Health-seeking Behavior of Undergraduate Nursing Students and Associated Factors: A Cross-sectional Study

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Research

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Abstract

Background

Though relevant education and clinical practice could promote health-seeking behavior, nurses and nursing students may not actively seek healthcare.

Methods

This was a cross-sectional study using an adaptation of the self-reported Health Behavior Questionnaire (HBQ) including sociocultural background, lifestyle, self-assessment of life, health care utilization, and health counseling. 199 valid samples were acquired by convenient sampling. Univariate analysis, Spearman rank correlation, Pearson correlation, and multivariate linear regression were used to analyze the data.

Results

Cultural background, living with family, employment, most items in lifestyle, and all items in perceived life status were correlated with health-seeking behavior. A multivariate linear regression verified the influence of alcohol consumption, financial situation, and work situation on the experience of health care utilization, as well as the influence of physical health and interpersonal relationship on the experience of health counseling.

Conclusions

Less alcohol consumption, better financial situation, and better work situation are positively correlated with health care utilization. Better physical health and sounder interpersonal relationships can improve health counseling. The effect of other factors needs further exploration. Cohort studies could be used to investigate the long-term change in health-seeking behavior.

Background

Health-seeking behavior is an individual's behavior to maximize well-being, recovery, and rehabilitation, in the face of existing or potential health concerns [1], with its specific meaning based on time and context [2]. The phrase 'health-seeking behavior' is interchangeable with 'help-seeking behavior' in the field of healthcare. The latter emphasizes more on the process of getting help, including mental activities of identifying a health problem [3], determining a source of help [4], and conducting interpersonal interaction with healthcare professionals [5].

As theories of preventable health risk and risk-taking behaviors receive attention from healthcare providers, the preventive and risk-minimizing effect of health-seeking behavior came into sight [6]. The nursing staff is one of the largest groups of healthcare workers as well as the one closest to clients in a medical service system. Nurses' awareness and practice of health-seeking can affect that of clients and is hence vital to the health industry. Though nurses do have higher health literacy and easier access to health services, they do not necessarily seek healthcare appropriately when running into health-related problems. They may conduct self-prescribing and self-medication, not believing in or complying with doctors' advice [7]. Finding the determinants of nurses' health-seeking behavior is critical for client-oriented healthcare services [8].

As the future workforce of nurses, nursing students have higher health literacy than their peers. But they do not necessarily put knowledge into practice [9]. Also, nursing students have higher psychological distress than the general population, but still face barriers in getting psychological support with fear of disclosure and its impact on their suitability as nurses [10]. Assessment of nursing students' health-seeking behavior and exploration of its associated factors still lacks.

The purpose of this study is to assess the experience of health care utilization and health counseling among undergraduate nursing students, and to explore the possible underlying factors in the sociocultural background, lifestyle, and perceived life status.

Methods

Design and Participants

This was a cross-sectional study of a research program 'Health Status, Health Behavior, Health Counseling and Vocation among Nursing Students in Finland, China, Japan, and Sri Lanka' conducted separately by four partners in four countries. The partners have the copyright of data collected in their own country and prepare articles separately. So far, the authors of this article only have copyright over data collected in China. Results from data owned by other partners may consider publication in the future.

The inclusion criteria for participants were: (1) Enrolled in the full-time nursing undergraduate program; (2) Informed of the purpose and methodology of this study and participated voluntarily. The exclusion criteria were: (1) During the suspension of schooling. (2) Graduated recently.

This study was conducted in one nursing school in Beijing using convenient sampling. The school has about 300 potentially eligible students. Researchers provided a detailed explanation to the participants beforehand. The participants were ensured that their participation should be voluntary and they had the right to withdraw from the study. The questionnaire was officially distributed to students in May 2018. A total of 199 valid ones were finally obtained in the end.

Ethical Considerations

The study was approved by the National Committee on Medical Research Ethics of Finland in April 2018 and was carried out following the Helsinki guidelines. To ensure confidentiality and anonymity, there were no questions regarding private information in the questionnaire.

Instrument and Variables

This study adopted an adaptation of the Health Behavior Questionnaire (HBQ) developed by the National Public Health Institute [11–13]. The questionnaire consisted of sociocultural information, lifestyle, perceived life status, health care utilization, and health counseling.

The sociocultural information includes gender (male or female), academic year (first year, second year, or third year), living with family (yes or no), culture background (multiple cultures or a single culture), employment status (unemployed, working occasionally, or permanently employed). The Cronbach's α of the scale is 0.744. Cronbach's Alpha Based on Standardized Items is 0.701.

