0.51	2.75±0.40	
School (grade 8-10) type	Public (116)	2.67±0.46	2.34±0.63	2.56±0.52	3.01±0.51	2.95±0.49	2.70±0.54	2.71±0.42	0.128
	Private (215)	2.68±0.49	2.31±0.58	2.59±0.53	3.07±0.47	3.08±0.59	2.77±0.50	2.76±0.41	
Family type	Joint (92)	2.78±0.47	2.43±0.63	2.69±0.53	3.08±0.53	3.07±0.53	2.82±0.56	2.82±0.40	0.007
	Nuclear (239)	2.64±0.48	2.28±0.58	2.54±0.52	3.04±0.47	3.02±0.57	2.71±0.49	2.71±0.40	
Average monthly family income	< 50,000 (202)	2.66±0.47	2.30±0.60	2.55±0.50	3.05±0.46	3.03±0.45	2.73±0.52	2.73±0.38	0.001
	50-100,000 (123)	2.68±0.59	2.34±0.58	2.61±0.55	3.04±0.53	3.04±0.70	2.74±0.49	2.75±0.44	
	>100,000 (6)	3.20±0.59	2.69±0.71	3.20±0.62	3.22±0.66	3.33±0.64	3.23±0.48	3.15±0.56	

Table 4. Mean HPLP subcategories of respondent based on self-rated Own Health Lifestyle

	HR	PA	N	SG	IR	SM	HPLP
Good (156)	2.71±0.51	2.39±0.60	2.67±0.52	3.11±0.49	3.07±0.67	2.82±0.52	2.80±0.44
Satisfactory (165)	2.67±0.46	2.27±0.60	2.52±0.52	3.00±0.46	3.02±0.42	2.69±0.48	2.70±0.38
Not satisfactory (10)	2.41±0.39	2.06±0.41	2.23±0.55	2.91±0.65	2.68±0.54	2.33±0.62	2.45±0.32

Table 5. Mean score of HPLP subcategories of respondents according to BMI classification

BMI classification		HR	PA	N	SG	IR	SM	HPLP
Under-weight	PCL (27)	2.53±0.30	2.03±0.40	2.37±0.28	2.85±0.39	3.07±0.43	2.59±0.45	2.58±0.23
	B.Sc. (13)	2.53±0.46	2.17±0.53	2.27±0.42	3.14±0.48	2.89±0.46	2.83±0.50	2.640.38
	B.N. (11)	2.66±0.42	2.43±0.50	2.70±0.49	3.05±0.34	2.76±0.41	2.75±0.41	2.73±0.32
	Total (51)	**2.56±0.37**	**2.15±0.48**	**2.41±0.42**	**2.97±0.42**	**2.96±0.45**	**2.69±0.48**	**2.63±0.30**
Normal range	PCL (94)	2.66±0.46	2.43±0.56	2.52±0.51	3.00±0.49	2.97±0.47	2.76±0.47	2.73±0.37
	B.Sc. (53)	2.62±0.47	2.26±0.54	2.60±0.52	3.09±0.43	3.12±0.70	2.72±0.51	2.74±0.39
	B.N. (68)	2.77±0.56	2.41±0.74	2.73±0.61	3.14±0.55	3.19±0.68	2.81±0.60	2.85±0.52
	M.N. (16)	2.76±0.50	2.13±0.50	2.61±0.42	3.00±0.32	3.03±0.40	2.63±0.38	2.70±0.32
	Total (231)	**2.69±0.50**	**2.36±0.61**	**2.61±0.54**	**3.06±0.49**	**3.07±0.59**	**2.75±0.52**	**2.77±0.51**
Over-weight	PCL (10)	2.73±0.60	2.45±0.77	2.63±0.59	3.36±0.57	2.88±0.52	2.79±0.78	2.81±0.57
	B.Sc. (4)	2.61±0.35	2.25±0.23	2.33±0.46	2.81±0.33	2.72±0.53	2.56±0.26	2.55±0.32
	B.N. (13)	2.76±0.60	2.60±0.58	2.67±0.64	3.00±0.53	2.79±0.60	2.91±0.55	2.79±0.53
	M.N. (9)	2.81±0.69	1.96±0.53	2.67±0.63	3.14±0.61	3.21±0.57	2.71±0.41	2.77±0.51
	Total (36)	**2.75±0.58**	**2.36±0.63**	**2.62±0.59**	**3.11±0.55**	**2.91±0.57**	**2.79±0.57**	**2.76±0.51**
Obese	PCL (3)	2.59±0.28	1.96±0.19	2.70±0.26	2.56±0.19	2.67±0.11	2.17±0.40	2.46±0.11
	B.Sc. (1)	3.00±0.00	2.63±0.00	3.11±0.00	3.44±0.00	3.11±0.00	3.13±0.00	3.08±0.00
	B.N. (4)	2.78±0.27	2.41±0.45	2.86±0.19	3.31±0.33	3.11±0.18	2.88±0.51	2.90±0.17
	M.N. (5)	2.71±0.13	1.93±0.60	2.51±0.46	3.00±0.64	3.20±0.52	2.58±0.21	2.67±0.33
	Total (13)	**2.72±0.22**	**2.13±0.50**	**2.71±0.36**	**3.03±0.52**	**3.04±0.38**	**2.62±0.45**	**2.72±0.29**

