

RESEARCH ARTICLE

Differences in Health Promoting Lifestyle Behavior of Health Management Students Based Upon Early Diagnosis Coverage in a Cancer Course

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Abstract

Background: This is a descriptive study to determine whether coursework that is focused on early diagnosis in cancer makes a difference in self-reported health promoting lifestyle behavior of students who study health management. **Materials and Methods:** The population of the study consisted of a sample of 104 students enrolled in the Department of Health Management at the Faculty of Health in Kirikkale University in Turkey. Forty-eight students enrolled in a course called “Early Diagnosis of Cancer” and fifty-six did not take this course. Demographic information was collected and the “Health Promotion Life-Style Profile (HPLP)” was used to collect health promotion data. Frequency and descriptive statistics including one-way ANOVA, Mann-Whitney U test, Kruskal Wallis tests were used to evaluate data. **Results:** The HPLP mean score of the students was found to be 127.5 ± 17.45 . The highest mean score was observed for self-fulfillment and health responsibility, while the lowest was for diet and exercise sub-scales. It was found that certain variables were effective in developing health promoting lifestyle behaviors such as choosing this job voluntarily, working status of father and participation in social activity ($p < 0.05$). In conclusion, it was found that the students had moderate levels of health promoting lifestyle behavior and they should be supported in terms of diet and exercise.

Keywords: Health promoting lifestyle behaviors - early diagnosis of cancer - university students

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Introduction

Cancer is one of the most important health problems in the world and in Turkey. Like in developed countries, cancer ranks as the second cause of mortality in Turkey, after coronary diseases. The World Health Organization (WHO) reports that cancer accounted for 7.4 million cases of mortality in 2004 and that this number will reach 12 million unless appropriate precautions are taken (WHO, 2010). According to the 2009 Statistical Yearbook of Turkey, the incidence of cancer in Turkey was 256.4 in one hundred thousand in males and 158.1 in one hundred thousand in females in 2006. Incidence and mortality of cancers in Turkey varies according to age and gender (Turkish Statistics Institute, 2009). On the other hand, certain factors such as old age, smoking, alcohol, ionized radiation, exposure to ultraviolet sunrays, some chemicals, some hormones, inadequate and unbalanced diet, inadequate physical activity and obesity increase the risk of cancer (WHO, 2010). For example, while diet based on food with a high fat content increases the risk of colon, uterine and prostate cancer, inadequate physical activity and obesity increase the risk of breast, colon, esophageal, renal and uterine cancer (National Cancer Institute, 2010).

Cancer is a preventable and treatable disease. Indeed,

the WHO asserts that more than 30% of deaths caused by cancer can be prevented (WHO, 2010). Early diagnosis and treatment is important in cancer. Early diagnosis in cancer increases the odds that the disease may be favorably treated; prevents disease-associated disabilities, and saves life. For these reasons, early screening of clinically-relevant signs and symptoms that to appropriate early disease management are important in cancer. In particular, early diagnosis increases the chances of improved morbidity and mortality in some types of cancer such as breast and cervical cancers in women and prostate in men and colon cancer in both genders (Fidaner, 2007; Jacobsen and Jacobsen, 2011).

The aims of the WHO’s “Health for Everyone” for the European region helps to guide European countries to improve health promoting lifestyles, decrease preventable health problems, and promote positive lifestyle (Oztek, 1992). According to the tenets of this program, everyone has the responsibility to protect and sustain their own health and adopt health promoting lifestyles. Health promoting lifestyles involve taking personal responsibility for health behaviors, including eating a balanced diet, engaging in regular and adequate exercise, not smoking, practicing appropriate hygienic measures, building positive interpersonal relationships and managing stress.

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Within this framework, individuals exhibit healthier dietary habits, improve their intellectual capacities, are protected from preventable diseases such as coronary diseases, keep immunizations appropriately updated, maintain normal body weight and can appropriately cope with stress (Arnold, 1999; Sanci et al., 2000).