The lifestyle subscale is a self-assessment of health-related habits. The subscale contains five aspects: use of addictive substances (including alcohol, other substances than alcohol, smoking) (never = 1, 2–3 times a month = 2, 1–3 times a week = 3, almost daily = 4), physical exercise (never = 1, 2–3 times a month = 2, 1–3 times a week = 3, almost daily = 4), dietary habits (less healthy = 1, remained the same = 2, healthier = 3), weight change (has lost weight = 1, has remained the same = 2, has put on weight = 3), and use of social media (never = 1, less than one hour per day = 2, 1–3 hours per day = 3, 4–7 hours per day = 4, 8 hours or more = 5).

The perceived life status subscale is a self-assessment of individual physical health, mental health, financial situation, study situation, work situation, and interpersonal relationships. Each item was rated on a 5-point Linkert-type scale ranging from 1 (very poor) – 5 (excellent) indicating individual satisfaction with her or his Perceived life status.

The self-assessment of health-seeking behaviors includes health care utilization and health counseling, rated on two 5-point Linkert-type scales ranging from 1 (very poor) – 5 (excellent) indicating individual experience of adopting health-seeking behavior.

Data Analysis

SPSS 22.0 software (IBM Corp., Armonk, NY) was used for all data analyses. All tests in this study were two-tailed and $p < 0.05$ was considered statistically significant. Frequencies and percentages were used to report background characteristics. Means and standard deviations of the quantitative data and that of each subgroup were reported. Unpaired t-tests and one-way ANOVA were used for the univariate analysis. Spearman rank correlation was employed to analyze the correlation between items in lifestyle and health-seeking behavior. Pearson correlation was employed to analyze the correlation between items in perceived life status and health-seeking behavior. All statistically significant variables were entered into the multivariate linear regression to confirm the influence of these factors on health-seeking behavior. Missing data were addressed by filling the gaps with average values.

Results

Sociocultural Background

All 199 participants were undergraduate nursing students in one selected nursing school in Beijing by October 2018. Details are shown in Table 1.

Table 1
Sociocultural Background of the participants (N = 199)

Variable	Health care utilization		Health counseling	
	N (%)	M (SD)	N (%)	M (SD)
Gender				
Male	68(34.17)	3.59 (0.93)	68(34.17)	3.54 (0.98)
Female	131(65.83)	3.39 (0.82)	129(64.82)	3.31 (0.91)
Academic year				
First year	108(54.27)	3.43 (0.97)	108(54.3)	3.33 (0.99)
Second year	71(35.68)	3.54 (0.71)	71(34.67)	3.48 (0.89)
Third year	20(10.05)	3.30 (0.66)	20(10.05)	3.30 (0.80)
Living with family				
Yes	105 (52.76)	3.61 (0.79)	103(51.76)	3.51 (0.87)
No	94(47.24)	3.32 (0.90)	64(47.24)	3.28 (0.98)
Culture background				
multiple cultures	26(13.07)	3.88 (0.82)	26(13.07)	3.88 (0.95)
A single culture	173 (86.93)	3.40 (0.85)	171(85.93)	3.31 (0.92)
Employment status				
Unemployed	133(66.83)	3.35 (0.84)	131(65.83)	3.24 (0.95)
Working occasionally	50(25.13)	3.64 (0.78)	50(25.13)	3.64 (0.85)
Permanently employed	15(7.54)	3.94 (1.06)	15(7.54)	3.81 (0.83)
Total	199(100.00)	3.45(0.857)	197(98.99)	3.38(0.933)
Relevant location: Results - <i>Sociocultural Background</i> (Page 7)				

Most participants were female (65.83%), unemployed (66.83%), and from one single culture background (86.93%). About half still living with family (52.76%) and half not (47.24%). The average score of health

care utilization experience was 3.45, ranging from 3.32 to 3.94. The average score of health counseling experience was 3.38, ranging from 3.24 to 3.88.

Mission data:

- Living with Family: 1 missing data (valid percent: 99.50%)
- Employment: 1 missing data (valid percent: 99.50%)
- Smoking Habit: 1 missing data (valid percent: 99.50%)
- Nutrition and Dietary Habits: 6 missing data (valid percent: 96.98%)
- Health Counseling: 2 missing data (valid percent: 98.99%)

Sociocultural factors and Health-seeking Behavior

Table 2 shows the results of the univariate analysis for independent samples. Health care utilization was correlated with living with family (or not) ($p = 0.025$), multicultural background ($p = 0.005$) and employment status ($p = 0.017$). Health counseling was correlated with multicultural background ($p = 0.003$) and employment status ($p = 0.012$).

