Change in the health promoting lifestyle behaviour of Turkish University nursing students from beginning to end of nurse training

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Accepted 30 March 2008

Summary In light of developments in science and technology, content has been added to the nursing curriculum to support and improve students’ healthy lifestyle behaviours. The aim of this study was to determine whether any difference was observed in the behaviour of nursing students. This longitudinal and descriptive study was conducted with 57 students during 2002–2006 academic years Marmara University, School of Nursing. The ‘‘health promotion lifestyle profile’’ developed in 1987 by Pender et al. was evaluated as to its validity and reliability in Turkey by the HPLP (healthy lifestyle behaviour scale) adapted by Esin. Percentage, variance analysis, Cronbach α coefficient and the t-test were used in the analysis of data. The findings indicated that healthy lifestyle behaviours of nursing students changed over time, from when they began and at the end of every year during their nurse training.

Introduction

Prevention of disease, and promotion of health have always been the focus of public health in Turkey as it is throughout the rest of the world. In Turkey the national focus on health during the past few decades has provided the impetus for the development of healthy lifestyle strategies on the part of individuals, groups and communities.

The World Health Organization (WHO) has emphasized ‘‘healthy lifestyle’’ in their 2000 year goals. Maintaining and improving healthy lifestyle behaviours are a large part of WHO’s objectives in ‘‘health for everybody in the year 2000’’ (Edelman and Mandle, 2006, p. 7).
Healthy people in 2010 is the latest of the healthy people documents. Two goals of healthy people in 2010 are: increase quality and years of healthy life and eliminate health disparities (Edelman and Mandle, 2006).

Health promotion is the process of enabling people to increase control over and to improve their health (Edelman and Mandle, 2006). Pender further defined health promotion as a positive dynamic process, rather than a mere extension of illness-avoidance behaviour. It is an important concept for nursing, because it embodies many other concepts that nursing is concerned with today. Health promotion goes beyond information. Much of the nursing role is involved with health teaching (Edelman and Mandle, 2006; Hui, 2002).

Exhibiting health promoting lifestyle behaviours are important components in maintaining and improving health. Health promotion lifestyle is a multidimensional pattern of self-initiated actions and perceptions that serve to maintain or enhance the level of wellness, self-actualisation and fulfillment of the individual (Alpar et al., 2003; Edelman and Mandle, 2006; Esin, 1999; Hui, 2002).

Nursing students of today will soon become health care providers (Staib et al., 2006). As health educators, nurses inform people about health issues and help them acquire the behaviours necessary to maintain, improve, and protect their health (Clement et al., 2002). The nursing curriculum fosters and supports the healthy lifestyle behaviours of students (Clemmens et al., 2004; Riordan and Washburn, 1997). According to the literature, the personal health practices of health professionals are a determinant of their effectiveness in counselling clients on health-related matters (Clement et al., 2002; Clemmens et al., 2004; Ayaz et al., 2005).

Literature review

Nursing prides itself on a holistic approach to healthcare that includes disease prevention and health promotion. As the largest group of healthcare providers, nurses have the potential to exert a strong influence on health care practices in their nations (Edelman and Mandle, 2006; Riordan and Washburn, 1997). Besides, Esin (1999) and Alpar et al. (2003) reported that nurses are the primary members of the workforce for health improvement and protection.

The concept of health improvement includes healthy lifestyle behaviour as defined in different ways. In the literature O’Donnel defines health improvement as “the science and art which help people to change their lifestyle in order to gain optimal health” (Edelman and Mandle, 2006, p. 4). Health improvement aims to give people the ability to correct and control their own health, so as to enjoy a full health potential and continue to have a healthy lifestyle (Ayaz et al., 2005).

Nurses are the first to set the example of a healthy lifestyle behaviour in order to have an influence at a national level. The personal health practices of nurses will have an impact on the quality of training and guidance on health issues that they provide for patients. The community expects reliable models of healthy lifestyle behaviour from nurses. However, some investigators have demonstrated that the health behaviours of nurses are not always model or even different from the general population (Clement et al., 2002; Riordan and Washburn, 1997; Seviğ, 1992). According to the results of a number of studies some nurses report engaging in healthy behaviours, but others report engaging in unhealthy behaviours (e.g. cigarette smoking), and one study has shown that there is no statistically significant difference between professional nurses and other women for healthy behaviours (Clement et al., 2002; Riordan and Washburn, 1997; Hui, 2002).

