

# Effect of a health promotion course on health promoting behaviours of university students

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أثر دورات تعزيز الصحة على السلوكيات المعززة للصحة لدى طلاب الجامعات  
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**الخلاصة:** كان الهدف من هذه الدراسة الارتبادية التي جرت في تركيا التعرف على أثر دورة تدريبية حول تعزيز الصحة، في تقوية أنشطة الرعاية الذاتية والسلوكيات المعززة للصحة لدى طلاب جامعة كوجا ألي. وقد شارك 41 طالباً من كلية الهندسة المدنية في دورة نظمتها الباحثة واستغرقت 15 أسبوعاً وتضمنت 30 ساعة من المحاضرات داخل الصفوف الدراسية. وقاست الباحثة النجاح التعليمي باختبارات تداخلية سابقة ولاحقة للدورة، باستخدام سلم قياس أنشطة الرعاية الذاتية وسلم قياس المرتسم الثاني لأنماط الحياة المعززة للصحة. وبعد انقضاء الدورة لاحظت الباحثة ازدياداً ملحوظاً في أحرار أنشطة الرعاية الذاتية والسلوكيات المعززة للصحة بين طلبة الجامعة. وقد أظهر الطلاب ذوو الأحرار المنخفضة قبل الدورة، أعلى مستويات التقدم بعدها.

**ABSTRACT** The purpose of this pilot study in Turkey was to determine the effects of a health promotion course on enhancement of self-care agency and health-promoting behaviours of University of Kocaeli students. A group of 41 civil engineering students attended a 15-week course developed by the investigator, which included 30 hours of classroom lectures. The success of the education was measured by pre- and post-intervention tests using the Exercise of Self-care Agency scale and the Health Promotion Lifestyle Profile II scale. After the course, the self-care agency and health-promoting lifestyle scores of the university students increased significantly. University students with the lowest scores before the course displayed the most progress after the course.

## Effets d'un cours de promotion de la santé sur les comportements des étudiants propices à la santé

**RÉSUMÉ** L'objectif de cette étude pilote menée en Turquie était de déterminer les effets d'un cours de promotion de la santé sur l'amélioration de la capacité d'auto-soins et le renforcement des comportements favorables à la santé des étudiants de l'Université de Kocaeli. Un groupe de 41 étudiants en génie civil a participé à un cours de 15 semaines mis au point par le responsable de l'étude et comprenant 30 heures de cours magistraux. La réussite de l'enseignement a été mesurée par des tests réalisés avant et après le cours sur la base de l'échelle ESCA (*Exercise of Self-care Agency*) et de l'échelle HPLP II (*Health Promotion Lifestyle Profile II*). À la fin du cours, les scores des étudiants en ce qui concerne la capacité d'auto-soins et les modes de vie favorables à la santé ont augmenté de façon significative. Les étudiants ayant réalisé le plus de progrès étaient ceux dont les scores étaient les plus faibles avant le début du cours.

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## 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. Health promotion includes the facilitation of an individual's potential and energy use, an improved quality of life, productivity and use of one's abilities regarding health. For the health of future generations, young people deserve the attention of public health professionals. Increased understanding of health practices and greater efforts toward promoting healthy behaviours and well-being among young adults are essential [1–3].

Young people represent the future of families, communities and nations [4]. They are at a dynamic transition period of growth and development characterized by rapid, interrelated changes of body, mind and social relationships [5]. At this stage of physical, psychological and sexual development, young people gradually assume responsibility for their own health [2]. Adolescence and young adulthood are critical periods in the development and stabilization of health and risk behaviour [4]. Data have shown that universities contribute to the promotion of an individual's health [1]. Unhealthy practices and behaviours formed in college and university can have a sustaining impact on health in later life [2,4]. Adjustable unhealthy habits, such as inadequate nutritional intake, rest, and exercise are common among university students. There is a need for health education programmes that will change their behaviours and lifestyles and impart knowledge about how to improve their health [2,4]. However, young people are considered to be at a relatively healthy stage of life and, as such, are not viewed as a priority in health promotion efforts

throughout the world [4]. Promotion of healthy behaviours among young people is therefore neglected.

Universities are establishments where knowledge acquisition is encouraged and skills are taught. The stage of being a university student is a transition period from adolescence to adulthood. Adolescents and youths often live and study at university for approximately 4–5 years. It is therefore a significant time in their lives [6]. It has been shown that unhealthy habits exist among college and university students [2]. Furthermore, other research has indicated that there is a strong need for health education promotion in the university setting [1], and that university-based health promotion programmes could have a substantial effect on students' knowledge, behaviours and lifestyles [1,7,8].

