Barnes, Kate (2010) A quantitative exploration of the death anxiety levels of nursing and medical students at the beginning and end of their course. [Dissertation (University of Nottingham only)] (Unpublished)

Chapter 1 – Introduction

1.1 Introduction

The chapter will provide an overview of this study; guiding the reader through the aims and objectives and the null hypotheses for this exploration. A brief overview of the justification for undertaking this research will be provided and the personal reasons from the researcher for this investigation.

1.2 Aims and objectives

The following research aims and questions have been the focus of this study:

1. To describe death anxiety in nursing and medical students at the beginning and end of their course
2. To investigate if there is a difference between the death anxiety of nurses and doctors
3. To explore if completing a medical or nursing course affects an individuals' death anxiety
4. To determine if any demographic factors influence death anxiety in these students

1.3 Null Hypothesis

There are numerous null hypotheses for this exploration and they are listed below:

- H_o There is no difference in the death anxiety scores of men and women.
- H_o There is no relationship between death anxiety and age.

- H_o There is no difference in the death anxiety of medical and nursing students.
- H_o There is no difference in the death anxiety of nursing and medical students at the start of their course.
- H_o There is no difference in the death anxiety scores of nursing and medical students at the end of their course.
- H_o There is no difference in death anxiety after completing a medicine course.
- H_o There is no difference in death anxiety after completing a nursing course.
- H_o Previous experiences of death do not affect death anxiety.
- H_o Recent experiences of death do not affect death anxiety.
- H_o Previous work experience involving death and the dying does not affect death anxiety.

1.4 Justification of research topic

The majority of all British deaths occur within National Health Service (NHS) institutions (National Statistics 2002) and therefore health professionals are more likely to experience death and the dying individual than other non-health professionals. As the need for improved end of life care increases it is important to understand how care of the dying experiences affects those individuals caring for them.

Death anxiety is a dynamic, unpleasant phenomenon which all individuals may endure at some point during their lives (Abdel-Khalek 2002, Neimeyer 1993). Heightened levels of death anxiety and death fear have been linked with avoidance behaviours (Gesser et al 1987) and to professional burnout and depression in health professionals (Llewelyn and Payne 1995, Redinbaugh et al 2003). It can be

influenced by many different factors and the most acknowledged of these are that of age and gender (Fortner and Neimeyer 1999 and Russac et al 2007). It has been hypothesised that death anxiety and health profession are related in a complex manner which is not understood fully, previous research has suggested that as individuals gain experiences of caring for the dying patient their death anxiety may decline as they become conditioned to this (Chen et al 2006, Redinbaugh et al 2003).

The importance of exploring how nursing and medical students' death anxiety changes during their course is highlighted in chapter two. By gaining a better understanding of this phenomenon it could lead the way for strategies to be employed to minimise its effect.

1.5 Personal interest

This topic was of particular interest to the researcher for many combined reasons; personal experience as a student nurse particularly those surrounding end of life care have been of key interest; enabling a 'good death' for individuals and supporting other students through this difficult and sensitive aspect of the nurses role. When undertaking previous work pieces for this course, interest was sparked regarding end of life care measures and furthered to the search for knowledge within this issue.

1.6 Summary

This chapter has provided a brief overview of the research questions together with a concise introduction to why it is important to explore death anxiety in medical and

nursing students. The personal reasons behind the undertaking of this research have been included to gain a full understanding of the factors that have influenced this investigation.

Chapter 2 – Literature Review

2.1 Introduction

The purpose of this chapter is to review the relevant literature regarding death anxiety and examine how previous studies have investigated this phenomenon. Death anxiety itself will be examined, followed by an examination of how health professional's death anxiety may differ and why this is so. Previous studies investigating medical and nursing students' death anxiety will then be examined to gain an understanding of relationships already investigated. Finally the factor of previous experience of death will be examined to understand if individuals can become conditioned to death and end of life care associated with a career in medicine or nursing.

2.2 Death Anxiety

Death is a natural event which all living things must eventually undergo. Death anxiety and the fear of death is an unpleasant human experience (Abdel-Khalick 2002) and can be defined as the "anxiety caused by the anticipation of the state of the state in which one is dead" (Neimeyer 1993, p3). It is well regarded that death anxiety is a fluid experience that can change during different phases of an individuals' life and there have been many studies examining the effects of demographic variables upon death anxiety (Fortner and Neimeyer 1999, Russac et al 2007 and Sevaty et al 1996). These studies and the relationships associated with death anxiety will be reviewed to gain an understanding of previous researches findings.