Although healthy lifestyle behaviors are important for individuals in all periods of life, this is of primary importance during youth. Unhealthy practices and behaviors practiced during younger ages may continue in adulthood and result in increased health risks in later life (Lee and Loke, 2005). Previous studies reported that unhealthy behaviors might cause conditions such as coronary diseases, cancer, complicated births and psychological impairments in adults (Walker and Hill-Polerecky, 1996; Lee and Loke, 2005). It is quite difficult to change unhealthy behaviors adopted by adults. Therefore, developing health promoting lifestyle behaviors at younger ages very important (Walker and Hill-Polerecky, 1996; Ayaz et al., 2005).

For many youth, the college years represent a transition to autonomous adult roles and accepting responsibility for oneself. At the same time, these individuals are confronted with a new found level of freedom relating to lifestyle choices (e.g., what to eat and when, sleep routines, level of physical activity, and alcohol/nicotine use). As such, this unique developmental period may be an ideal time for the effective provision of preventive health information (Arnett, 1998; Dinzeo et al., 2013).

Therefore, acquisition of health protecting and promoting behaviors among university students is important as they are young individuals (Spellbring, 1991).

Knowledge and skills the students who take health education gain from this education process has many benefits. Literature data reveals that knowledge and skills the students gain in education process will give them the opportunity to improve their health, improving their own health and learning health care will contribute to full understanding of care for other people and that the students will be able to perform their roles as a health educator effectively as a role model in terms of health promoting behaviors (Lachman, 1996; Connolly et al., 1997; Burkhardt and Nagai-Jacobson, 2001).

In this context, healthcare professionals who can work in every stage of health care services have an important role in promoting health, preventing cancer, understanding the importance of early diagnosis in cancer and acquisition of positive health behavior in individuals. Health care professionals can influence the group they serve in terms of being a role model and health care education with their lifestyles due to their professional responsibility and social roles. Therefore, healthcare professionals should recognize the importance of promoting their health and be a role-model for the society from early years of their educational lives (Pender et al., 1992; Nutbeam, 1997; Rush, 2005). It is believed that determining health promoting lifestyle behaviors by the students who receive education in the field of health will give them the opportunity to evaluate themselves realistically and will guide the educators to set out the targets of the education they will provide and

to prepare curricula.

This is a descriptive study which aims to determine whether coursework that is focused on early diagnosis in cancer makes a difference in self-reported health promoting lifestyle behaviors of the students who study health management.

Materials and Methods

At the time this study was conducted, there were a total of 111 students enrolled in department enrolled in the Department of Health Management at Faculty of Health in Kırıkkale University in Turkey. All students were invited to participate in this study; seven students declined to take part. Thus, data were collected from 104 voluntary student participants. A research-designed Descriptive Characteristics Form and the Health Promotion Life-Style Profile (HPLP) were used for data collection.

Descriptive characteristics form contained 10 questions prepared by the researcher based on literature data (Connolly et al., 1997; Shriver and Scott-Stiles, 2000; Burkhardt and Nagai-Jacobson, 2001). The questions in the form included age, gender, type of family, parents' educational level, current settlement place, status of taking part in social activities, status of having a disease and smoking.

Health Promotion Life-Style Profile, the scale was developed by Walker et al. (1987). Validity and reliability study of the scale into Turkish was carried out by Esin (1999) and Cronbach's Alpha value was found as 0.91. This is a four-item Likert scale consisting of 48 statements. It has six sub-dimensions which include self-fulfillment, health responsibility, exercise, diet, interpersonal support and stress management. All items of the scale are positive and scores as follows: *i*) "Never"; *ii*) "Sometimes"; *iii*) "Frequently"; *iv*) "Regularly". Minimum possible score from the scale is 48 while maximum score is 192. As total increase, health promoting lifestyle behaviors are considered to increase positively (Esin, 1999).

The students were informed by the researcher about the aim of the study before data collection and were explained that participation was voluntary. Before the study was carried out, the written permissions of the institutions where the study was to be conducted were obtained. The students to participate in the study were first told that it was entirely their own decision whether to participate in the study, that they should not write their names on the questionnaire, that the data gathered in this study would only be used within the scope of the study and that the confidentiality was definitely ensured, and then their verbal informed consents were obtained.