Discussion

Health promotion lifestyle plays a great role in health hence societies all over the world have been increasingly renowned as seeking a measure to accomplish quality of health life [25]. It has entailed a higher role of nurses [25-28]. Nursing has gradually become an attractive professional discipline in Nepal. Students from different socio-economic background join this course. This study assessed overall means score on the HPLP for the respondent was 122.6±19.47.This showed that respondent's health promoting behaviors was satisfactory (<2.5 mean score) which is congruent with other studies [23];[27]. The respondents scored highest in SG (3.05±0.49), IR (3.04±0.56) and SM (2.74±0.51) in HPLP subcategories. It may foster respondents to accept the professional challenges in future. On the other hand, PA (2.32±0.60) and Nu (2.58±0.53) were lowest scored subcategories. Similar findings were observed by other studies conducted among the nursing students. [28-31].Besides socio-economic status, the college environment may have swayed such results [32-33]

Physical activity and nutrition are key determinants of healthy lifestyle [34-35] which are largely influenced by socio-economic status, education and focus interventions to target population. While calculating BMI, 15.4 % respondents were underweight and 10.9% were overweight [36-37] and Obese respondents (3.9%) are among the higher academic level.[26] The lifestyle related diseases are rapidly increasing in Nepal and all over the world which may be underpinned by poor Nu, PA, SM [35]. Therefore, there is an urgent need to incorporate HPLP activities in nursing education.

Most of the respondents (82.8%) were from an urban background. There is decreasing trend of physical activities and increasing use of processed food in urban settlements which may have contributed poor physical activities and nutrition. It is epitomizing to Nepalese society in general. The 61% respondents who claimed that their monthly family income was less than 50 thousand and about 6.6% had more than 100 thousand NRP. Students from higher income family groups had higher health responsibility and stress management with over HPLP mean score (3.15±0.56). [26][32] Besides, about a quarter (27.5%) of students were residing in college hostel where they may get a monotonous diet and may compromise fruits and nuts. Above all conditions may embrace the (poor) nutrition status of the students. Even though, 47.1% students self-rated their own health lifestyle as good and 3% as not satisfactory, the remaining were satisfactory.

The mean score of health promoting behaviors was higher (2.83±0.49) among BN students. They are high scorers in SG, Nu, PA, SM subcategories of HPLP compared to respondents from other academic levels. Despite this, none of the academic level students have obtained PA mean score relatively good (2.5 – 4 HPLP mean score).

Conclusion

This study determined specific demographics related to health-promoting lifestyle behaviors among nurses. These included geographical background of residence, type of school, family types and average family income. Nurses in this study showed relatively good levels of overall health-promoting behaviors. The urban students were relatively good in nutritional status compared to rural based students which are statistically strongly significant. The socio-economic status (p=0.296) and geographical types of residence (p=0.128) have low relation, while family type (p=0.007) and family income (p=0.001) have strong significant relations in HPLP. The physical activity and nutrition level of students was inadequate in general among all. It was expected that they would show more health-promoting behaviors than the general public. The hectic schedule of academic work as well as their societal orientation about life and living might have contributed toward such divergence. The students from higher academic levels (MN) had poor PHL. The results of the study implied the need for organized physical activity and nutrition programs for students based on specific requirements and needs. In order to get better insight into healthy lifestyle behaviors (causality and effect), further research needs to be carried out including a representative sample from different universities and using a combination of self-reported and observational research methods.

Limitation: While computing results, data from one University college from Lalitpur Nepal was collected. Thus findings may not generalize to all students or all young adults.

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