2.3 Death anxiety, age and gender

There has been much research regarding how death anxiety changes and develops over time. Russac et al (2007) investigated how age and gender affects death anxiety using the Collet-Lester fear of death scale, their relatively large sample size and the variance within the population accessed enhances the reliability of their findings. Russac et al (2007) found that the biggest spike in death anxiety occurred in men and women aged twenty years and there was a general decline in death anxiety as age increased. Death anxiety generally declined with age however women significantly had a consistently higher death anxiety than men. These findings are supported with much other, similar research (Dickinson et al 1997, Fortner and Neimeyer 1999) and it has become widely accepted that women generally have a higher death anxiety than men. Russac et al (2007) suggest that the gender differences observed could be caused because men may be less likely to admit their fears and that the trends observed regarding age are culminated from a number of reasons such as individuals 'coming to terms' with their own mortality. These suggestions are very simplistic however and further research is needed to investigate specifically the causes of these trends.

2.4 Death anxiety and the health professional

The average man and woman are living longer in the UK than they ever have before; the average life span for a man in the UK is 77 years and for women 82 years (Office for National Statistics 2008). The majority of all British deaths occur in National Health Service (NHS) institutions (National Statistics 2002) and thus it is logical to assume that this ageing population will place a strain upon the health care system as the demand for end of life care increases (Ferrell et al 1999). As health professionals will have more experience with death and the dying person than a

non-health service employee it is of particular interest to investigate how their death anxiety levels may be affected by this role.

It has been suggested that care of the dying is a very stressful and health damaging role for both non-professionals and health professionals (Llewelyn and Payne 1995). The stress associated with this role has been linked with professional burnout and other psychiatric disorders (Redinbaugh et al 2003), Gesser et al (1987) suggested that death anxiety and death avoidance are linked with psychological distress and depression. From this information it is assumed that a lower death anxiety is in the best interest of health professionals to enable them to provide high quality end of life care, if heightened death anxiety is linked with avoidance behaviours actions must be implemented to enable health professionals to develop coping strategies for this. Chen et al (2006) undertook a qualitative investigation regarding nursing students' experiences of care of the dying and found that they are often expected to react to death related situations with composure, self control and competent efficiency; society expects these qualities of health professionals but how do these experiences affect their psyche? Payne et al (1998) further to this point suggested that health professionals must deal with their own feelings surrounding death and death threat whilst having to deal with and cope with death regularly in their professional lives. Payne et al (1998) also suggested that an individuals' personal attributes such as degree of death anxiety affect their ability to provide good quality end of life care. This aspect of a health professionals' role highlights the importance of undertaking this piece of research, by gaining an understanding of when and if a job within the health profession alters an individuals' death anxiety a better understanding can be gained surrounding the effect of end of life care upon the carer. Following the assumption that a lower death anxiety enables better end of life care, strategies could be implemented to help health professionals to cope.

2.5 Death anxiety and medical and nursing students

Previous research surrounding this subject has aimed to examine the death anxiety of medical and nursing students using both quantitative and qualitative research and have shed light on the very different nature of their experiences. Nurses play a particularly important role in end of life care because out of all health professionals they generally spend the most amount of time with an individual at the end of life (Chen et al 2006, Ferrel et al 1999). This places nurses in a unique position to provide high quality end of life care, however spending more time working with someone at the end of their life creates a higher risk of emotional distress (Redinbaugh et al 2003). This reinforces the importance of undertaking this research; by providing nursing students with the tools to help minimise their death anxiety it may enable them to provide a higher standard of end of life care throughout their careers.

Servaty et al (1996) examined the relationship death anxiety has upon communication apprehension with dying individuals using two well know empathy and death anxiety scales. They involved 129 nursing and medical students within one institution and they found that a lower death anxiety enabled less communication apprehension and therefore better end of life care. Significantly they found that both death anxiety and communication apprehension decreased during the nursing and medical students training. These findings are of great importance even if the population was only from one institution because they illustrate how death anxiety could change during a medical or nursing course. Servaty et al (1996) suggest the factors that could explain why this decline was observed could be related to age, maturity and life experiences of individuals. These results reinforce the need for further research regarding death anxiety and

health professionals, but particularly during their training years, enabling a fuller understanding of the effects of completing a nursing or medicine course upon individuals' death anxiety levels.