Data were collected at the end of the semester among all health management students who took early diagnosis of cancer and did not take this course. Data collection forms that included both the descriptive characteristics and the HPLP were administered to a total of 104 students who agreed to participate in the study. Verbal consents were taken from the students. "Early Diagnosis in Cancer" is an elective course in *ii*) grade of Faculty of Health Sciences. Since the students enrolled in Health Management selected this course, the study was limited to the department of

Health Management in Faculty of Health Sciences. SPSS 18.0 package program was used to transfer data into computer media. Number, percentages one-way ANOVA, the significance of the difference between two means test, Mann-Whitney U test, Kruskal Wallis tests were used for data evaluation.

Results

Based on the descriptive characteristics of the students who participated in the study it was found that mean age was 20.83; 44.2% of the students were male, 58.7% graduated from standard high school. It was found that 44.2% were i) Grade students 31.7% were ii) Grade students 24.0% were iii) Grade students and 55.8% were placed in this department partially voluntarily. Of the students 51.9% stayed in dormitories, the majority of them (74.0%) had a nuclear family, mothers of 87.5% and fathers of 63.5% were primary school graduates. It was found that 79.8% of students reported their financial status as moderate level, the majority (74.0%) took part in social activities, the majority (83.7%) did not smoke and 76.9% did not have any disease. It was found that almost half of the students (46.2%) took early diagnosis in cancer elective course, 53.8% did not take this course and 65.4% had knowledge about early diagnosis in cancer and they mainly gained this knowledge (67.6%) from school courses.

Table 1 presents distribution of mean scores of HPLP scale and sub-scales according to the status of taking early diagnosis in cancer course. It was observed that HPLP mean scores of the students who took early diagnosis in cancer course (129.72±18.76) was higher than those of the students (125.60±16.15) who didn't take the course. However, statistical evaluation showed that there was no statistically significant difference between mean scores of the students according to the status of taking early diagnosis in cancer course ($p>0.05$). It was found that there was no statistically significant difference between the students in diet, exercise, stress management, interpersonal support and self-fulfillment sub-scales according to status of taking early diagnosis in cancer course. However, there was a significant difference in interpersonal support sub-

scale ($p<0.05$).

Distribution of HPLP total mean scores of the students according to some of their descriptive characteristics are presented in Table 2. There was a statistically significant difference between exercise and self-fulfillment sub-scales of HPLP scale according to working status of their fathers ($p<0.05$).

It was observed that the students who were placed to this department upon their will had higher scores in health responsibility, exercise and self-fulfillment sub-scale mean scores than those who were placed to the department reluctantly. Statistical analysis showed that there was a statistically significant difference between exercise, health responsibility and self-fulfillment mean scores of the students according to the status of being placed in this department upon their will ($p<0.05$).

It was observed that health responsibility, exercise, interpersonal support, stress management and self-fulfillment sub-scale mean scores of the students who participated in a social activity were higher than those who did not take part in a social activity. Statistical evaluation showed that there was a statistically significant difference between health responsibility, exercise, interpersonal support, stress management and self-fulfillment mean scores of the students according to the status of taking

Table 1. Distribution Of Mean Scores of HPLP Scale and Sub-Scales According to the Status of Taking Early Diagnosis in Cancer Course

HPLP Sub-Scales	Status of Taking Early Diagnosis In Cancer Course		$\bar{X}\pm SS$	Statistical Evaluation
Exercise	Yes	48	11.45±3.30	Z=-0.082 p=0.935
	No	56	11.39±3.04	
Diet	Yes	48	15.29±3.14	Z=-0.0256 p=0.798 F=0.002
	No	56	15.30±3.39	
	Yes	48	24.70±5.41	
Health Responsibility	No	56	23.30±4.87	p=0.171 F=2.465
	Yes	48	17.91±2.88	
Stress Management	No	56	17.73±3.28	p=0.763
Interpersonal Support	Yes	48	21.56±3.60	Z=-2.389; p=0.017
	No	56	19.75±3.97	
Self-Fulfillment	Yes	48	38.14±6.10	F=0.185 p=0.543
	No	56	37.47±5.08	
Total HPLP	Yes	48	129.72±18.76	F=0.148; p=0.233
	No	56	125.60±16.15	