Promoting self-responsibility during college and university years can set lifelong positive health habits. Young people experiment with and form many of their behaviours and lifestyles during this period. They should be encouraged to take responsibility for their personal health and well-being [9]. Educating students about health promotion and self-care can be expected to increase their self-care abilities and promote health-improving behaviours such as increased physical activity, nutritional food choice and regular sleep habits. Those who have these qualities adapt to their environment better. They create healthy lifestyles, which in turn create a more pleasant work environment. They present themselves in a manner that promotes a positive image of health. Consequently, it has been suggested that these individuals function as change agents in health promotion [10–13].

One of the most important ways to promote health is to improve the self-care agency of an individual and this may

be achieved through health education. According to Whitehead, health education is an activity that seeks to inform the individual about the nature and causes of health/illness and that individual's personal level of risk is associated with his/her lifestyle-related behaviour [14]. Health education seeks to motivate the individual to accept a process of behavioural change through directly influencing their values, beliefs and attitudes, especially when an individual is at risk or has already been affected by illness/disease or disability.

The objective of this study in Turkey was to identify the effect of a health promotion course on enhancement of health promoting behaviours of students at the University of Kocaeli. The study examined the effects on self-care agency and health-promoting lifestyles of an elective health promotion course included in the curriculum of civil engineering students.

## Methods

The study was quasi-experimental. The design of the study was a single group pre-post intervention test to determine the effect of a health promotion course on university students. It was conducted in the civil engineering faculty at the University of Kocaeli, Kocaeli, Turkey. The 15-week, 30-hour health promotion course (2 credits) is scheduled as an elective course in the 2nd semester of the 2nd year and is required for graduation. The health promotion course was delivered by the researcher.

The study group was 41 civil engineering students from the University of Kocaeli enrolled in this course for the year 2004-05. All agreed to participate in this research. The study protocol was approved by the school administration and written permission was obtained.

The content of the classroom lectures encompassed the following: definition

and purpose of health promotion; human concept; health promotion throughout the lifespan; environment concept; universal self-care; health and disease concepts; healthy lifestyles; hygiene self-care; nutrition for healthy humans; sleep and rest; healthy sports and yoga; health responsibility; stress management; developing of interpersonal relationships; and performance enhancement and problem-solving. Teaching methods included lectures taught by the instructor, group discussions on individual experiences, demonstrations and instruction with video.

Data were collected by questionnaires that were applied before and after the course. A questionnaire form collected data about sex and age of the student. The Exercise of Self-care Agency (ESCA) and the Health Promotion Lifestyle Profile II (HPLP-II) scales were used. Before the start of the course in the spring term, university students were asked to fill out the 2 scales (pre-intervention test). The scales took about 20 minutes to complete. Approximately 4 months later, following the health instruction course, the 2 scales were reapplied (post-intervention test). The research period was from February to May 2005.

The ESCA scale was developed by Kearney and Fleischer in 1979 [15]. The scale is the most commonly used among those that were developed after the introduction of the concept of self-care agency. It includes 43 statements that evaluate attitudes of responsibility for self; motivation to care for oneself; application of knowledge to self-care; the valuing of health priorities; and self-esteem. The scale was translated into Turkish in 1993 by Nahcivan and its reliability and validity has been established [16]. There are 35 statements in the Turkish version of the scale. It is 5-item Likert scale with scores from 0 to 4. "Very uncharacteristic of me" receives 0

point, "Somewhat uncharacteristic of me" 1 point, "No opinion" 2 points, "Somewhat characteristic of me" 3 points and "Very characteristic of me" 4 points. In some statements, scores are reversed and scored as 4, 3, 2, 1 and 0. There are no sub-groups for the scale, and evaluations are performed according to the total score. The highest overall score is 140.

The HPLP-II scale was developed by Walker, Sechrist and Pender in 1987 [9]. The scale measures health promoting behaviours conceptualized as a multidimensional pattern of self-initiated actions and perceptions that serve to maintain or enhance a level of wellness, self-actualization and fulfilment of the individual. The scale was translated into Turkish in 1998 by Esin and its reliability and validity studies are complete [17]. There are 48 statements in the Turkish version of the scale and 6 subscales. The health promoting behaviour subscales are as follows: health responsibility; physical activity; nutritional habits; spiritual growth; interpersonal relations; and stress management. Health responsibility is about the importance of improving one's health and the health of the others; physical activity includes adhering to regular exercise patterns; nutritional habits include establishing meal patterns and making food choices; spiritual growth includes attaining self-actualization and fulfilment; interpersonal relations deal with maintenance of relationships involving a sense of intimacy and closeness; stress management includes both recognizing the sources of stress and taking action to control stress and achieve relaxation. The scale is of a 4-point Likert-type and there are 4 choices for each statement, scored from 1 to 4. "Very uncharacteristic of me" receives 1 point, "Somewhat uncharacteristic of me" 2 point, "Somewhat characteristic of me" 3 points and "Very characteristic of me" 4 points.

