A comparison of nursing and non-nursing students on two measures of death anxiety.

Lois Ann. McGrory

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LA THÈSE A ÉTÉ MICROFILMÉE TELLE QUE NOUS L'AVONS RÉCU
A COMPARISON OF NURSING AND NON-NURSING STUDENTS
ON TWO MEASURES OF DEATH ANXIETY

Lois Ann McGrory
B.A., (1975), University of Windsor

A Thesis
Submitted to the Faculty of Graduate Studies
through the Department of Psychology
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of Master of Arts at the
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1977
ABSTRACT

This study was designed to develop a measure of unconscious death anxiety (the Death Apperception Test), and to determine whether death anxiety, as measured by Templer's Death Anxiety Scale and by the Death Apperception Test, is higher in student nurses than in a control population. Eighty-five female students (all from the 18-30 age range), 45 student nurses, and 40 non-nursing students, were compared on the Death Anxiety Scale, the Death Apperception Test, and a number of covariates (Spielberger Trait Anxiety Inventory, age, religion, marital status, Index of Social Position, nationality, identification number present in the nursing group, and recent experience with death).

The results indicated there are essentially no differences between the groups on the two measures of death anxiety or any of the covariates listed above. In addition, the development of the Death Apperception Test was only partially successful. Although this test seems useful for measuring unconscious death anxiety, further refinements are needed before it will provide a satisfactory instrument.
ACKNOWLEDGEMENTS

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CHAPTER I
INTRODUCTION

This study was conducted to investigate death anxiety in student nurses. Research into this aspect of nursing seems particularly important because nurses are in a position to help the dying live out this final stage of their lives with support and dignity. If, however, communication with the dying patient is impeded by the nurse's own difficulty in thinking about death and dealing emotionally with death (i.e., by her coping poorly with death anxiety), she will probably be a less effective caregiver. For example, a nurse who is uncomfortable with the dying may unconsciously utilize a variety of defense mechanisms. She may resort to complete or partial repression and denial and hide behind a "busy" facade of duties in caring for the dying patient, not allowing opportunities for the patient to express his/her concerns and feelings. This withdrawal has been poignantly sketched in an article by Mount:

In Miss R's 35-day hospital stay she was cared for by 38 nurses. Only once was she followed by the same nurse on the same shift for three consecutive days. Only on four other occasions was she cared for on two consecutive days by the same nurse. Of the 105 nursing shifts during her hospital stay, the nurses' notes recorded her status for only 66 shifts and only nine notes contained information regarding the psychological problems of Miss R. (Mount, 1975, p. 22)

A further illustration of the difficulties nurses have

---

1 The author is well aware that some nurses are male but for simplicity's sake female gender will be used in referring to nurses.
with the dying comes from a dying student nurse who wrote to those caring for her, "I sense your fright and your fear enhances mine. Why are you afraid? I am the one who is dying" (Anonymous, 1970).

Thus it seems particularly relevant to review attitudes toward death and dying in the health professions. The focus of much of the literature to date on this subject has been on the poor psychosocial treatment of the dying and the concomitant implication that this treatment is a result of death anxiety on the part of the health care professional, an anxiety that is typically permitted to go unresolved or unclarified in those persons experiencing this anxiety (Feifel, Hanson, Jones, & Edwards, 1967; Hinton, 1971) Kübler-Ross, 1969; Mount, Jones, & Patterson, 1974; Shady, 1976). In this context some writers (Caldwell & Mishara, 1972; Hinton, 1971; Kübler-Ross, 1969) have hypothesized that an individual's dying process is worsened by the attitudes of his caregiver. Kübler-Ross (1969), for example, suggests that because of our discomfort in dealing with the prospects of our own death, we prefer not to acknowledge the dying process in others. Consequently we often withdraw our support and care of the dying by failing to discuss death openly and honestly with the patient.