Table 2. Distribution of HPLP Total Mean Scores of the Students According to Some of Their Descriptive Characteristics

Descriptive Characteristics	Scores Of HPLP Scale And Sub-Scales					
	Diet	Health Responsibility	Exercise	Interpersonal Support	Stress Management	Self-Fulfillment
Working Status Of Their Fathers						
Working	15.53±3.21	24.65±5.00	12.01±3.25	21.14±3.74	18.23±3.06	38.65±5.41
Not Working	14.92±3.35	22.82±5.25	10.47±2.75	19.70±4.00	17.15±3.05	36.35±5.57
Statistical Evaluation	Z=-1.144 p=0.253	F=0.397 p=0.080	Z=-2.111 p=0.035	Z=-1.626 p=0.104	F=0.087 p=0.082	F=0.001 p=0.041
The Status Of Being Placed In This Department Upon Their Will						
Placed Willingly	15.81±2.98	25.68±4.85	12.25±3.19	21.15±3.54	18.38±3.01	39.34±4.73
Placed Partially Willingly	14.98±3.45	22.92±4.91	10.84±3.05	20.15±4.18	17.53±3.00	36.80±5.89
Placed Unwillingly	13.00±2.82	15.50±3.53	10.00±0.00	20.50±0.70	13.50±4.94	31.50±2.12
Statistical Evaluation	X ² =3.196 p=0.202	F=7.025 p=0.001	X ² =7.798 p=0.020	X ² =1.572 p=0.456	F=3.052 p=0.052	F=4.117 p=0.019
Taking Part In Any Social Activity						
Yes	15.55±3.16	24.96±4.59	11.85±3.35	21.24±3.82	18.29±2.84	38.76±4.97
No	14.53±3.50	21.00±5.65	10.18±2.05	16.44±3.50	16.44±3.40	34.88±6.25
Statistical Evaluation	Z=1.292	F=1.103	F=6.869	Z=-2.294	F=2.854	F=1.594

part in any social activity ($p < 0.05$).

Discussion

HPLP mean scores of the students who participated in the study was 127.52 ± 17.45 . It was found that none of the students received full score from the scale; the lowest score was 78 and the highest score was 168. Considering that minimum possible score from the scale is 48 and maximum score is 192, it can be stated that the students have moderate levels of health promoting lifestyle behaviors.

Analysis of mean scores of the students from the scale according to the status of taking early diagnosis in cancer course revealed that there was a statistically significant difference between the students who took (129.72 ± 18.76), and didn't took the course (125.60 ± 16.15). Only the increase in early diagnosis in cancer sub-scale mean scores of the students who took early diagnosis in cancer course was found to be statistically significant (Table 1). HPLP scores of the students who took early diagnosis in cancer course were not statistically significant than those who did not take the course. However, the fact that the students who took early diagnosis in cancer course had higher scores than those who didn't take the course is important in terms of inclusion of early diagnosis in cancer and similar courses in the curricula to show the effects on protection and promotion of health in individuals. It is emphasized in literature that curricula of schools of health should include course for health promotion (Hills and Lindsey, 1994; Nutbeam, 1997). Syllabus of early diagnosis in cancer course contains the concept of health, healthy diet, and exercise, factors affecting society, family and environmental health. The content of the course are believed to contribute to higher HPLP scores of the students. Particularly the significant increase in interpersonal support scores can be considered as an indication of developing positive health conscience and awareness gained by the students.

Previous studies report that some courses offered to the students during their education improved health promoting lifestyle behaviors. In a study carried out by Yeh et al. to evaluate health promoting lifestyle behaviors of 42 nursing students who were taking public health course in Taiwan before and after taking the course, it was found that physical activity and diet behaviors of students significantly changed at the end of the course (Yeh et al., 2005). Hsiao et al. evaluated the effect of health promoting training provided to nursing students, HPLP mean scores significantly increased after the training (Hsiao et al., 2005). Ayaz et al. found that there was a statistically significant increase in diet and health responsibility sub-scale mean scores of the students who took health protection and promotion courses (Ayaz et al., 2005).