Dickinson et al (1997) investigated how the gross anatomy course affected the death anxiety of first year medical students and although this is not related to end of life care it is still of importance in understanding how medical training can affect death anxiety. The gross anatomy course involved the student's exposure to cadavers, it formed part of the medical students first year and was expected to be the first time when the students were exposed to death so prominently. Dickinson et al (1997) found that in younger physicians the course was more likely to bring up feelings about their own and others mortality, while female students reported a higher death anxiety and fear than the male students. These findings are supported by other studies and within the literature regarding gender, age and death anxiety and therefore cannot be explained solely by the experience of a gross anatomy course. Of particular significance was Dickinson et al's (1997) claim that a course surrounding death and the dying helped decrease student's death anxiety, although much more research is needed to gain a fuller understanding of how end of life care education affects death anxiety this study would suggest that education is key to supporting students. The belief that education aids in lowering death anxiety levels is supported by other research which found that qualified health professionals still wanted more education and discussion time surrounding end of life care and dealing with death (Hegedus et al 2008, Lockard 1989 and Spencer 1994).

Other qualitative research has investigated the topic of death and medical and nursing students. Cooper and Barnett's study (2005) examined those aspects of caring for dying patients which caused anxiety to student nurses. The study used

group meetings to assess this. The main conclusion from this study found that aspects of the caring role rather than personal fear of death formed much of the student nurses anxiety. This type of qualitative research is useful in helping to understand how caring for dying individuals affects student nurses and is valuable when considering interventions that may be used to help minimise the anxiety felt by them.

In similar research undertaken upon medical students by Williams et al (2005) findings suggested that medical students associated more affective responses to the death or dying of an individual and used words to describe their experiences and feelings such as 'guilt' and 'blame'. This contrast in findings proves valuable when considering the different ways in which medical and nursing students cope with the death of an individual and how their death anxiety may differ. The importance of examining both medical and nursing students is emphasised therefore because of the very different nature of each career. The negative connotations of some of the words used by medical students may show a higher death anxiety than that of nursing students, who appear to accept that an individual is dying, but carry more anxiety regarding the care they provide and enabling a 'good death'.

These differences in how medical and nursing students cope with and address the death of an individual prompt the examination of their death anxiety before they have begun their respective training. This may illuminate if there is any difference in their death anxiety which may drive them into their chosen career, but also after they have completed their training; which will illustrate if their death anxiety has changed as a consequence of their experiences during this time.

The important role of doctors in end of life care must not be overlooked and though nurses may spend the most time with dying individuals, doctors face the responsibility of making the decision to move towards end of life care and symptom relief rather than cure. Redinbaugh et al (2003) carried out a study examining how doctors reacted to the death of a patient and found that many expressed feelings of sadness and guilt. This reinforces the differences between nurses and medics and their attitudes toward death, strengthening the reasoning for examining how their death anxiety scores may differ.

2.6 Death anxiety and experience

For this examination it is important to recognise that death anxiety is a dynamic phenomenon that can fluctuate at different times during a person's life. Few studies have examined how death anxiety fluctuates in life and most significantly how it may change during or caused by the completion nursing or medical training.

Upon examination of the literature surrounding death anxiety it became apparent that there is a debate that has been ongoing for decades surrounding when health professionals attitudes towards death are formed. Campbell et al (1983) believe that it is a pre-established attitude toward death that influences people into seeking a profession in the health service. While Latanner and Hayslip (1984) suggest that it is during medical training that their death attitudes are formed. Both of these beliefs however were formulated over 20 years ago and training for both medicine and nursing will have significantly changed during this time. Exploring the death anxiety scores of individuals at the start of a medical or nursing course and comparing this with those at the end, more relative conclusions and theories can be formed regarding individuals seeking occupations within the health setting. The data collected within this study will be analysed so that comparisons can be made

to see if and how death anxiety levels can change because of a medical or nursing course. It has already been discussed that nursing and medical students have very different views and anxieties surrounding the care of a dying individual and it would be interesting to see if their death anxiety levels are different before they have undertaken any training.