This is well illustrated in a study conducted by Caldwell and Mishara (1972) of the attitudes of medical doctors towards dying. The data revealed a general reluctance on the part of the physicians who were interviewed to discuss
attitudes towards dying. Of the initial group of 73 who had agreed to participate, only 13 physicians completed the questionnaire when the subject matter was disclosed. The authors suggested that the topic of death may present more of a problem to physicians than has been recognized. In a similar context, Mount, Jones, and Patterson (1974), utilizing a questionnaire, surveyed attitudes of health care staff in a teaching hospital. One of their findings indicated that 78% of the patients surveyed would want to be told the nature of their disease, while only 13% of the physicians surveyed advocated this view. The authors also noted the low percentage of respondents for both nurses and physicians (32% nurses, 49% attending staff, 27% residents and interns).

Consequently a further consideration for the nurse dealing with the issue of death and dying, even if she has learned to cope adequately with her own anxiety, is the conflict she may encounter with the physician who has been shown to be less than willing to approach the topic (Caldwell & Mishara, 1972; Feifel et al., 1967; Kübler-Ross, 1969). Historically, the physician has had the responsibility of communicating to the patient the seriousness of his illness or impending death. Therefore, the nurse may find herself in a most uncomfortable situation and may be tempted to abdicate responsibility for care of the dying, hiding behind the doctor's position of authority. A re-
definition of the nurse's professional role vis-à-vis the
physician is worthy of consideration, particularly if the
nursing professional attempts to understand and cope with
the issues facing the dying while the physician continues
to deny them.

In order to understand death anxiety in nurses or
members of other health professions it should be helpful to
know about the concept of anxiety in general, the sources
of death anxiety in particular, and the various ways death
anxiety has been operationally defined.

A brief review of the general concepts of both anxiety
and fear seems pertinent, however, since in much of the
recent literature fear (fear of death) and anxiety (death
anxiety) have been used interchangeably. Psychodynamicists
typically distinguish between fear and anxiety by suggesting
that fear is the feeling of discomfort associated with some
future situation that is known, whereas anxiety is the same
feeling associated with a future event of which the person
is unaware. Levitt (1967), however, asserts that the dis-
tinction between anxiety and fear is no more than theoretical
and that the range of possible distinctions and definitions
is, in principle, unlimited. Theoretical distinctions
between anxiety and fear are typically based on the degree
to which the emotion is specific to a stimulus, or its
appropriateness to a situation. These criteria are
pragmatically difficult to maintain, and for all practical
and experimental purposes, anxiety and fear are indistinguishable.

Clarification of the terms "death anxiety" and "fear of death" is hampered to some extent by the interchangeable use of these concepts in much of the literature. Fear of death and death anxiety can probably be interpreted in the same way that the concepts of fear and anxiety are generally used. Death scenes (e.g., funerals, wakes) may provoke feelings in the individual which are more in keeping with the concept of trait anxiety. This anxiety state seems to depend, in part, on how a person handles the feelings that he experiences when he contemplates his own death. Death anxiety, like anxiety-proneness generally, probably reflects the individual's underlying disposition or personality traits and will be reflected when this person is presented with death stimuli. The task of defining fear of death as something apart from death anxiety appears to be an unnecessary task, and this author, in agreement with Shady (1976), has opted to use the terms interchangeably.

Considerable literature has been devoted to the concept of anxiety. The reader is referred to writings by Freud (1936), Levitt (1967), Spielberger (1972), Miller (1951), and Buss (1966). Some of the viewpoints presented here represent different theoretical schools, vis., Freud (psychodynamic), Miller (learning theory), Cattell (factor-analytic approach), Spielberger (state and trait anxiety),
and Becker (an existential viewpoint). The following review of anxiety will attempt to clarify what Cattell and Scheier (1958) have termed "conceptual chaos." An example of this chaos is their derivation of 325 variables related to anxiety in a factor-analytic study.

The theoretical origins of anxiety have been thoroughly, albeit controversially, explored by Freud (1936). He viewed anxiety as an affective state involving not only feelings of "unpleasure," but also the individual's perception of and physiological reaction to this affect. According to Freud, the first anxiety situation results from the trauma of birth and gives rise to feelings of psychic helplessness in the infant. Subsequently, in early childhood, fear of object loss, i.e., separation from the mother or mother substitute, gives rise to anxiety in the child. Later, in the phallic phase, castration fear creates this affective state. Development of the superego caps the process. It is the anger, and the punishment of the superego, the loss of its love, that the ego (the real experiencer of anxiety, according to Freud) apprehends as a danger and to which it responds with the signal of anxiety. And thus, perhaps coining the term "death anxiety," Freud stated:

The final transformation undergone by this fear of the superego has appeared to me to consist of death-(life)-anxiety, fear felt for the projection of the superego upon the powers of destiny. (Freud, 1936, p. 79)

Another theoretical position is that of Miller (1951),
who interpreted Freud's view of anxiety in terms of learning theory. Miller viewed fear or anxiety as a learnable drive, i.e., fear can be learned as a response to previously neutral cues. Consequently it can motivate the learning and performance of new responses in the same way as hunger, thirst, or other drives. If fear is a strong response-produced stimulus, anything that produces a sudden decrease in the fear response should have a rewarding effect. Therefore when Freud speaks of anxiety-producing situations (as in the examples of childhood above), anxiety occurs because the response to the original fear-producing stimulus has become conditioned to neutral cues. Consequently, these previously neutral cues also come to generate anxiety, and the individual will behave or respond in some way to reduce the fear in their presence. Gradually, the individual begins to make anticipatory responses (anxiety) to a greater and greater array of previously neutral stimuli. Thus both Freud and Miller provide a useful framework for the conceptualization of sources of anxiety.

A broader and perhaps more pragmatic conceptualization of anxiety is provided by Spielberger (1972), who distinguished between acute or situational anxiety (state anxiety) and anxiety-proneness or predisposition (trait anxiety). Situational anxiety is a transitory state of the organism which occurs in response to a stimulus and is likely to vary from moment to moment and from day to day.
Anxiety-proneness (A-trait) is a relatively unfluctuating condition of the individual, a latent disposition to respond with state anxiety under stress (Endler & Okada, 1974). Such dispositions of the individual are usually regarded as personality traits. The anxiety-prone individual is more likely to experience anxiety, but the intensity of his feeling will also be a function of the nature of the situation. This seems to be perhaps the most empirically useful conceptualization of anxiety, because of the ease with which it can be operationally defined (Spielberger, 1970).

Although the conceptual difficulties in defining anxiety and death anxiety are apparent, there is a general concurrence regarding the symptoms or feelings of anxiety. Anxiety is a vague sense of foreboding and uncomfortableness that necessitates some action by the individual to ward off the feelings. Because the individual has little or no awareness of why he is experiencing these feelings, he is frequently unsuccessful in reducing his anxiety.

The discussion to this point has included a consideration of the conceptual difficulties that arise when dealing with a hypothetical construct such as "death anxiety" and has argued for the irrelevance of attempting to delineate sharply between fear of death and death anxiety.

Having dealt, however briefly, with some of the conceptualizations relating to anxiety, it is perhaps more pertinent to the present research now to discuss the formu-
lations about sources of death anxiety. These sources may be viewed from the perspective of the several schools of thought mentioned above. For example, learning theorists might refer to death anxiety as fear in a specific situation involving death (e.g., sudden and unexpected death of a loved one) which has now generalized to other situations.

Freud would perhaps relate death anxiety to experiences with which the child has coped unsuccessfully: separation from the mother, castration anxiety, fear of punishment by the superego (i.e., guilt). Therefore the death-anxious person may have experienced abandonment and may continue to fear mutilation and/or sadistic motivations turned against the self.

The existential viewpoint concerning the sources of death anxiety was discussed in Becker's (1973) classic work on the denial of death. His thesis was that fear of death is a universal phenomenon. He supported the view of many philosophical writers that death anxiety may well be the basic anxiety in life. For many writers (Becker, 1973; Donaldson, 1972; Peifer, 1959; Guthrie, 1971; Kastenbaum, 1972; Olsen, 1971; Shibbes, 1975), man's knowledge of the inevitability of his death and his acceptance of this immutable fact poses one of man's greatest dilemmas. Man's existence, therefore, is clouded by his knowledge that he will, one day, no longer exist, and this knowledge gives rise to fear and anxiety for the self in the face of death,
i.e., to fear of the dissolution of one's personality. Becker (1973) also pointed out that an individual's defense against this anxiety is usually inappropriate repression or denial.