It is reported that providing early diagnosis in cancer and similar courses at schools have a positive impact on health lifestyle behaviors of students; helped them understand that their health depend on their behaviors and developed positive health awareness in individuals. For this reason, creating awareness of healthy lifestyle and increased importance given to health and healthy life can

only be possible by controlling the health of individuals and helping them adopt a complete health potential (Ayaz et al., 2005; Coban, 2010).

It was found that the students whose fathers were working had higher exercise and self-fulfillment mean scores than those whose fathers were not working and that this was statistically significant ($p < 0.05$, Table 2). It can be thought that psychological problems experienced by the students whose fathers were unemployed were reflected in general of their behaviors. In addition, it is believed that unemployed status of father can have a negative impact on socio-economic level. For this reason, low health promoting behaviors was an expected result. Ulla and Pérez found that economic level affected interpersonal support status (Ulla and Perez, 2010). It was reported that increased economic level in health promoting model increased level of having positive health behavior (Edelman and Mandle, 1998). These result support study results.

We found that health responsibility, exercise and self-fulfillment sub-scale mean scores of the students who chose their professions voluntarily were significantly higher ($p < 0.05$, Table 2). High health promoting lifestyle behaviors among the students who study in department of health voluntarily indicate that they adopted these behaviors more. Furthermore, choosing their professions voluntarily will indicate that they decide according to their own decisions and this behavior corresponds to self-fulfillment among health promoting lifestyle behaviors. An individual who achieved self-fulfillment recognizes himself/herself and lives according to his/her aims. He/she has self-respect and accepts himself/herself as he/she is. He/she expresses his/her emotions and opinions appropriately. He/she is open to change and new experiences (Ayaz et al., 2005).

Self-fulfillment, exercise, health responsibility, stress management, interpersonal support score variance of the students who didn't take part in any activity were found to be significant ($p < 0.05$, Table 2). Cihangiroglu and Deveci found that the students who had a hobby had higher self-fulfillment scores than those who hadn't. Self-fulfillment can be possible by recognizing oneself (Cihangiroglu and Deveci, 2011). An individual who recognizes himself/herself knows what to do to feel happy and satisfied. Taking part in social activities and having a hobby might contribute to knowing oneself (Ayaz et al., 2005). The fact that the students who took part in social activities had high self-recognition and thus self-fulfillment scores was an expected result. Taking part in social activities and having a constantly active life are thought to develop interpersonal relationships positively.

In conclusion, we found that health promoting lifestyle behavior levels of the students were at medium level. While self-fulfillment and health responsibility had the highest mean scores among sub-scales, exercise had the lowest mean scores. HPLP mean statistics of the students who took early diagnosis in cancer course were found to be higher than those, although not significantly, who did not take that course. It was found that certain variables such as choosing this job voluntarily, working status of father and status of taking part in social activities

were effective on developing health promoting lifestyle behaviors. Based on these findings, early diagnosis in cancer course in the curricula should be developed and included in the curricula; the students in other programs should be encouraged to take this course and curricula programs should include the areas such as exercise, diet and stress management from which the students received lower scores.