The data were evaluated and analysed with descriptive and inferential statistics as percentages, means, standard deviation (SD) and analysis of variance.

## Results

Of the 41 civil engineering students who volunteered to participate in the study, 6 (14.6%) were women. The mean age of the sample was 20.7 years (SD 1.05; range 19–23 years).

The students' scores overall on the 2 scales improved after completion of the course. The ESCA scores of university students before and after the health promotion course are shown on Table 1. The mean ESCA scores were 89.43 (SD 20.62) before the health promotion course and 94.17 (SD 18.24) after the course, a 5-point increase. The difference was statistically significant ( $t = -2.17, P = 0.05$ ).

The total scores of the 6 subscales of health promoting behaviours were calculated by adding the 4-point Likert scale scores for all items within each subscale. The total score was calculated as the sum of all subscale scores. Generally higher scores indicate more health-promoting behaviours. Table 1 compares the 6 subscale scores on the HPLP-II before and after the health promotion course and shows significant differences using the *t*-test.

Before the course, the mean for the total HPLP-II was 114.12 (SD 18.52), which increased 11 points after the course to 125.00 (SD 20.50). The difference was statistically significant ( $t = -4.858, P < 0.001$ ). Students' scores increased significantly on the post-intervention test in the 4 categories of health responsibility, physical activity, spiritual growth and stress management (Table 1).

Before the course, the mean score of university students on the HPLP-II subscale

**Table 1 Difference in pre- and post-intervention tests on the Exercise of Self-care Agency (ESCA) scale and the 6 subscales of the Health Promotion Lifestyle Profile II (HPLP-II) scale for university students ( $n = 41$ )**

Variable	Pre-intervention		Post-intervention		Paired <i>t</i> -test	<i>P</i> -value
	Mean score	SD	Mean score	SD		
<i>ESCA</i>						
Total (35 items)	89.43	20.62	94.17	18.24	-2.17	0.03
<i>HPLP-II</i>						
Total (48 items)	114.12	18.52	125.00	20.50	-4.858	< 0.001
Health responsibility (10 items)	16.92	4.82	20.12	5.29	-3.992	< 0.001
Physical activity (5 items)	10.31	3.57	11.24	3.64	-2.256	0.03
Nutritional habits (6 items)	15.75	10.89	14.46	3.72	0.430	0.669
Spiritual growth (13 items)	35.92	5.75	39.14	5.99	-3.677	0.001
Interpersonal relations (7 items)	19.17	3.76	20.24	4.43	-1.797	0.080
Stress management (7 items)	17.58	3.54	19.12	4.25	-3.134	0.003

*SD* = standard deviation.

“Health responsibility” was 16.92 (SD 4.82), and after the course increased 4 points to 20.12 (SD 5.29). The difference was statistically significant ( $P < 0.001$ ). The mean score on the “Physical activity” subscale also increased significantly from 10.31 (SD 3.57) to 11.24 (SD 3.64) ( $P = 0.03$ ). The mean score on the subscale “Spiritual growth” increased 4 points from 35.92 (SD 5.75) to 39.14 (SD 5.99) ( $P = 0.001$ ) and the “Stress management” subscale increased 2 points from 17.58 (SD 3.54) to 19.12 (SD 4.25) before and after the course ( $P = 0.003$ ).

The mean score on the HPLP-II “Interpersonal relations” subscale increased slightly before and after the course from 19.17 (SD 3.76) to 20.24 (SD 4.43), but the difference was not statistically significant ( $t = -1.797$ ,  $P = 0.080$ ).

A slight decrease was seen in the mean scores on the HPLP-II subscale “Nutritional habits” from 15.75 (SD 10.89) before the course to 14.46 (SD 3.72) after the course,

but the difference was not statistically significant ( $t = 0.430$ ,  $P = 0.669$ ).

## Discussion

This pilot study aimed to evaluate the efficacy of a health promotion course on university students by examining their self-care agency and health-promoting behaviours before and after the course. Following the health promotion course, there was an increased average score for items on the ESCA scale. The course was expected to increase the self-care abilities of students. The results of this study are similar to findings reported by Hartweg and Metcalfe [18], Altun et al. [19] and Hsiao et al. [3]. The study by Altun et al. showed that nursing students who give high priority to independence also have firm self-caring abilities. In the same study, those with an appreciation of aesthetic value were seen to have high self-caring abilities.