Today the responsibilities of nurses as health-care professionals require consideration of different aspects of health issues (Edelman and Mandle, 2006). Health promotion through health education has always been an important component of the nursing role. In addition to providing education, nurses can be role models for health promoting behaviours in their own lifestyle (Yeh et al., 2006). The nursing students of today are the practicing nurse of tomorrow. Presumably, the nursing curriculum fosters and supports healthy lifestyle behaviours for students. Nurse training programs have a responsibility to prepare nursing students to assume these roles (Ayaz et al., 2005; Babadağ, 1992; Edelman and Mandle, 2006; Riordan and Washburn, 1997; Yeh et al., 2006).

Several studies have investigated healthy lifestyle behaviour of nursing students. Clement et al. (1995) and Alpar et al. (2003) focused on first-year undergraduate nursing students only. The predictive variables of the health promoting behaviours of the students were perception of self-efficacy, perception of one’s state of health, and the influence of professors. In the second study by Clement et al. (2002) to ascertain the degree to which a health science curriculum may influence health-related behaviours among students, nine selected health behaviours of undergraduate nursing students were studied for three consecutive years and compared to those of a similar group of educa-
tion students. Riordan and Washburn (1997) compared the health promotion behaviours of 82 bachelor’s degree nursing students at the beginning and the later at the completion of their program. Hui’s descriptive study (2002) of 169 undergraduate nurses in Hong Kong was undertaken to determine if there were any differences in their health promoting lifestyles, measured by the health promoting lifestyle profile II. Clemmens et al. (2004) describes a research study conducted by course faculty during the first year of implementation of a program designed to evaluate the extent to which participation in coursework and related activities influenced health-related behaviours. Yeh et al. (2006) evaluated the effect of a healthy lifestyle promoting program on the physical fitness and lifestyle of senior nursing students in Taiwan. Staib et al. (2006) surveyed the health behaviours of 159 nursing students on the Zanesville campus of Ohio University. The study was designed to assess which health behaviours nursing students exhibited most frequently and to ascertain if there were any differences between first and second year nursing students and between male and female students.

University schools of nursing are in an ideal position to develop and provide health promotion and illness prevention programs. As health care providers, nurses are committed to helping people achieve optimal levels of disease prevention and health promotion.

The purpose of this study was to examine healthy lifestyle behaviours of nursing students as they entered and at the end of the education process to see what changes occurred as students were exposed to the nursing curriculum. In addition as a specific objective, healthy lifestyle behaviours of nursing students were evaluated longitudinally at the end of every year during the education process, to see what changes occurred.

Method

This descriptive and longitudinal study was conducted at Marmara University Nursing School during the academic years from 2002 to 2006.

Sample

This study was approved by the administration of Marmara University, School of Nursing. The sample consisted of all the students (70 students) enrolled in the first year of their nursing program. Students were asked to volunteer to participate in the survey; completion and return of the questionnaire were considered consent. The study, which started with 70 students, was completed with 57 students. This difference was due to refusal to participate in the study, blank questionnaires, partially filled questionnaires, being on sick leave, or absence for other reasons during part of the training. Only those students who completed a questionnaire both on entry and on completion of the nursing program were used in this study.

The student population under investigation were female and were unmarried at the beginning of nurse training. The age of the students ranged between 17 and 22; 18 was the average age. In Turkey, the starting age for university is 17, and there were no male students allowed in nursing programs when this study was conducted.

A small percentage (7%, n = 4) of the student nurses had nurse training before (in high school). The nursing education in Turkey differs from the other countries in that there are nursing students at high school and university levels.

More than 50% of the students’ parents only had an elementary school education and 22.8% (n = 13) had no health insurance. The majority (96.5%, n = 55) had no chronic diseases and 86% (n = 49) were aware of behaviours that are harmful to and were trying to correct their behaviours.

Instruments

A questionnaire was used to evaluate demographic information, including age, income, previous education, educational level of parents, health insurance, accommodations during training, presence of a chronic disease, and knowledge of healthy lifestyle behaviours.

