A comparison of education in Greek and English nurses

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Abstract

Background: Curriculum is an important component of nurse education and is thought to vary from country to country. **Aim:** To determine the level of cardiac knowledge in Greek and English final-year student nurses. **Method:** Subjects were final-year diploma and degree student nurses ($n = 161$) from Greece and England. Pictographs (testing knowledge in a pictorial form) were used as a method of data collection. Three anatomical cardiac diagrams were used. Students were asked to label 20 anatomical parts. **Results:** Final-year English student nurses have better knowledge in the discrete area of cardiac anatomy and physiology ($P < 0.05$) than their Greek counterparts. Problems associated with translation and interpretation were avoided using pictographs and were shown to be useful measures for determining knowledge in nurses from different countries. **Conclusion:** The findings of the study are important because they show differences in anatomical knowledge levels between Greek and English students. More research is needed to explore further different levels of knowledge and education within the European Union and the consequences for nurse decision-making and patient outcomes.

Introduction

The purpose of pre-registration nurse education is to prepare student nurses for professional clinical practice (ENB 1998). Consequently, the competence of health care personnel is based on their prior education and the knowledge it provides (Camiah 1998). The curriculum is a key factor, which determines the values, aims, objectives, logic and content of education (Quinn 1995). According to Caldwell (1995), any curriculum is centralized around the content, the teaching methods and methods of evaluating learning.

There are two main views of the educational process in nursing. The first is the rationalist view that sees education as the transmission of knowledge from teacher to learner, and the second is the humanist view in which education is seen to involve the teacher in facilitating the individual learner's personal development (Purdy 1994).

However, education is more than just the transmission of knowledge; it is also the acquisition of

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cultural values and beliefs (Shuvall 1980). It is generally accepted that the curriculum of any educational programme is shaped by the sociocultural, political and economic factors and therefore is a product of values as well as knowledge (Morrison & Ridley 1989).

Aim of the study

The aim of the study was to assess objectively Greek and English student nurses' knowledge in the discrete area of cardiac anatomy, an area of knowledge, which is globally constant.

Background

Entry requirements for nursing students in Greece and England differ for diploma courses. In England diploma student nurses are accepted primarily on the results of the General Certificate of Secondary Education examinations, which are taken at the age of 16. Greek candidates must finish secondary education [equivalent to Advanced (A) levels] to enter both diploma and degree nursing courses, while in England only degree candidates are required to have A levels. Secondary education in Greece consists of 3 years in the Gymnasium and 3 years in the Lyceum. The examinations taken in the final year at the Lyceum are equivalent to English A levels.

For both Greek and English degree level nursing students, education is normally a 4-year university-based programme. In both countries, entry is gained for degree education at the age of 18. Courses in both countries have theoretical and practical work and all students submit a dissertation at the end of the final year. Furthermore, in both countries the academic year contains two teaching periods, the winter and the spring semesters (Table 1). A distinct difference between the two countries, however, is that the diploma course in Greece takes 4 years while in England only 3 years.

The Greek curriculum is based on the five medical specialities: medicine, surgery, paediatrics, obstetrics and psychiatry and lacks emphasis on nursing theories, health promotion, psychosocial aspects of care, teaching skills, nursing management and leadership. In contrast, nursing is the central theme of the diploma and degree courses in England. Greater emphasis is placed on holistic care and on health promotion (UKCC 1992). The nursing curriculum is based on outcomes developed by the UKCC (1992) Rule 18a. Finally, most nurse teachers in Greece hold a diploma or degree in nursing, usually with little clinical experience and limited research background. In contrast, nurse teachers in England are required not only to be appropriately qualified and experienced but also to support their teaching by active participation in research or other related scholarly or professional activities (CNAA 1991).

The purpose of this study was to test a hypothesis as a basis for further comparative studies on nurse decision-making in Greece and England. The hypothesis was: Greek and English final-year students will have the same knowledge level of anatomy and physiology of the normal human heart. The study formed the preliminary work for a series of studies examining the influence of undergraduate education in Greece and England on the decision-making skills of nurses in coronary care. As the literature indicated a positive relationship between basic education and decision-making (Paul 1995), the aim was to identify the impact of pre-registration education on clinical decision-making in the two countries. The research was based on the philosophical assumption that better educated nurses make better clinical decisions.

