

Nursing students' perceptions on the use of anatomical prosections as an educational tool

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SUMMARY

Human anatomy is taught in Stage 1 of undergraduate Nursing programs at a Dublin university school of nursing. Dissection room based practical sessions were recently introduced as part of this module. Nursing candidates were surveyed to assess the value of these sessions as an educational tool. Students' reactions and concerns regarding the dissection room were also evaluated.

74 students (67 female and 7 male) responded to the questionnaire. 97% of those surveyed were of Irish nationality; other nationalities included Ivorian, Nigerian and Philipino. 54.1% of students reported that they had no previous exposure to dead bodies before entering the dissection room. The majority of students (68.9%) were apprehensive at the thought of visiting the dissection room for the practical class.

Loss of appetite was reported by 10.9% of students prior to entering the dissection room. 58.1% of students surveyed reported that the smell in the dissection room disturbed them in some way. The sight of the anatomical specimens also caused some distress (14.9%) as did touching the specimens used (16.3%). 8.2% of nursing students reported dizziness as a physical symptom during the practical session. Other physical symptoms such as sweat-

ing, trembling and recurring or disturbing visual images of cadavers did cause some distress among the nursing students surveyed, although this was minimal.

Two open-ended questions were asked in order to determine the value of anatomy and the use of anatomical specimens by the students. The vast majority (95%) of students reported that anatomy as a subject is relevant to the nursing profession and is important to comprehend in detail prior to commencing clinical placement. 92% of students surveyed thought that the use of anatomical specimens aids in better visualisation of internal structures.

Research findings suggest that although nursing students were apprehensive about practical sessions the majority found them to be very beneficial to their learning. Practical anatomy sessions with the use of prosected specimens can be a valuable learning experience for students.

Key words: Anatomy – Nursing education – Teaching methods – Prosections

INTRODUCTION

Human anatomy is taught in conjunction with physiology at Stage 1 of the undergradu-

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ate Nursing programs in Irish university schools of nursing. At one Dublin school of nursing, prior to the academic year 2005-2006 undergraduate anatomy teaching was delivered via the lecture method only. Dissection room based practical sessions were recently introduced as part of the module 'Structure and Function of the Human Body' to complement anatomy lectures. It is well known that other methods of teaching other than lectures are integral in the understanding of anatomy (Mc Whorter et al., 2004). With this, many schools that teach the subject do so with a mix of both lectures and practicals, whether practicals are by dissection or demonstrator lead.

Some studies report that active dissection is the best way for students to learn gross anatomy (Marks et al., 1997). Anatomists believe that dissection can give students a clear view of human three-dimensional structures along with the spatial orientation of human organs (McLachlan et al., 2004). Others have found that limited active dissection with additional tutorials based on prosected specimens accomplished comparable examination success (Yeager, 1996). A study carried out by Dinsmore (2001) revealed that most students felt that prosection offers a more efficient, practical learning experience than having to do their own dissections.

On the basis of the foregoing evidence, it was felt that prosection based tutorials within the anatomy laboratory which were demonstrator led would be of most benefit to the undergraduate nursing class. During these laboratory based sessions students were given the opportunity to handle the specimens and discuss them among themselves.

Research to date has suggested that the dissection room experience is extremely stressful (Dickinson et al., 1997). The impact of human cadaver dissection on some students has even been likened to 'Post-Traumatic Stress disorder' (Finkelstein and Mathers, 1990). Penney (1985) reported that a proportion of students experienced nausea, fainting, or nightmares during the first few weeks of practical anatomy classes.

It is claimed that students find working with human cadavers and dissected parts distasteful, and even distressing. Evans and Fitzgibbon (1992) reported that students experienced stress on their introduction to dissection and prosected material.