Consequently, it has been suggested that they function as change agents in health care. Those who have these qualities adapt to their environment in a way so as to please their patients and create a pleasant work environment for themselves and others [20]. After completion of the nursing curriculum, analysis of covariance on post-intervention test mean scores indicated that nursing students had significantly higher self-care scores. It may be stated that health education given to the university students enhances their self-care agency and that health education is more beneficial for those who have had less self-care agency [19]. Several research projects have incorporated Orem's self-care theory. Kearney and Fleischer developed an instrument to measure a person's exercise of self-care agency and administered it to nursing students in an associate degree programme and to students in 2 psychology courses [15]. The study concluded that people who exercise a high degree of self-care agency describe themselves as self-controlled, dependable, assertive, intelligent, confident, responsible, helpful and adaptable. Using self-care strategies to make lifestyle changes in the study of Timmerman included social support, tailoring strategies and self-monitoring [21]. This result suggested that health promotion education was significantly related to self-care agency in a young population.

Following the health promotion course, the HPLP-II scales overall showed an increased average score of the participants, indicating significant improvement in health promoting behaviours. The results show that the profiled students were more actively engaged in a total health promotion lifestyle. The HPLP-II scales include health responsibility, physical activity, nutritional habits, spiritual growth, interpersonal relations and stress management subscales. We observed a significant improvement in

health responsibility and health promoting behaviours as a result of the health promotion course. The results of this study are similar to findings reported by Callaghan [22], Choi Hui [23] and Ecevit-Alpar, Şenturan and Sabuncu [24].

The students' weakest performance was on nutritional habits, which decreased slightly although not significantly. This finding is similar to that of other studies on baccalaureate nursing students [24] and university students in Hong Kong [2]. According to Lee and Yuen Loke, food consumption patterns of university students tend involve skipping meals and eating "fast foods" and snacks [2].

Students were also weak on interpersonal relations. This finding is similar to findings reported by Ulupınar [25] and Kaya [26] in İstanbul University. Students' lives are filled with adjustment problems, new responsibilities, study pressures and peer interactions and involvement. They often feel helpless under the burden of their roles and responsibilities and have a pervasive sense that they can do nothing to change the state of existing problems [6]. An education involving such a degree of problems also affects the interpersonal relations skills of the students. Therefore it is important to evaluate students' abilities in interpersonal relations and factors that influence interpersonal relations skills. Open discussion between students and instructors concerning issues of interpersonal relations may help students to process information about interpersonal relations. In addition, development of self-awareness will enhance their objectivity and problem-solving capacity.

For health responsibility, the median score of the HPLP-II was higher for knowledge on preventive health and healthy behaviour. Therefore, it may be concluded that in the university curriculum, health education is effective in enhancing the health

responsibility of individuals. This includes attending to and accepting responsibility for one's health and being educated about health and seeking professional assistance when necessary. When student health strategies begin to be applied, students will have sufficient and necessary knowledge and skills to protect and improve their health. As a result of this, they will place more importance on improving their health and the health of others. We also observed a significant improvement in health promoting behaviours such as adhering to regular exercise patterns, attaining self-actualization and self-fulfilment, maintaining intimate and close relationships, recognition of the sources of stress and taking action to control stress and achieve relaxation.

We observed a remarkable improvement in self-care behaviours and health promoting behaviours as a result of the health promotion course. We may confirm that a positive relationship exists between

this course and the promotion of healthy behaviour in university students. Therefore, it may be concluded that health promotion education in the university curriculum is effective in enhancing the self-care agency of individuals and that health education is more beneficial for those who had less self-care agency. Therefore, each university should be encouraged to develop a health behaviour control and health promotion programme for their students. We recommend establishing this type of course as part of the regular university education.

We would like to state that the results of the study might not be reliable due to the small sample size. Additional advanced researches with larger groups are needed to obtain more affective and reliable outcomes. It is hoped that professional health educators and other practitioners will find this study data useful and will be able to build on these findings in their future research.