It is possible that nurses may attempt to cope with their anxiety about death by turning passive experiencing into active mastery through the choice of a health profession. This would be one example of a general proposition, that people who are more anxious than the average are drawn to a health career. Feifel et al. (1967), for example, suggested that "an above average fear of death in certain individuals is a relevant variable in the choice of a medical career." They suggested that this choice is, in part, an attempt to obtain mastery over disease and to help control personal concerns about death. The choice of a health profession may therefore provide both cognitive and behavioural means for such control. Thus when persons in the health professions are confronted with death, the situation presents them with a failure of science (on which they rely for mastery over disease) on the one hand, and provides a stimulus that heightens their own death concerns on the other. Consequently, a working-through and acceptance of one's eventual death is necessary to overcome and reduce anxiety.

It seems relevant, therefore, to consider the influence of training on death anxiety. Dealing specifically with
nurses, Golub and Reznikoff (1971) attempted to measure the influence of nursing education and experiences on attitudes toward death. They found differences in attitudes toward death between beginning students and more experienced nurses, such that the attitudes of experienced nurses appeared to reflect more acceptance and openness toward death-related topics.

Lester,erry, and Kneisl (1974) criticized the above study because it did not demand specific attitudinal responses. They attempted to rectify this in a study of attitudes of nursing students and nursing faculty toward death and dying. They found that the mean scores for various measures of fear of death were highest for sophomores and decreased as the level of education increased. The authors supported their hypothesis that fear of death and dying decreases with increased academic preparation. The attitude measures may, however, also reflect a consolidation of defenses against the acceptance of death rather than a more-accepting attitude, and so interpretations must be made with some caution. In addition, without an adequate non-medical control group it is difficult to evaluate the relative levels of death anxiety.

Yeaworth, Kapp, and Winget (1974) compared attitudes toward death held by freshmen and by senior students in a baccalaureate nursing programme, finding that compared to freshmen, the senior students had significantly greater
acceptance of feeling, more open communication, and broader flexibility in relating to dying patients and to their families. Yeaworth et al. attributed these differences to the exposure of students to a nursing curriculum which provided experiences in caring for dying patients, classes on loss, grief, and death, small group discussions, and the availability of one-to-one counseling for students taking care of dying patients. Again, however, it is not clear how these students stand in relation to normative samples at either level of maturity.

Thus it appears that training can reduce the death anxiety of nursing students. This training may, however, also provide an opportunity to establish better defenses against death anxiety, the kind of defenses that are reflected in the behaviour of practicing physicians and nurses (Mount, 1975; Mount et al., 1974). The question is (and, I think, an interesting one), "Do people starting into a health-caring profession begin with a higher level of death-anxiety?"

In order to answer this question adequately, we need further improvement in the existing techniques of measurement. The above studies on nurses, on death anxiety, and on intervention techniques are inconclusive. Most had generally poor designs, used different measuring techniques (usually involving some sort of questionnaire), and did not employ a control group outside the nursing profession.
Therefore it is most difficult to say what each study has shown.

Lester (1967) has suggested that the many contradictions in the research of death anxiety may be due, in part, to inadequate consideration of factors such as reliability and validity of the measure used and of the multidimensionality of the fear of death. Typically, research on dying patients has used a clinical approach with case studies, whereas studies of the fear of death have used techniques of measurement (questionnaires, interviews, forced-choice scales, rating checklists of death attitudes, and projective techniques) that have produced mainly correlational data (Lester, 1967).

More recently, Templer (1970) reviewed the measures used to determine death anxiety in individuals. He agreed with Lester's (1967) criticism and attempted to develop a scale with a high degree of reliability and validity. In the construction of a forced-choice scale, Templer considered the rational selection of items, item analysis, reliability, response-sets, and validation procedures.

Contributing further to confusion about death anxiety are the possible nonunitary nature of the fear of death (or death-anxiety) and the need to measure differing levels of awareness (Peifel & Branscomb, 1973). Peifel and Branscomb discovered different but inter-related responses to fear of death at three levels of awareness: conscious, fantasy, and
"nonconscious." The general responses of these three levels appeared to be denial at the conscious level, ambivalence at the fantasy level, and outright negativity or aversion at the "nonconscious" level. Thus low anxiety scores elicited from questionnaires may represent not only lack of concern about death, but also strong denial (Shady, 1976). Feifel and Branscomb (1973) pointed out the necessity for measuring the different levels of awareness, especially in view of the relationship found between denial at the conscious level and outright aversion at the "unconscious" level.