Table 2
Univariate analysis of health-seeking behavior (N = 199)

Variable	Health care utilization		Health counseling	
	Statistics	<i>p</i> value	Statistics	<i>p</i> value
Gender ^a	1.443	0.151	1.469	0.144
Academic year ^b	0.698	0.499	0.589	0.556
Living with family ^a	-2.259	0.025*	-1.568	0.118
Culture background ^a	2.808	0.005**	3.018	0.003**
Employment status ^b	4.141	0.017*	4.548	0.012*
* $p < 0.01$, ** $p < 0.05$, *** $p < 0.001$; (a) use unpaired t test and report t value; (b) use one-way ANOVA and report F value.				
Relevant location: Results - <i>Sociocultural factors and Health-seeking Behavior</i> (Page 7)				

Lifestyle, Perceived life status, and Health-seeking Behavior

Table 3 presents the results from Spearman rank correlation and Pearson correlation. Health care utilization showed correlation with alcohol consumption ($\rho = -0.149$, $p = 0.035$), Substances except for alcohol ($\rho = 0.142$, $p = 0.045$), nutrition and dietary habits ($\rho = 0.171$, $p = 0.020$), and physical exercise ($\rho = 0.233$, $p = 0.001$). Health counseling was correlated with Substances except for alcohol ($\rho = 0.150$, $p = 0.036$) and nutrition and dietary habits ($\rho = 0.178$, $p = 0.016$).

Table 3
Correlation between Lifestyle, self-assessment of life, and health-seeking behavior (N = 199)

Variable	Health care utilization		Health counseling	
	Coefficient	p value	Coefficient	p value
Lifestyle^a				
Alcohol consumption	-0.149	0.035*	-0.118	0.100
Substances except for alcohol	0.142	0.045*	0.150	0.036*
Smoking habits	0.038	0.592	-0.006	0.938
Nutrition and dietary habits	0.171	0.020*	0.178	0.016*
Weight change	0.116	0.102	0.136	0.057
Physical exercise	0.233	0.001**	0.121	0.091
Social media utilization	-0.040	0.575	0.075	0.295
Perceived life status^b				
Physical health	0.363	0.000**	0.363	0.000**
Mental health	0.374	0.000**	0.289	0.000**
Financial situation	0.421	0.000**	0.304	0.000**
Study situation	0.369	0.000**	0.263	0.000**
Work situation	0.440	0.000**	0.269	0.000**
Interpersonal relationship	0.397	0.000**	0.368	0.000**
* $p < 0.01$, ** $p < 0.05$, *** $p < 0.001$; (1) <i>Lifestyle</i> use Spearman Rank Correlation (ρ); (2) <i>Perceived life status</i> use Pearson Correlation (r).				
Relevant location: Results - <i>Lifestyle, Perceived life status, and Health-seeking Behavior</i> (Page 8)				

All dimensions of perceived life status, including physical health, mental health, financial situation, study situation, work situation, interpersonal relationship, were correlated with both health care utilization and health counseling significantly ($p < 0.05$).

Multivariate Linear Regression

Table 4 shows the assignment of values. Table 5 shows the results of multivariable regression analysis of health care utilization and health counseling. Model 1 ($R^2 = 0.344$) verifies that better working situation ($\beta = 0.210$, $p = 0.044$), better financial situation ($\beta = 0.169$, $p = 0.048$), and less alcohol assumption ($\beta = -0.338$, $p = 0.019$) facilitate health care utilization among undergraduate nursing students. Model 2 ($R^2 = 0.198$) confirms that soundness of interpersonal relationship ($\beta = 0.274$, $p = 0.016$), physical health ($\beta =$

0.237, $p = 0.024$) explain better experience of health counseling. The variance inflation factors (VIF) are below 3, meaning there were no severe collinearity problems.

Table 4
Independent variable in the multivariate linear regression model (N = 199)