## References

1. Altun İ. The project of health promotion at university of Kocaeli students: planning and practice of health education. In: Conk Z, ed. *3rd International, 10th National Nursing Congress abstract book*. Izmir, Turkey, Ege University Nursing High School, 2005:129.
2. Lee RLT, Yuen Loke AJT. Health promoting behaviors and psychosocial well-being of university students in Hong Kong. *Public health nursing*, 2005, 22(3):209–20.
3. Hsiao YC et al. Short-term effects of a health promotion course for Taiwanese nursing students. *Public health nursing*, 2005, 22(1):74–81.
4. *Adolescent health and development: the second decade*. Manila, World Health Organization, Regional Office for the Western Pacific Region, 1998.
5. *Coming of age: from facts to action for adolescent sexual and reproductive health*. Geneva, World Health Organization, 1979.
6. Altun İ. The perceived problem solving ability and values of student nurses and midwives. *Nurse education today*, 2003, 23:575–84.
7. Stock C, Wille L, Krämer A. Gender-specific health behaviors of German university students predict the interest in campus health promotion. *Health promotion international*, 2001, 16(2):145–54.
8. Geiger BF et al. Working with colleges and universities to enhance the health of students and schools. *Health promotion practice*, 2002, 3(1):50–5.

9. Walker SN, Sechrist K, Pender NJ. The health-promoting lifestyle profile: development and psychometric characteristics. *Nursing research*, 1987, 36(2):77–81.
10. Orem DE. *Nursing: concepts of practice*, 5th ed. St Louis, Mosby, 1995.
11. *Ottawa charter for health promotion. First international conference on health promotion, Ottawa, 21 November 1986*. Geneva, World Health Organization, 1986 (WHO/HPR/HEP/95.1).
12. Pender NJ. *Health promotion in nursing practice*. Norwalk, Connecticut, Appleton and Lange, 1987.
13. Altun İ. Nursing values. In: Callara LE, ed. *Nursing education challenges in the 21st century*. Washington, Nova Science Publishers, 2007:55–82.
14. Whitehead B. Health promotion and health education: advancing the concepts. *Journal of advanced nursing*, 2004, 47(3):311–20.
15. Kearney B, Fleischer BL. Developments of an instrument to measure exercise of self-care agency. *Research in nursing and health*, 1979, 2(1):25–34.
16. Nahcivan NO. A Turkish language equivalent of the exercise of self-care agency scale. *Western journal of nursing research*, 2004, 26(7):813–24.
17. Esin MN. *Endüstriyel alanda çalışan işçilerin sağlık davranışlarının saptanması ve Geliştirilmesi [Determinants and development of health-promoting lifestyles in worker who work in industrial domain]* [PhD thesis]. İstanbul, İÜ Sağlık Bilimleri Enstitüsü, 1997.
18. Hartweg DL, Metcalfe SA. Self-care attitude changes of nursing students enrolled in a self-care curriculum—a longitudinal study. *Research in nursing & health*, 1986, 9(4):347–53.
19. Altun İ, Özdemir S, Ersoy N. Sağlık Yüksekokulu Öğrencilerinin kişisel değerlerinin özbakım güçlerine etkisi [The impact of personal values of undergraduate nursing and midwifery school students on their on personal self-caring ability]. In: Sever N, ed. VIII. *Ulusal Hemşirelik Kongresi Bildirileri Kitabı [7th National Nursing Congress Book, 20–24 June, 1999]*. Erzurum, Ataturk University Higher School of Nursing, 1999:366–71.
20. Altun İ. Burnout and nurses' personal and professional values. *Nursing ethics*, 2002, 9(3):269–78.
21. Timmerman GA. Using self-care strategies to make lifestyle changes. *Journal of holistic nursing*, 1999, 7(2):169–83.
22. Callaghan DM. A preliminary survey of nurses' health-related behaviours. *International journal of nursing studies*, 1995, 32:1–15.
23. Choi Hui WH. The health-promoting lifestyles of undergraduate nurses in Hong Kong. *Journal of professional nursing*, 2002, 18(2):101–11.
24. Ecevit-Alpar Ş, Şenturan L, Sabuncu N. Hemşirelik yüksekokulu öğrencilerinin sağlıklı yaşam biçimi davranışları [Health-promoting behaviours of undergraduate nursing school students in first year]. In: Aslan H, ed. *2nd International, 9th National Nursing Congress abstract book*. İstanbul, Turkey, Marmara University Nursing High School, 2003:427–30.
25. Ulupınar S. *Hemşirelik eğitiminin öğrencilerin sorun çözme becerilerine etkisi [The effectiveness of problem solving by students of nursing]* [PhD thesis]. İstanbul, İstanbul University Health Science Institute, 1997.
26. Kaya H. Üniversite öğrencilerinde eleştirel akıl yürütme gücü [Critical thinking power in students at university]. In: İnanc N, ed. VI. *Ulusal Hemşirelik Kongresi Kitabı [6th National Nursing Congress abstract book]*. Ankara, Turkey, Gata Nursing High School, 1998:298–302.