Chen et al (2006) examined the effect that nursing training has upon nursing students. They found that both experienced and non-experienced nursing students had a higher death anxiety score than the non-health professional controls, they did suggest however that the nurses death anxiety will decline over time and could reach the same levels as those not in death-related occupations. This hypothesis suggests that as nurses' experience of caring for dying individuals increases, they may become acclimatised to this experience and therefore their death anxiety levels may decline.

Redinbaugh et al's findings (2003) also support this view that increased experience with care of the dying lowers death anxiety levels; they found that after a death of a patient, although all individuals expressed some need for support, it was the junior doctors who had the greatest need for emotional support. This enhances the view that as individuals' progress through their career and gain more experience of care of the dying they may become conditioned to it and therefore do not require as much support because their anxiety about this experience is not as high. This belief is of great importance when examining the death anxiety levels of health professionals because it suggests that experience plays an important role in lowering death anxiety. If this can be supported with further research it may suggest implementations which could help lower death anxiety. It also highlights

the importance of collecting information regarding participants' previous experiences of care of the dying.

2.7 Summary

Society is now an ageing population, the life span of individuals has increased and the need for improved end of life care will escalate as a burdened health care system attempts to cope with the cost of chronic and terminal illness (Ferrell 1999). Care of the dying is and will continue to be a prominent part of the health professionals' role as most deaths occur within NHS organisations (National Statistics 2002). To enable health professionals to provide high quality care at the end of life it is important to gain an understanding of how caring for dying people affects them as individuals.

Death anxiety is an unpleasant experience which all individuals may endure at some point during their lives (Abdel-Khalek 2002, Neimeyer 1993) and thus much research has investigated trends within populations and the effects it can have upon an individual. The most well acknowledged trends regarding death anxiety are that women generally have a higher death anxiety than men (Fortner and Neimeyer 1999) and age; that after peaking at around 20 years old, it generally declines from this point (Russac et al 2007).

When researching the death anxiety of health professionals it is key to understand that they are expected to react to death, dying individuals and their loved ones with composure, professionalism and efficiency (Chen et al 2006). It was also clear that health professionals are expected to come to terms with their own feelings surrounding mortality (Payne et al 1998) and that for them to be able to provide

high quality end of life care their death anxiety should be as low as possible (Servaty et al 1996). The importance of establishing when medical and nursing students' death anxiety begins to rise is paramount if interventions are to be put into place to help minimise this. It has been suggested from previous research that education specifically related to end of life care including time set to allow group discussions is an important factor in lowering death anxiety of students (Dickinson et al 1999, Hegedus et al 2008 and Mooney 2005).

This topic has also been researched qualitatively; examining how medical and nursing students feel about their experiences with dying individuals and provides insight into what aspects of this role causes them the most anxiety. Cooper and Barnet (2005) found that student nurses anxiety came from worry about the caring role and in ensuring they provided the best care possible. In contrast a similar study involving medical students (Williams et al 2005) stated more negative responses surrounding the death of a patient such as 'guilt' and 'blame'. These contrasting ideas reveal that there may be significant differences in the death anxiety levels of medical and nursing students because their anxiety appears to stem from very different aspects of end of life care.

Having examined the literature it became apparent that there was a debate surrounding when medical and nursing students' attitudes toward death are formed. Campbell et al (1983) believe that these individuals' have a pre-established attitude toward death that drives them toward a career as a health professional while Suddin et al (1979) suggest that it is the experiences during their training that form their attitudes toward death. In this investigation by examining the death anxiety of medical and nursing students before they have started their training it

will enable the understanding of if there is a pre-established death anxiety that may influence an individual into a career in nursing or medicine.

Finally one of the key features that became apparent upon reviewing the literature was that as individuals' experience of providing end of life care grew, their death anxiety levels decreased (Redinbaugh et al 2006). Chen et al (2006) suggested that by the time individuals' were established trained nurses their death anxiety levels may have declined to the same level of individuals' not enrolled in death-related occupations. This is important in understanding that some individuals may have had prior experience working in the health care sector and therefore may already have become conditioned to caring for individuals at the end of life. By ensuring this information is gained from participants in this research it may illustrate if individuals who have had prior experience involving death and care of the dying have a lower death anxiety level than those who have not had any experience.

As shown above there is little research which directly compares the death anxiety levels of nursing and medical students and many beliefs regarding when death attitudes are formed are outdated (Campbell et al 1983, Latanner and Hayslip 1984). This emphasises the need for this investigation and further research surrounding death anxiety and nursing and medical students. There is a gap within the research surrounding death anxiety and this investigation aims to explore these relationships to provide more recent, relative hypotheses.