Variables	Value assignment
Sociocultural Background	
Gender	Male = 1; female = 0
Academic year	First year of college 1 = 1; second of college 2 = 2; third of college 3 = 3
Living with family	Living with family = 0; not living with family = 1
Culture background	Multicultural family background = 0; non-multicultural family background = 1
Employment status	Unemployment = 1; working occasionally = 2; permanently employment = 3
Lifestyle	
Alcohol consumption	Never = 1; 2 ~ 3 times a month = 2; 1 ~ 3 times a week = 3; almost daily = 4
Substances except for alcohol	Never = 1; 2 ~ 3 times a month = 2; 1 ~ 3 times a week = 3; almost daily = 4
Smoking habits	Never = 1; 2 ~ 3 times a month = 2; 1 ~ 3 times a week = 3; almost daily = 4
Physical exercise	Never = 1; 2 ~ 3 times a month = 2; 1 ~ 3 times a week = 3; almost daily = 4
Nutrition and dietary habits	Less healthy = 1; remained the same = 2; healthier = 3
Weight change	Lost weight = 1; remained the same = 2; put on weight = 3
Use of social media	Never = 1; less than one hour per day = 2; 1 ~ 3 hours per day = 3; 4 ~ 7 hours per day = 4; 8 hours or more = 5
Perceived life status	
Physical health	Very poor = 1; poor = 2; average = 3; good = 4; excellent = 5
Mental health	Very poor = 1; poor = 2; average = 3; good = 4; excellent = 5
Financial situation	Very poor = 1; poor = 2; average = 3; good = 4; excellent = 5
Study situation	Very poor = 1; poor = 2; average = 3; good = 4; excellent = 5
Work situation	Very poor = 1; poor = 2; average = 3; good = 4; excellent = 5
Interpersonal relationship	Very poor = 1; poor = 2; average = 3; good = 4; excellent = 5
Relevant location: Results - <i>Multivariate Linear Regression</i> (Page 8)	

Table 5
Multivariate linear regression of nursing student's health-seeking behavior ($N=199$)

Models	<i>B</i>	Std. Error	β	<i>t</i>	<i>P</i>	VIF
Model 1: Health care utilization						
(Constant)	1.234	0.447		2.760	0.006**	
Living with family	-0.206	0.111	-0.120	-1.858	0.065	1.050
Culture background	0.202	0.185	0.076	1.091	0.277	1.213
Employment status	0.149	0.090	0.112	1.662	0.098	1.143
Alcohol consumption	-0.338	0.143	-0.156	-2.359	0.019*	1.113
Substances except for alcohol	0.148	0.133	0.074	1.119	0.265	1.097
Nutrition and dietary habits	0.039	0.061	0.042	0.630	0.529	1.111
Physical exercise	0.049	0.078	0.043	0.638	0.525	1.166
Physical health	0.022	0.088	0.020	0.247	0.805	1.694
Mental health	0.125	0.097	0.111	1.287	0.200	1.891
Financial situation	0.169	0.085	0.154	1.992	0.048*	1.506
Study situation	-0.040	0.107	-0.036	-0.375	0.708	2.318
Work situation	0.210	0.104	0.202	2.028	0.044*	2.522
Interpersonal relationship	0.113	0.095	0.105	1.183	0.238	1.991
Model 2: Health counseling						
(Constant)	0.843	0.426		1.982	0.049*	
Culture background	0.256	0.217	0.087	1.182	0.239	1.190
Employment status	0.184	0.105	0.125	1.754	0.081	1.137
Substances except for alcohol	0.081	0.155	0.036	0.519	0.604	1.065
Nutrition and dietary habits	0.045	0.072	0.044	0.620	0.536	1.106
Physical health	0.237	0.104	0.199	2.273	0.024*	1.129
Mental health	-0.018	0.114	-0.015	-0.161	0.873	1.728
Financial situation	0.130	0.099	0.108	1.315	0.190	1.468

* $p < 0.01$, ** $p < 0.05$, *** $p < 0.001$; Model 1: R Square = 0.344, R Square (adj) = 0.293, $F = 6.702$, $p < 0.001$; Model 2: R Square = 0.198, $F = 4.887$, $p < 0.001$.

Relevant location: Results - *Multivariate Linear Regression* (Page 8)

Models	<i>B</i>	Std. Error	β	<i>t</i>	<i>P</i>	VIF
Study situation	0.006	0.123	0.005	0.050	0.960	2.264
Work situation	-0.055	0.122	-0.048	-0.449	0.654	2.404
Interpersonal relationship	0.274	0.112	0.231	2.435	0.016 *	1.960
* $p < 0.01$, ** $p < 0.05$, *** $p < 0.001$; Model 1: R Square = 0.344, R Square (adj) = 0.293, F = 6.702, $p < 0.001$; Model 2: R Square = 0.198, F = 4.887, $p < 0.001$.						
Relevant location: Results - <i>Multivariate Linear Regression</i> (Page 8)						

Discussion

The score of health care utilization reflects the personal experience of seeking physical healthcare, while the score of health counseling reflects that of healthcare advisory. Though both indicate one's willingness and satisfaction of health-seeking experiences, the former has more to do with existing health problems and affordability of healthcare, while the latter has more to do with disease prevention and health literacy. In this study, the two were at a fair level, with no subgroup shows obvious divergence. This means nursing students are fairly willing to seek help in healthcare and satisfied with their experience.