The health promoting lifestyles of nursing students were measured with the “health promotion lifestyle profile” (HPLP) developed by Pender et al. (1987). The HPLP measures how frequently respondents engaged in 48 health promoting behaviours. The four-point response format to each item (1 = never and 4 = routinely) measures the respondent’s self-reported health promoting behaviours with higher scores indicating more frequent performance of the health promoting behaviours. The lowest total score is 48, the highest 192. The items are categorized into six subscales: self-actualisation (13 items) which measures attitudes and expectations from life; health responsibility (10 items), which assesses paying attention to and accepting responsibility for one’s own health, being educated about health, and seeking professional assistance when necessary; exercise (5 items), which measures regular exercise patterns;
nutrition (6 items) which assesses meal patterns and food choices; interpersonal support (7 items), which is concerned with a sense of intimacy and close relationship; and stress management (7 items), which quantifies ability to cope with stress.

The Turkish version of the HPLP was prepared by Esin. Esin (1999) also conducted the validity and reliability of the Pender profile in Turkey. In Esin’s study, the instrument was found to have a high internal consistency with alpha coefficient .91 for the total instrument. In our study the instrument was used five times and its internal consistency checked with every administration of the instrument for every year.

### Procedure

Data for the study was collected in five administrations of the instruments during the four academic years (fall 2002–spring 2006). The HPLP questionnaire was administered to students during their first week of nursing classes in their beginning semester of the nursing program and again during the last week of nursing classes in their second semester (2002–2003). The other three administrations were repeated at the end of every academic year. To ensure anonymity, no name was required on the questionnaire. Participants were asked to use a secret code.

### Data analysis

Data were entered into SPSS, and missing responses or blanks were excluded from the analyses.

The Cronbach $\alpha$ reliability coefficients were to determine the reliability of the total HPLP at the beginning of the first year and at the end of every year.

Demographic information of students were evaluated with percentage analysis.

A series of paired t-tests were used to compare means of the groups and to analyse differences between scores at entry and completion of the nursing program.

By using variance analysis, difference was tested between the student’s total HPLP scores and their year in the program (Polit and Beck, 2006; Wood and Haber, 2006).

### Results

As shown in Table 1, according to t-test, there were significant differences between the students’ total HPLP and subscale scores when they entered (121.63 ± 14.93) and when they finished (140.15 ± 15.88) the nursing program ($t = -6.081$; $p = .000$). Students’ nutrition scores were slightly higher as they approached graduation, the mean decreased from 6.03 to 6.31, however, this trend was not significant ($p = .262$). Student’s self-actualisation scores were slightly higher as they approached graduation: the mean increased from 39.19 to 41.61, and this result was significant ($p = .026$). The greatest increase occurred in the health responsibility subscale at the end of the fourth year (from 15.40 to 22.15).

Fig. 1 shows the results from the end of every year during the four years of nursing school. There was a stepwise increase along the years in the total scale and all subscales. During the four years statistically significant differences in the designated health behaviours of nursing students were observed.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Distribution and comparison of healthy lifestyle behaviour scale scores obtained by student nurses on entrance to school and at graduation ($N = 57$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPLP and subscale</td>
<td>Entrance to school</td>
</tr>
<tr>
<td></td>
<td>$X$</td>
</tr>
<tr>
<td>Self-actualisation</td>
<td>39.19</td>
</tr>
<tr>
<td>Health responsibility</td>
<td>15.40</td>
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<tr>
<td>Exercise</td>
<td>10.40</td>
</tr>
<tr>
<td>Nutrition</td>
<td>6.03</td>
</tr>
<tr>
<td>Interpersonal support</td>
<td>17.12</td>
</tr>
<tr>
<td>Total</td>
<td>121.63</td>
</tr>
</tbody>
</table>

$t$-Test.
The students’ total HPLP mean score was 129.56 ± 15.70 at the end of the first year and reached 140.15 ± 15.88 at the end of the fourth year. When evaluated statistically, the difference between the total HPLP students scores appeared highly significant \((F = 20.512; p < .001; \text{Fig. 1})\). As expected, self-actualisation (from 39.01 to 41.61; \(p = .012\)), health responsibility (from 15.40 to 22.15; \(p = .000\)), nutrition (from 5.87 to 6.31; \(p = .051\)), interpersonal supports (from 19.03 to 21.19; \(p = .000\)) and stress management (from 28.42 to 30.14 ; \(p = .019\)) subscales were significantly changed during the four year evaluation period (from the end of the first year to the end of every year of the four-year program. An unexpected result was in the exercise subscale score; there was no significant increase during the nursing program (from 11.49 to 12.14; \(p = .421\)).

It was determined that the most important increase in subscale scores occurred in health responsibility and that there was a highly significant difference in these scores (\(p = .000\)).

Alpha reliability coefficients for the total HPLP for five administrations were found to be in the range of .88–.91.