Chapter 3 – Methodology

3.1 Introduction

The purpose of this chapter is to outline the construction of this quantitative study. Rationale will be provided for the quantitative methods and the choice in death anxiety scale and the demographic questions included. Ethical considerations and issues surrounding validity and reliability will be discussed to guide the reader through the design of this study and the method for data analysis will be outlined.

3.2 Research questions

1) To describe death anxiety in nursing and medical students at the beginning and end of their course

2) To investigate if there is a difference between the death anxiety of nurses and doctors

3) To explore if medical or nursing training affects an individuals' death anxiety

4) To determine if any demographic factors influence death anxiety in these students

This chapter will develop a methodology that will enable to exploration of these questions.

3.3 Quantitative research

Quantitative data involves the use of specific methods to scientifically expand the knowledge base and understanding of a topic (Munro 2001). When exploring the death anxiety of medical and nursing students as stated earlier there is little research that directly compares and examines this relationship to gain an understanding of if and how their death anxiety may differ. The research questions outlined lead to the need for a tool to assess nursing and medical students' death anxiety, to gain a statistical measure for this a quantitative project is deemed best practice. The death anxiety scale that will be used is discussed later within this chapter.

3.4 Research Tool

A questionnaire was deemed the most appropriate technique for answering the research questions because the use of an established death anxiety scale with demographic questions included, provided the best means for a statistical measure of death anxiety. Questionnaires enable a large sample to be accessed (Bland 2000) and can be of lesser cost than other data collection techniques. A description of the questionnaire and its construction will follow.

3.5 Questionnaire design

3.5.1 Scale

The main body of the questionnaire was formed from a pre-existing death anxiety scale; the Nehrke-Templer-Boyar scale (1977) which in turn had been derived from the Templers death anxiety scale (1970). The revisions that formed the revised death anxiety scale (Thorson and Powell 1993) included rephrasing a number of

items, eliminating some and the construction of a few new items creating a factor structure of: 1) "fear of uncertainty and missing out on things" 2) "fear of the pain associated with death" 3) "concern over disposition of one's body" 4) "fear of helplessness and loss of control" 5) "afterlife concerns" 6) "fear of decomposition" 7) "concerns over leaving instructions on how things should be done after one's death" (Neimeyer 1993 pp40). With these factors included it has the potential to show any differences in death anxiety between groups for each of the above factors.

The revised death anxiety scale (Thorson and Powell 1993) was chosen because it has proved itself to be a reliable tool in examining and comparing the differences in death anxiety within large sample groups (Neimeyer 1993). It has the ability for a rapid turnover, convenience of administration for large samples and provides a successful means for comparing data within groups and between large cohorts (Neimeyer 1993) and it has been used in previous research to examine the death anxiety of medical students to good effect (Powell et al 1990). Its successful use in previous research involving medical students and availability for low cost and rapid turnover contribute to the choice to use the revised death anxiety scale for this study.

The revised death anxiety scale has been published and can be found in the psychological instruments database therefore permission does not need to be sought to use it. The scale is shown in Appendix One.

3.5.2 Demographics

To gain a full understanding of the participants undertaking the study some demographics were included. The nature of this research question means that information regarding the course the participant is enrolled on and the year of that course were the most significant to collect. Upon reviewing the literature regarding previous uses of this scale however it became apparent that other demographic information would be needed to ascertain the effect that a healthcare course has upon death anxiety.

It was felt important to ascertain information regarding the age and gender of participants because these factors have been shown in previous research studies to have an effect on death anxiety (Chen et al 2006, Russac et al 2007 and Stewart et al 2000). Russac et al (2007) in particular found that there was a spike in the death anxiety scores of both males and females around age 20 years which then declines. It is important to recognise these findings surrounding age and gender effects on death anxiety in case they are repeated within this research.

For the purpose of this research question it was vital to gain an understanding surrounding the course and the cohort that participants were enrolled on. This information is key to the research question and therefore were vital questions to be included. Whilst undertaking this research it was clear that as the nursing course involves four different branch choices that this data would also need to be collected. This was identified as a secondary research question to gain an understanding of if there is a link between death anxiety and branch choice for nursing students.