Traditionally, nurses do not learn as much as doctors do in diagnostics. Also, though nurses generally are better informed in healthcare than average people, they do not have sufficient knowledge in specific areas, not to mention undergraduate students, which means they still need to turn to other professionals for help. Nowadays, nurse prescribing has been made lawful in many countries across the globe [14, 15], which is not only more efficient for society but is also beneficial to nursing staff for enhancing professional knowledge, skills, autonomy, and social status[16]. In the future, and there might be some change in their health-seeking behavior.

Less alcohol consumption, better financial situation, and better work situation are positively correlated with health care utilization. Smoking is considered one of the health risk behaviors which are linked to physical and psychological problems. Since smoking exposes individuals to greater health problems, it should increase health-seeking behavior [17]. However, this study finds the opposite effect among nursing students. Since most participants never smoke (84.42%) or smoke only 2 ~ 3 times per month (14.7%), smoking is a rare behavior among undergraduate nursing students. Students who smoke may either have unpleasant experiences due to their poor physical constitution or are not willing to seek healthcare in fear of exposure. Nursing students with better perceived financial situations are more willing to utilize health care services. A good financial situation means higher affordability for health services and counseling. This is consistent with another study showing that students with higher monthly income show more favorable attitudes towards healthcare than those with lower income [18]. Research about primary care also found out that patients with higher household incomes are more willing to use community healthcare centers [17]. Income, as well as education and occupation, as important components of socioeconomic status, are all influencing factors of health-seeking behavior [19, 20]. Work conditions

showed a positive effect on health care utilization. Since nursing students mostly work in hospitals and healthcare-related settings, their perceived work situation may influence their opinion of health care services and their confidence in professionals.

Positive correlations are shown between physical health and health counseling. Better physical health could be a result of good preventive healthcare, indicating good acceptability of advice and sufficient care for health status. The interpersonal relationship is positively correlated with health counseling. A study found that interpersonal relationship is a significant predictor of physical health, with health behavior as a possible mediator [21]. In that case, students with better social connections could be more active in seeking health advice and more willing to take them. Also, sounder interpersonal relationships mean more solid social support, and it decreases the shame or stigma of mental problems and therefore promotes mental health [22].

This study also has its limitations. First, many factors show significant influence in univariate analysis but not in multivariate analysis. A plausible explanation is that their direct impact on health-seeking behavior is small, but the indirect effect on other factors which influence health-seeking behavior may be more measurable. In that case, the relationships between such factors should be probed into. Also, since multivariate linear regression can only explain part of health-seeking behavior, other factors not discussed in this study can be brought into sight in future works. Second, since long years of nursing education do not seem to improve health-seeking behavior at the group level, the effectiveness of nursing education on health-seeking behavior should be probed into, and interventions could be designed accordingly. For example, the academic year is a significant determinant of nursing student's health literacy [23], but the measurement of health literacy is not included in this study. Cohort studies can be used to investigate the change of health-seeking behavior from the first year to the end of nursing education. Last, this study did not adopt the random sampling method. The participants only account for a small proportion of nursing students in China. To support the results of this study, random sample studies with a larger population are needed.

Conclusions

To sum up, our study mainly discussed the health-seeking behavior of undergraduate nursing students, and the influence of sociocultural background, lifestyle, and perceived life status. The results show that less alcohol consumption, better financial situation, and better work situation are positively correlated with health care utilization. Better physical health and sounder interpersonal relationships are positively correlated with health counseling.

Declarations

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We genuinely thank the participants for enrolling in the research program and taking time to fill the questionnaires.

Ethics Approval and Consent to Participate

The study was approved by the National Committee on Medical Research Ethics of Finland in April 2018 and was carried out following the Helsinki guidelines. To ensure confidentiality and anonymity, there were no questions regarding private information in the questionnaire. Researchers provided a detailed explanation to the participants beforehand. The participants were ensured that their participation should be voluntary and they had the right to withdraw from the study.

Consent for Publication

Not applicable.

Availability of Aata and Materials

All data generated or analysed during this study are included in this published article and its supplementary information files.

Competing Interests

The authors declare that they have no competing interests

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Authors' Contributions

Gerili Zaya (co-first author): Data curation; Methodology; Formal analysis; Original draft; Review & editing.

Shijia Li (co-first author): Data curation; Methodology; Formal analysis; Original draft; Review & editing.

Jingyu Pan (co-first author): Drafting the article; Formal analysis; Original draft; Review & editing.

Jinyu Zhang: Data acquisition; Supervision; Review & editing.

Anita Näslindh-Ylispangarb: Conceptualization; Review & editing.

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