First-year undergraduate nursing students were surveyed by questionnaire to assess their perceptions of the dissecting room as a learning tool. Levels of fear and physical symptoms as well as disturbances were also evaluated among

nursing candidates. The opportunity presents itself to study the reaction of nursing students to the anatomy room and assess whether age, sex, or country of origin has any influence on levels of physical symptoms and fear in relation to the anatomy dissecting room. Hence, the aim of the present study was to ascertain whether the benefits of anatomical laboratory teaching outweigh the potential negative impact that dissection can cause to students.

MATERIALS AND METHODS

Approval for the study was granted by the undergraduate head of teaching and learning as part of a curriculum audit. Questionnaire reliability was validated by a number of lecturers within the School of Nursing, Midwifery & Health Systems. An anonymous questionnaire was administered to a sample of 74 first year nursing students who attended anatomy dissection room teaching. The questionnaire comprised items, which measured variables related to sex, age, country of origin and any previous exposure to dead bodies, and variables related to their experiences of learning in the dissection room. Students were required to respond to items that sought their experience of anticipation prior to entering the dissection room, their level of fear felt while learning within the dissection room, and their experiences and reflections of having been in the dissection room. Students were also asked to indicate whether they experienced any physical symptoms and disturbances related to the dissecting room both at the time of distribution of the questionnaire and as they remembered them from their initial visit. Physical symptoms included fainting, trembling, palpitation, dizziness, sweating, loss of appetite, insomnia and recurring or disturbing visual images of cadavers, and were reported as 'no symptoms/frequent symptoms/occasional symptoms/ constant symptoms'; these gradations were assigned a numerical value from 0 to 3. Students were asked to identify any disturbances relating to the dissecting room felt by them at the time of the practical sessions; disturbances included the smell of formaldehyde fixed tissue, the sight of the anatomical specimens, touching specimens, and fear of contracting a disease. Disturbances were also recorded on a numerical scale from 0 to 3.

Data was analysed using SPSS (Statistical Package for the Social Sciences).

RESULTS

There was a 100% response rate from the 74 students, although not all students answered every question. 67 of respondents were female and 7 male. The majority of those surveyed were of Irish nationality; other nationalities included Ivorian, Nigerian and Philipino. 54.1% of students reported that they had no previous exposure to dead bodies before entering the dissection room. The majority of students (68.9%) reported apprehension at the thought of visiting the dissection room for the practical class (Figure 1). Only 6.8% were excited about the practical class.

Physical symptoms

8.2% of students reported dizziness as a physical symptom during the practical session. Loss of appetite was reported by 10.9% of students prior to entering the dissection room. Other physical symptoms such as sweating, trembling and recurring or disturbing visual images of cadavers were reported, although this was very minimal. 58.1% of students reported that the smell in the dissection room disturbed them in some way (Figure 2). The sight of the anatomical specimens also caused some disturbance (14.9%) as did touching the specimens used in the practical sessions (16.3%). Smell of the dissection room was found to have a significant relationship to the symptoms of dizziness ($p < 0.01$) and effect on appetite ($p < 0.001$). The degree of fear of the dissecting room experience was significantly related to the smell of the dissecting room ($p < 0.01$) as well as touching ($p < 0.01$) and sight ($p < 0.005$) of the anatomical prosected specimens.

Two open-ended questions were asked in order to determine the students' perceived value of anatomy as a subject and also the use of anatomical specimens by the students. 95% of students reported that anatomy, as a subject is relevant to the nursing profession (Figure 3). Themes to emerge from the data provided in the open-

Figure 1. Level of apprehension felt by students on entering the dissection room.

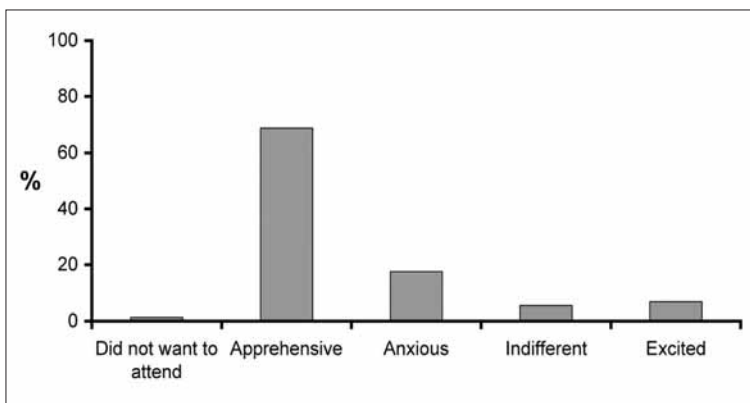


Figure 2. The effect of the smell of the dissecting room on student's.