To gain further information about the participants it was deemed important to ascertain if they had any previous roles where they may have been involved with death and the dying individual. Six options were given which were deemed as roles that an individual may have experienced death or the dying individual; nursing home; residential home; GP surgery; funeral directors; nursing auxiliary; and hospital porter. An open ended option was also included to allow the individual to input anything that they may deem relevant. This information may help in the explanation of any outliers, particularly for the control, first year group who may have had previous work experiences that could have affected their death anxiety.

Upon constructing the questionnaire it was apparent that the experience of the death of a close family member or friend may have an effect on an individuals' death anxiety score, therefore the question was posed concerning the individuals experiences of death. As with previous questions five options were identified for the participant, and one option provided as open ended for the participant to express any other such influences. The year of death of the participants' relatives or close friends was also requested to ascertain how recent this experience had been for them. It was felt the experience of a recent death or particularly significant death may have an effect on the death anxiety score of an individual and therefore this was included.

The final question was included for mere interest of the researcher to examine if death anxiety had a causative effect on choice of speciality. Appendix two contains the final questionnaire that was used in this research.

3.6 Pilot Study

Due to time and cost restraints the conduction of a full pilot study was not feasible, in order to ascertain the effectiveness of the questionnaire the researcher had it reviewed by numerous parties in order to gain their opinion and criticisms. The questionnaire was reviewed by the dissertation supervisor for this project and was seen by the medical school's ethics committee who each gave constructive criticisms for its improvement. The questionnaire was also peer reviewed by five students enrolled on the Masters of Nursing Science course in their final year, they gave advice stemming from the viewpoint of the participant. This advice and critique was evaluated and put to use to create a high standard for the final questionnaire which was used (Appendix two).

3.7 Ethics

For the purpose of nursing research the discussion of ethics is of particular importance, Polit and Beck (2004) explained that when humans are used as participants it is important to ensure that their individual rights are protected. Upon examination of the literature it became apparent that there were six main ethical principles that are particular to nursing practice; beneficence; non-malfeasance; justice; autonomy; veracity and fidelity (Fry and Johnstone, 2002, Fry and Veatch 2006) and these are particularly useful in ensuring the rights of the participant are protected.

A consent form will be given to all participants to ensure that they understand fully the aims of this research and that they are given this research in both verbal and written format. Participants will be informed that all information collected is completely confidential and that no identifying data will be collected, they will also

be advised that they are free to withdraw from completing this questionnaire at any point. Information will be provided that allows participants to contact the researcher if they have any queries regarding the research. In providing this information both verbally and in written format the researcher aims to support the rights of participants. The consent sheet is shown in Appendix Three.

The nature of this research involves the need to undergo ethical approval from the University of Nottingham's ethical committee who met to discuss the research and the questionnaire used. Ethical approval was gained (Appendix four) and the changes required were made, the use of a previously published scale was significant at this point as it decreased the ethical limitations because of its previous successful uses.

This exploratory study aims to gain an understanding of the effect that nursing and medical training has upon individual's death anxiety. A better understanding of this, and under the belief that a lower death anxiety enables a more effective health professional, could improve the training methods of health professionals to address this. This perceived benefit is of greater importance than the perceived possible psychological risk of undertaking this questionnaire and therefore there is little ethical opposition to this study.

3.8 Validity and reliability

The validity and reliability factors of this research were significantly improved by the previous, successful uses of the revised death anxiety scale. Its success in the examination of death anxiety on medical students and other members of society enhances the validation of its use in this study (Powell et al 1990). The relatively

high response rate from the nursing cohorts and good response rate from the medical students as shown in Table 4.1.1 enhance the reliability of the results from this study and increase the significance of the findings.

3.9 Sampling

This research involves a cross sectional study of the individuals enrolled on a medical or nursing course in their first or final year, although a longitudinal study would be more suited to do this (Bland 2000), due to time constraints it would not be feasible to access the same students at the start and end of their courses. A cross-section of participants enrolled in the first or final year of a medical or nursing course within the University of Nottingham during one academic term were approached.

The ideal method of selection is to randomly select individuals within the sample (Creswell 1994) however due to research constraints a convenience sample will have to be undertaken with the only inclusion criteria that the participant must be in their first or final year of study on either a medical or nursing course. Creswell (1994) also recommends the use of a sample size formula to identify the number of people in the sample. For this piece of research however because of the characteristics required from the sample and the access to students only from the University of Nottingham there is not a large enough accessible sample to use a sample size formula, again a convenience sample will have to be taken to increase the population sample. Access was gained to these students by the approval of the University of Nottingham medical ethics committee and verbal permission was gained by individual lecturers whose lectures were intended for this access.