There has been a rapid growth of interest in comparative research since the end of World War II. The knowledge about what is happening in other countries has generally been viewed as important, even more important perhaps than in one's own country (Pachocinski 1990). Comparative research according to Bereday (1964) serves two practical goals. First, to deduce lessons from the achievements and the mistakes of national systems other than one's own and second, the possibility that foreign ideas and practices may be adapted to the needs of the researcher's own country. Furthermore, comparative research helps researchers with a fuller understanding of their own systems and problems (Phillips 1994). Hantrais (1998) also states that comparisons can lead to fresh, exciting insights and a deeper understanding of issues that are of central

Table 1 Nursing education in Greece and England in relation to pre-registration nurse education, requirement for entry to nursing, the course, course content and teaching method

	Greece	*England*
Pre-registration regulate nursing education	The Ministry of Education is responsible for the educational policies and financial support to all institutions.	The English National Board and University requirements nursing education. The Department of Health is responsible for funding nursing departments.
Basic education requirement for entry to nursing	Finished their secondary education studies (A level equivalent). Must be 18 years of age. Assigned to the departments by a computerized system on the basis of the examination marks and expressed subject preferences.	Must be 18 years of age. Five General Certificate of Secondary Education O levels for the diploma course. Three A levels (varies from university to university), for the degree course.
The course	The duration of nursing education at Technological Education Institutes (TEIs) and the University is 4 years. Students' progress is evaluated through unseen examinations at the end of each semester. Curriculum is divided into eight semesters at TEIs and at the University. Clinically, students are evaluated by the clinical nurse tutor for the first year of the course. After the second-year student nurses are allocated to hospital wards as part of the team because of the shortage of nursing staff at hospitals. The nurse in charge evaluates student progress.	The duration of nursing education in England varies from 3 to 4 years (depends on the university) for the degree course and 3 years for the diploma course. Students are evaluated through assignments and unseen written examinations. Both courses begin with a common foundation programme lasting 18 months, followed by a further 18 months in a specific branch of nursing. The clinical nurse tutor evaluates the clinical assessment booklets at the end of each year.
Course content	The nursing curriculum is based on the biomedical model.	Nursing is the central theme of the diploma and degree courses.
Teaching method	Nurses and specialist doctors teach nursing courses. Pedagogic (didactic) teaching method is applied in nursing education.	Nurse teachers teach nursing courses. Andragogy is the teaching method applied in nursing education.

concern in different countries. They can lead to the identification of gaps in knowledge and may point to possible directions that could be followed by researchers.

Method

Sample size

The study was carried out in Greece and England between June and December 1998. The sample included final-year student nurses of degree and diploma courses in Greece and England. Student nurses from other nationalities were excluded from the study. From the 161 participants, 87 were Greek students and 74 were English. In Greece, 50 students studied at diploma level and 37 at degree level, while in England the majority of students were on a diploma course (55) and 19 were undertaking a degree ($P > 0.05$).

Instrument

In order to avoid language difficulties, pictographs (testing knowledge in a pictorial form) were used as a method for data collection. Knowledge of anatomy and physiology was chosen as the subject crossed cultural boundaries and did not involve

problems of translation. As anatomy and physiology formed part of the education of nurses in both countries, the pictographs used were two anatomical cardiac diagrams and one normal electrocardiograph (ECG) trace with a total of 20 blank items for labelling. The present study was a first step in learning how to assess the use of pictographs in this area.

The students were asked to fill in the blank labels that pointed to specific areas of the heart. Response to items was open as the aim was to minimize writing. Similarly, blank labels referring to a normal ECG also had to be completed by students. Both Greek and English students were used to using and labelling diagrams in examinations. Demographic questions related to age, gender and nationality were included as independent variables.

Procedure

Expert panels in Greece and England analysed the structure, themes and undertook the minimal instrument translation. Each expert panel consisted of four academics (two from each country). All were nurse teachers with at least 7-year teaching experience and a background in cardiac nursing. In order to evaluate the translation, the Greek panel received two copies of the pictographs (one English version and one Greek version) as the Greek academics had studied at English universities. Both panels sent the instrument back with helpful comments. The panels agreed that the structure and themes were appropriate and that the small amount of necessary Greek translation was good. Confirmation of anonymity and confidentiality were obtained.

A pilot study was conducted in Greece and England over a period of 8 weeks. The purpose of the pilot study was to test and refine the pictogram instrument. The first author (N.B.) randomly selected 10 final-year student nurses from each country from a pool of 35 Greek and 25 English students by drawing names out of a hat. Students completed the pictograms in their classrooms. All students completed the pictogram in 15–20 min. A t-test showed that in this pilot study, English students scored significantly higher than the Greek counterparts (P < 0.01).