References

- Arnett JJ (1998). Learning to stand alone: the contemporary American transition to adulthood in cultural and historical context. *Human Development*, **41**, 295-315.
- Arnold E (1999). Health promotion and client learning needs. In Arnold E and Boggs KU (Eds.), *Interpersonal Relationships Professional Communication Skills for Nurses*. 3. print, United States of America: W.B. Saunders Company, pp 347-367.
- Ayaz S, Tezcan S, Akıncı F (2005). Health promotion behavior of nursing school students. *Cumhuriyet University Nursing Journal*, **9**, 26-34.
- Burkhardt M, Nagai-Jacobson M (2001). Nurturing and caring for self. *Nurs Clin N Am*, **36**, 23-31.
- Cihangiroglu Z, Deveci SE (2011). Healthy life style behaviours and related influencing factors of the students of elazig high school of health sciences of firat university. *Firat Tip Dergisi*, **16**, 78-83.
- Connolly M, Gulanic M, Keough V, et al (1997). Health practice and critical care nurses: are these nurses' good role models for patients? *Am J Crit Care*, **6**, 261-26
- Coban A, Kavlak O, Ozbasaran, F (2010). The evaluation of school of health students' knowledge and behavior of healthy life-styles of related to importance to prevent cancer. *Asian Pac J Cancer Prev*, **11**, 773-6.
- Dinzeo TJ, Thayasivam U, Sledjeski EM (2013). The development of the lifestyle and habits questionnaire-brief version: relationship to quality of life and stress in college students. *Prev Sci*, [Epub ahead of print].
- Edelman CL, Mandle CL (1998). *Health promotion throughout the life span*. Mosby Comp. Philadelphia
- Esin N (1999). Healthy life style behavior scale: A reliability and validity study. *Nursing Bultein*, **12**, 87-95.
- Fidaner C (2007). Early diagnosis in cancer: scanning and recording programs. In: scanning and recording Programs: Tuncer M (ed), *Cancer Control In Turkey*, Sağlık Bakanlığı Yayınları, No: 707, Ankara pp 319-332.
- Haughey BP, Kuhn MA, Dittmar SS, et al (1992). Health care of critical care nurses. *Heart and Lung*, **21**, 203-8.
- Hills MD, Lindsey E (1994). Health promotion: a viable curriculum framework for nursing education. *Nursing Outlook*, **42**, 158-62.
- Hsiao YC, Chen MY, Gau YM, et al (2005). Short-term effects of a health promotion course for taiwanese nursing students. *Public Health Nur*, **22**, 74-81.
- Jacobsen GD, Jacobsen KH (2011). Health awareness campaigns and diagnosis rates: evidence from National Breast Cancer Awareness Month. *J Health Econ*, **30**, 55-6.
- Lanchman V (1996). Stres and self-care revisited: a literature review. *Holist Nurs Pract*, **10**, 1-12.
- Lee RLT, Loke AJTY (2005). Health promotion behaviors and psychosocial well-being of university students in hong kong. *Public Health Nursing*, **22**, 209-220.
- Nutbeam D (1997). Promoting health and preventing disease: an international perspective on youth health promotion. *Journal of Adolescent Health*, **20**, 396-402.
- Öztek Z (1992). *Basic health services*. 2. print. Hacettepe Public Health Foundation, Ankara pp 49-55.
- Pender NJ, Barkauskas VH, Hayman L, et al (1992). Health promotion and disease prevention: toward excellence in nursing practice and education. *Nursing Outlook*, **40**, 106-12.
- Rush KL, Kee CC, Rice M (2005). Nurses as imperfect role models for health promotion. *West J Nurs Res*, **1**, 166-83.
- Sanci LA, Coffey CM, Veit FC, et al (2000). Evaluation of the effectiveness of an educational intervention for general practitioners in adolescent health care: randomized controlled trial. *BMJ*, **320**, 224-9.
- Shriver C, Scott-Stiles A (2000). Health habits of nursing versus non-nursing students: a longitudinal study. *J Nur Educ*, **39**, 308-14.
- Spellbring M (1991) Nursing role in health promotion. *Nur Clin North Am*, **26**, 805-13.
- Ulla Diez SM, Perez-Fortis A (2010). Socio-Demographic predictors of health behaviors in mexican college students. *Health Promot Int*, **25**, 85-93.
- Walker SN, Hill-Polerecky DM (1996). Psychometric evaluation of the HPLP II. Unpublished Manuscript, University of Nebraska Medical Center, Available at http://app1.unmc.edu/Nursing/conweb/HPLPII_Abstract_Dimensions.pdf
- Walker SN, Sechrist KR, Pender NJ (1987). The health-promoting lifestyle profile: development and psychometric characteristics. *Nur Res*, **36**, 76-81.
- Yeh L, Chen CH, Wang CJ, et al (2005). A preliminary study of a healthy-lifestyle-promoting program for nursing students in taiwan. *J Nur Educ*, **44**, 563-565.