3.10 Method

To collect this research information regarding the timetables of the first and final year medicine and nursing students were collected from the course receptions and heads of programmes. Once the lectures had been selected to enter permission was sought from the lecturers both verbally and via email to request permission to speak to the students at the end of their lectures. At the end of these lectures (ensuring permission had been gained) the researcher addressed the students giving a brief explanation of what the research involved, why they were being asked to participate and the perceived benefits of undertaking this. They were also informed that all data was confidential and they were free to withdraw from completing the questionnaire at all times. Participants were given the option to complete the questionnaire and return it to the researcher at that time or they could take it away and return it to the researchers' pigeon hole. No responses were collected from the researchers' pigeon hole, all the responses were collected as the students were leaving the lecture rooms. The data was imputed in SPSS and the data cleaning and analysis techniques are outlined later within this chapter.

3.11 Access and permission

Access was gained to these classes upon receiving approval from the ethics committee and then individual lecturers. Written approval gained from the University of Nottingham's medical school ethics committee is included in Appendix four while verbal approval was gained from the significant individuals regarding entry at the end of their classes. As stated earlier the participants understood their right to withdraw from this study and by participating they gave their consent to participation.

3.12 Bias

The issue of bias within research has aimed to be reduced significantly within this project by the use of quantitative data collection and a developed, published scale. These two factors help reduce bias because there is little need for researcher interpretation, the questionnaire produces 'hard facts' and statistical testing is used to understand the significance of the results. This reduces the bias which may be formed because the researcher is a student nurse. The scale has been published and tested to ensure reliability and avoid leading questions.

3.13 Data analysis

The 'raw' data will be inputted by the researcher into an SPSS document to allow for significance testing, however before this testing is done it is important to 'clean' the data to ensure these tests can be carried out. To reduce the human error associated with one individual imputing data into a computer program such as SPSS a random selection of 10% of the response rate (n=30), of questionnaires were rechecked against the computer inputted data. Marginal errors were found and it was decided that the human error for this involvement would likely be small and therefore reduce the limitations that this may have. The recoding of the data and analysis techniques used were as follows:

- Scoring of the scale questions to give a total death anxiety score for each individual

- Transforming this total score into a percentage for easier viewing

- Transforming the year scores into two groups; first and final year of course

- Transforming the course scores into two groups; medicine and nursing

- Transforming the ages of individuals into seven groups; 18-21, 22-25, 26-30, 31-35, 36-40, 41-45, 46-50 years

- Transforming the experience of the death of close friends and relatives into three categories; first degree relative; mother, father and sibling. Second degree relative; grandparent, friend and other, and a final group of no experience

-The data was also transformed into two categories; no experience of death and experience of death

- Transforming the year of the experience of death into five categories; <twelve months, twelve to twenty four months, >twenty four months, no experience, and missing information when an experience of this sort has occurred.

-Transforming work experience into two groups; relevant work experience and no relevant work experience.

After this data had been transformed statistical analysis was started to understand if there were significant differences of death anxiety between these groups of individuals. The assumptions of normal distribution were met; linear, independent, normal, equal variances and therefore an independent t test was undertaken. Chi square tests were also undertaken to gain an understanding of gender and course; and relevant work experience and course.

3.14 Summary

This chapter has outlined the methodological process of constructing this research project; the use of the revised death anxiety scale (Thorson and Powell 1993) has been discussed in light of ethics, validity and reliability. The statistical analysis of

this data has also been outlined to guide the reader through the process this quantitative exploration has taken.

Chapter 4 - Results

4.1. Introduction

This chapter will illustrate the findings from this study, the response rates and a description of the population sample will be followed by the responses to scale items. Statistical tests will then be undertaken and the findings presented.

4.2 Demographic data

A total of n=356 questionnaires were completed; however, six of these responses did not contain any demographic data and therefore have not been included in the analysis. There were also n=3 questionnaires completed by medical students who did not state what course year they were in, therefore these have not been included in the analysis of course year and death anxiety.

A response rate was calculated for each class that was accessed, and presented in Table 4.1.1, for this analysis the total number of participants was (n=347) due to the lack of information stated above. The results shown are due to the length of each course, the nursing course Diploma/BSc is a three year long course; the nursing course MNurSci is four years long; and the medicine course is five years long. Table 4.1.1 illustrates that only first and final year students on each course were included.