When we looked at the relationship between the students’ scores obtained on the healthy lifestyle behaviour scale at the beginning and end of their nurse training, the variables which might influence their healthy lifestyle behaviour, such as, high school they graduated from, level of education of parents, number of siblings, income level of the family, no statistically significant differences were found between these variables and their scores on the scale (\(p > .05\)). Because most of the university students in Turkey are supported financially by their parents in Turkey, family income was used to assess the economic status of the student.

**Discussion**

There are many reports in the literature which state that nurse training is responsible for changes in physical, mental and moral dimensions as a whole and that a healthy lifestyle behaviour develops positively during the education process (Bahçeçik et al., 1999; Craven and Hirnle, 2003; Harkreader and Hogan, 2004; Özcan and Bilgin, 2003; Özbasaaran et al., 2003). A longitudinal study demonstrated that nursing students tended to enhance some health behaviours during their university years (Clement et al., 2002).

The results of this study provide evidence that a statistically significant increase was observed in nursing students’ healthy lifestyle behaviours from the time they entered the program to when they graduated. In the statistical analysis of the subscale results, a statistically significant increase was not observed in nutrition. It is thought that the reason for this insignificant change in the nutrition subscale score of students is that they have developed in the cognitive sense but are unable to transfer this to behaviour because of their living arrangements.
Similar studies conducted with student nurses by Alpar et al. (2003) and Gözüm and Tezel (2000) showed that total scores obtained on the healthy lifestyle behaviour scale before and after nursing education rose at a statistically significant level. Our results were consistent with the results of these two studies. The fact that nursing education has a positive effect on healthy lifestyle behaviour is also emphasized in the literature (Bahçecik et al., 1999; Craven and Hirnle, 2003).

Riordan and Washburn (1997) compared the health promotion behaviours of 82 baccalaureate nursing students at the beginning and the later at the completion of their program. The findings showed no significant differences on the total health promoting lifestyle behaviours from the time they entered the program and when they graduated.

In a longitudinal study involving a large number of nursing students, Clement et al. (2002) found that, except for inadequate sleep, nursing students’ health behaviours did not differ from those of the general public.

Shriver and Scott-Stiles (2000) compared the health habits of nursing students with those non-nursing students. Their findings indicated a statistically significant difference between groups over time, with nursing students scoring higher in healthy behaviours over time, whereas the non-nursing students showed no improvement.

Özcan and Bilgin (2003) and Zaybak and Fadiloglu (2004) showed in their studies that students in health-related departments had higher total scores than students in the other departments and that this was due to their education.

In a study conducted by Hui (2002) in Hong Kong it was reported that, differing from studies conducted in our country, the healthy lifestyle behaviour scale score of first and second year students were higher than those of students in higher classes.

Hsiao et al. (2005) assessed the effect of education given to student nurses in Taiwan on improving health and concluded that it increases their desire to pursue a healthy lifestyle.

During the 4 years follow-up (at the end of every school year, Fig. 1) results showed that there were significant differences in self-actualisation, health responsibility, nutrition, interpersonal supports and stress management subscales. Only in the exercise subscale was there no significant increase during the nursing program. However, the findings contradicted those identified in Hui’s (2002) and Riordan and Washburn’s (1997) studies.

Hui (2002) reported that there were significant differences only of self-actualisation and stress management subscales among the various years of students.

In Riordan and Washburn’s (1997) study the only statistically significant change was in the physical exercise subscale.

In a similar study by Yeh et al. (2006) using the same scale, HPLP and subscale scores showed statistically significant improvement. In another study by Ayaz et al. (2005) it was determined that the health responsibility subscale increased statistically significant during the education process.

Conclusion

Health education is a lifelong process. Schools of nursing are in an ideal position to develop and provide health promotion programs for their students and help prepare them for this critical nursing function.

As nurses, faculty can facilitate student learning about health and link this to living a healthy lifestyle. By “learning health” to “live health” future nurses can design appropriate programs that will provide a much-needed repertoire of proven strategies to help others attain and maintain healthy lifestyles. Nurse educators have the power to shape the behaviours of tomorrow’s nurses. The findings indicated a positive change in healthy lifestyle behaviours as a result of the nursing education process. The university level nurse training in Turkey supports the development of students’ healthy lifestyle behaviours. Including lifestyle programs in nursing education may help promote the long term health of future nurses who will serve as positive role models for patients.

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