As the pilot study showed that the structure, themes and translation of the instrument were appropriate, using a simple random technique, four institutions (two in each country) were selected to participate in the main study. The sampling frame was developed using the Internet facilities, including a list of all institutions in England and Greece, which run undergraduate nursing courses (BSc and Diploma). Each university was allocated a number. Four institutions were randomly selected by drawing numbers from a hat. Permission was sought from the head of the four schools' to include all final-year student nurses (n = 161). Pictographs were given to the students to complete in the classroom under the supervision of a lecturer and the main author. Completed pictographs were handed to the researcher as students left the classroom.

Data analysis

Data were entered and analysed using windows version 6.0 of the Statistical Package for Social Science (SPSS). Descriptive analysis was employed to describe the sample and enhance understanding of the sample characteristics. Each item had a score of 1. There were 20 items, thus, the minimum total score was 0 and the maximum was 20. The Student's t-test was used to assess the significance in differences between the scores of the two groups.

Results

Sample characteristics

The sample consisted of all the students present on the day of data collection (n = 74 English students, n = 87 Greek students). Five students in England and four in Greece did not attend class on the day of the study. Most Greek students (90.9%) were aged between 21 and 23 with a mean age of 22.5 years (P > 0.05), and were female (74.7%); while most English students (75.5%) were aged between 22 and 29 years with a mean age of 27, and were female (94.6%) (P > 0.05).

The results shown in Table 2 indicate that nationality was significantly related to total score. English student nurses scored significantly higher in cardiac

Table 2 *T*-test of total score of correct pictograph and electrocardiograph responses by nationality

Total by Nationality	No. of cases	Mean	SD	T-value	d.f.	Significance
Greek	87	11.6425	3.208			
English	74	15.1676	2.875	−7.35	158.9	P < 0.005

knowledge than their Greek counterparts ($P < 0.005$).

The total score possible for the pictographs is 20. The Greek students had a mean score of 11.6. Less than half of Greek students (47.9%) scored 11–15, while 38.2% scored 5–10, and 13.9% of students scored 16–19. English students, on the other hand, had a mean score of 15.1. Less than half of English students (45.9%) scored between 16 and 20, while 45.8% scored from 11 to 15, and 8.3% of students scored below 10. There were no significant differences between the diploma and degree students in both countries ($P > 0.05$).

Discussion

This small study was designed to determine whether there were differences in the discrete area of cardiac knowledge between Greek and English nursing students.

The study found that overall English final-year student nurses scored higher (mean score 15.1) in cardiac knowledge than Greek students (mean score 11.6), rejecting the hypothesis that Greek and English final-year students will have the same knowledge level of anatomy and physiology of the normal human heart. English students were shown to have a better knowledge of anatomy and physiology in one discrete area of knowledge.

The data also showed that Greek students have a more elementary level of cardiac knowledge, with many students incorrectly answering questions related to the ECG diagram (questions 16–20) and anatomy of the heart (questions 10–15). In contrast, final-year student nurses in England had greater cardiac knowledge (mean score 15.1). It is important to mention that almost 10% of the English students scored on the low range, 6–11, of possible scores compared with 58% of Greek students.

Nurses in Greece and England have similar secondary education and entry requirements. Consequently, the wide variation in scores between Greek and English student nurses may be owing to differences in the nursing curriculum and more specifically in nursing content, teaching methods and teachers' qualifications. Nursing curriculum in England is revised quite often, especially the course content, in order to improve nursing standards in clinical practice and protect patients rights (ENB 1997). A regression analysis showed that age did play a part in the outcomes of this study (estimated regression coefficient for age, B = 7.880, $P < 0.001$). The older students scored higher in the pictographs. It is unlikely that the older subjects would have acquired the detailed cardiac knowledge from previous employment. It may be that the older students were more committed to their courses. Similar results were found by Houltram (1996) and Kevern et al. (1999), who found that age was an important predictor of pre-registration (educational) success.

Conclusion

The purpose of this study was to determine any differences in cardiac knowledge between student nurses in Greece and England. The focus on cardiac anatomy and ECG reading represented not only very basic knowledge required by nurses to work in a coronary care unit, but also knowledge which is not affected by cultural diversity. The differences in educational approach to teaching and learning in the two countries has been discussed as one plausible reason for the differences found between the two groups. Although the English subjects scored significantly higher than their Greek counterparts, it is not clear whether the two educational cultures account for this, or the age difference between the two groups is playing a role in the study. The finding

that there are educational differences between Greek and English student nurses does not represent conclusive evidence that effective decision-making will be different in the two countries. However, the findings do demonstrate that it is possible to compare countries in an objective manner and this justifies the continued investigation of decision-making in this context.

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