	First year	Third year	Fourth year	Fifth year
Medicine	26% (n=65)	0	0	21% (n=75)
Diploma/BSc nursing students	42%(n=62)	67%(n=80)	0	0
MNurSci nursing students	60%(n=36)	0	59%(n=29)	0

Table 4.1.1 Response rates

The total number of participants for the nursing students was a total response of n=207 with a spread of male n=23, female n=184, and for medical students there was n=143 and the gender spread was male n=41, female n=102. The median age for males was 22-25 years and the range for the uncoded data was 26. The median age for females was 18-21 year and the range for the uncoded data was 28. The mean age for the medical students was 22-25 with a range of 21, whilst for nursing students the mean was 18-21 with a range of 28. Table 4.1.2 contains information regarding the gender properties of the sample.

	Male N(%)	Female N(%)	Total N(%)
Medicine	41(11.7)	102(29.1%)	143(40.9%)
Nursing	23(6.6%)	184(52.6%)	207(59.1%)
Total	64(18.3%)	286(81.7%)	350(100%)

Table 4.1.2 Gender properties

A chi square test upon the above data showed a significant association between gender and course indicating that both courses had significantly higher participants of females than males, $X^2 = 17.454(1)$, P=0.000.

For the nursing students only, there were n=152(42.7%) adult branch; n=28(7.9%) child branch; n=19(5.3%) mental health branch; and n=6(1.7%) participants enrolled on the learning disability branch. There has been a great enough response rate to analyse the death anxiety scores for different nursing branches as a post hoc analysis.

The question posed regarding any previous work experiences that may have involved individuals in care of the dying have been transformed into two categories; relevant experience and no experience, however to gain a view of who has experienced working in the following sectors the uncoded data has been shown in Table 4.1.3 The option hospice has been included in this table because it was the most common and most relevant answer to the open ended section.

Responses given to this question which were not seen to be relevant included teaching, work in a chiropody centre and receptionist as examples. More data would be required to test the impact of any work experience versus relevant work experience. This information was then cross tabulated as seen in Table 4.1.4 in order to illustrate the number or nursing and medical students with experience in any of these sectors.

	Medical students N(%)	Nursing students N(%)	Total N(%)
Nursing home	44(30.8%)	72(34.8%)	116(32.6%)
Residential home	40 (28.0%)	58(28.0%)	98(27.5%)
GP surgery	86 (60.1%)	19(9.2%)	105(29.5%)
Funeral directors	0(0%)	2(1.0%)	2(0.6%)
Nursing auxiliary	11(7.7%)	59(28.5%)	70(19.7%)
Hospital porter	14(9.8%)	5(2.4%)	19(5.3%)
Hospice	10(6.9%)	4(1.9%)	14(3.9%)

Table 4.1.3 Work experience

	Medicine N(%)	Nursing N(%)	Total N(%)
No relevant work experience	30(21.0%)	87(42.0%)	117(33.4%)
Relevant work experience	113(79.0%)	120(58.0%)	233(66.6%)
Total	143(100%)	207(100%)	350(100%)

Table 4.1.4 Work experience total

Proportionately more medical students had relevant work experience that nursing students. A chi square test showed a significant association between course and relevant work experience indicating that more medical students had relevant work experience than the nursing students; x^2=16.840(1), P=0.000.

Information was also collected surrounding the experiences of death that participants may have had and the period of time since they have occurred. This coded data is shown in Table 4.1.5 to gain an understanding of how many participants had experienced the death of a close friend or relative recently.

	<12months	**12-24months**	**>24months**	**Unknown**	**Total**
No experience	0	0	0	55	55
1st degree relative	3	6	22	7	38
2nd degree relative	39	36	132	49	257
Total	42	43	154	111	350

Table 4.1.5 Experience of recent death

When coding this data, one participant identified a grandparent that had died before they were born; this was identified as no experience.

4.3 Description of death anxiety scale

The responses for individual scale item questions are shown in Table 4.1.6 with the score that each response is given. The death anxiety scores for all participants are shown in Figure 4.2.1 with a normal distribution curve indicated. A Cronbach's alpha was performed on all 356 questionnaires with a result of 0.85 indicating that there is good internal consistency within the scale questions.