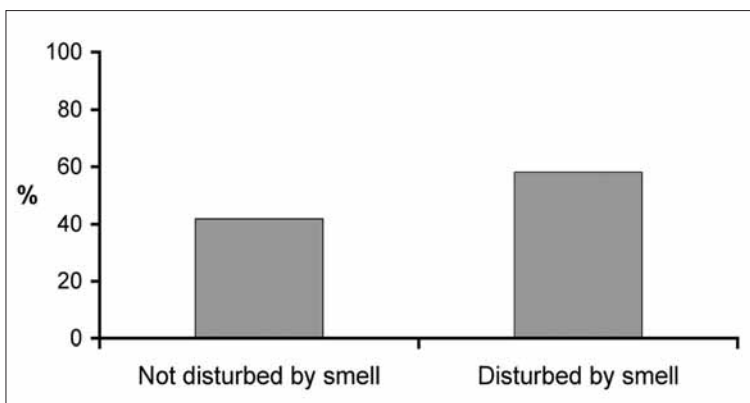


Figure 3. Perceived relevance of anatomy to the nursing profession.

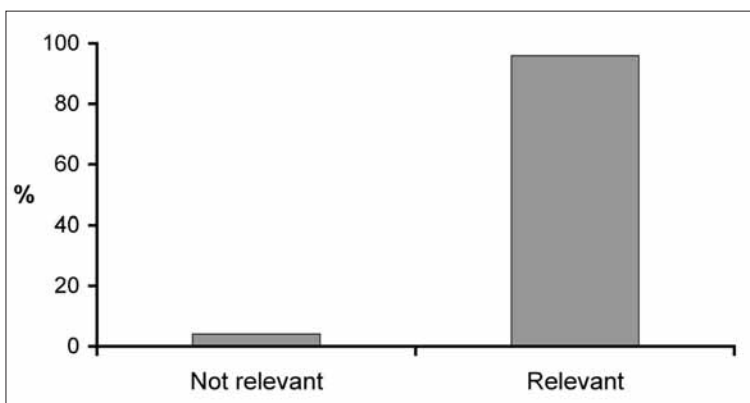
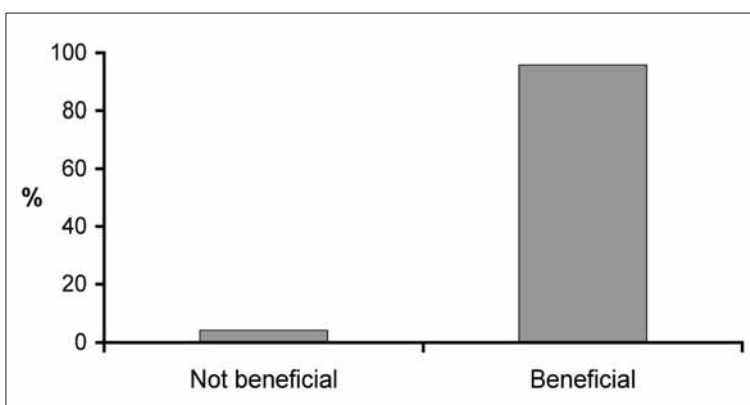


Figure 4. Advantages of the use of anatomical specimens to enhance anatomy teaching.



ended items related to students' perceptions of the value of anatomy to their clinical practice and many students commented that anatomy is important to know in detail when entering into clinical placement. Students saw the subject as important in terms of having a knowledge base in order to give a higher standard of care and assurance to patients. Respondents stated that they should have as much anatomy as any other healthcare professional and that anatomy as a subject is relevant as it provides nursing students with a better understanding of symptoms/conditions if they can visualise the structures affected.

92% of student's surveyed thought the use of anatomical specimens aids in better visualisation of structures (Figure 4).

DISCUSSION

It is widely accepted that some form of anatomy practical should be part of the nursing curriculum, be it dissection or prosection. Many studies have suggested that students who learn anatomy by prosection perform just as well in anatomy examinations as those who learn by dissection (Parker, 2002). Using prosections is considerably less time consuming than the method of dissection and is also less stressful for the students concerned.

Our findings suggest that the negative impact that the dissection room may have on students is far less than the benefits of these dissection room based practical sessions. Anticipation felt by the students prior to entering the laboratory was relatively high. One way to overcome this is to give students more information regarding the body donor program and method of fixation, which may help them to concentrate on the task at hand. The majority of those surveyed did not have any previous exposure to dead bodies so in the light of this, we would expect high anticipation and stress levels in relation to the anatomy dissection room. A slight correlation was found when age was compared with levels of anticipation which may suggest that mature students within the undergraduate program have a better coping mechanism when it comes to anatomy practical sessions. This warrants further investigation.

A minority of students experienced some physical symptoms. Among the symptoms reported were loss of appetite prior to entering the dissection room, and recurring or disturb-

ing visual images of cadavers. Some students displayed symptoms of sweating, faintness and dizziness. However, it is not known if these symptoms can be attributed to the temperature within the laboratory or to the practical sessions themselves. Snelling et al. (2003) concluded that symptoms of faintness, sweating and dizziness were associated with the temperatures within the lab.

More than half of the class were disturbed by the smell of the dissection room. Further evidence is needed in order to determine if this has any long-term effect on the students concerned. The sight and touch of the anatomical specimens used caused some disturbance; this may in fact be due to the type of specimens used. Practical sessions covered a variety of anatomical topics including reproductive and brain anatomy, which might have been distressing to look at.

Other studies have suggested that the anatomy laboratory stimulates thoughts and reflections regarding mortality (McGarvey et al., 2001). Few students revealed that they had thoughts regarding their own mortality and the mortality of others. Students were more concerned with the actual specimens and wondered how long they had been there and how they could in fact donate their bodies to medical science.

Since the integration of nursing into higher education in Ireland, there has been an increase in the amount of material nursing students are expected to study. Along with anatomy, biological science subjects make up approximately 1/6 of the undergraduate nursing curriculum (An Bord Altranais (Irish Nursing Board), 2005). Larcombe et al. (2003) stated that students need to acquire a sound grasp of anatomy and physiology and, in order to achieve this; a substantial amount of time needs to be devoted to the area of biosciences. Many students commented that anatomy is important to know in detail when entering into clinical placement. Nurses in the present study stated that they should have as much anatomy as any other healthcare professional.

92% of students surveyed believed that the use of anatomical specimens offers a visual representation of the structures within the body and this leads to better understanding of the subject matter. Students also commented that it was beneficial to study anatomy in the 3-D form instead of from textbooks.

The biological sciences which are fundamental to clinical practice are perceived as difficult and their application into practice unstructured (Davies et al., 2000). The literature illustrates the recurring assumption that the biological sciences are too 'hard' and the concepts are too difficult for nursing students to understand (Akinsanya and Hayward, 1980; Chapple et al., 1993; Nicoll and Butler, 1996). Thus with inadequate understanding of the biological topics, it is difficult for students to see their relevance to clinical practice. It is for this reason that it was decided to introduce anatomy practical sessions complementary to lectures in order to facilitate student discussion and inevitably to lead to better understanding of the subject matter. Over 90% of students agreed with the use of anatomical prosection as an educational tool and felt that the introduction of these sessions aided in better understanding of the lecture material.

The introduction of laboratory based practical sessions should lead to better understanding of anatomy and the integration of key related concepts into clinical practice.

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