One of the major purposes of the present study was to measure death anxiety reliably and determine whether this anxiety influenced the initial choice of nursing as a career. The consequences of such a study should certainly influence curriculum planning and intervention. Of particular applied interest may be the development of some measure of intervention effectiveness in the student's feelings about death.

Because of Templer's attempt at determining reliability and validity, the author chose Templer's Death Anxiety Scale for this study but modified it to broaden its scope. In addition, the present author utilized two other measures. The State-Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970) was administered, using those items pertaining to trait anxiety. This measure provided a comparison for both groups on levels of trait anxiety and a comparison
of trait anxiety with the death anxiety measures. Templer (1970) had obtained a product-moment correlation of .39 between the Death Anxiety Scale and the Welsh Anxiety Scale ($p < .01$) and of .36 between his scale and the Taylor Manifest Anxiety Scale ($p < .01$). Further comparison between trait and death anxiety may clarify the relationship found by Templer.

Also, in view of the above criticisms of the sole use of questionnaires, the author developed a test designed to measure death anxiety below the conscious level. This projective test, the Death Apperception Test, was based on the assumptions underlying the Thematic Apperception Test (Bellak, 1975; Lindzey, 1959; Lindzey & Silverman, 1959; Murray, 1943).

In summary, the purpose of the present research was to develop a measure of death anxiety below the conscious level and to compare data from this test with those obtained by the use of a well-established death anxiety scale (Templer, 1970). In this study death anxiety will be operationally defined as whatever leads to higher scores on the Death Apperception Test and Death Anxiety Scale. For the Death Apperception Test what is required to get a high score may be ascertained by studying Appendix D, which contains the coding criteria for the test. It was hoped that these measures would indicate whether levels of death anxiety are higher in student nurses than in a similar sample drawn
from Psychology 115 courses. Specifically, the following hypotheses were tested:

H: 1 It is possible and practical to develop a measure of death anxiety that is sensitive to unconscious aspects of the person's reactions to death and related themes.

H: 2 High death anxiety is a more relevant variable in the choice of a nursing profession than in the choice of other professions.
CHAPTER II

METHOD

Design

The present study compared two groups of freshmen university students from Nursing and Introductory Psychology classes. Scores for all subjects were obtained on two dependent measures (the Death Anxiety Scale and the Death Apperception Test).

Subjects

Forty-five first-year female students and two male students in the BScN programme at the University of Windsor comprised the original experimental sample. A sample of forty-six female students in the same age range was selected from Psychology 115 student volunteers. The two male students in the experimental group and six students in the control group over the age of thirty were not included in the final groups. Thus the final sample included forty-five female nursing students and forty female controls between 18 and 30 years of age.

Materials

All students were administered a booklet (Appendix A) which contained the following measures: The Spielberger Trait Anxiety Inventory; Templer's Revised Death Anxiety

17.
Scale; the Death Apperception Test, and a final demographic questionnaire.

**Spielberger Trait Anxiety Inventory.** The Trait Anxiety Inventory is a 20 item questionnaire designed to measure anxiety proneness (A-trait) which, according to Spielberger (1970), is a relatively stable condition of the individual.

**Templer's Death Anxiety Scale.** Templer's original scale (Appendix B) was modified to fit the same response pattern developed for the Trait Anxiety Inventory and embedded in the Inventory. Typically, the individual is asked to make a true or false response to each item, e.g., "I am very much afraid to die." A "true" response in this case would indicate death anxiety. For the purpose of this study, however, the wording was slightly changed and answers were rank ordered along the following scale: almost never, sometimes, often, almost always (Appendix C). For the above example the revised item read, "I am afraid to die" and the subject was requested to respond through a range of 4 choices (almost never to almost always) rather than 2 (true or false).

Templer had controlled for a response set pattern by including 9 true items and 6 false items indicating death anxiety. The wording change obviously altered Templer's original response set pattern. The scale in this study contained only two items, #7 and #34, which were weighted in the opposite direction of the other Death Anxiety items. The advantages, however, of using four response choices
instead of two and of being able to embed the Death Anxiety Scale item in the Trait Anxiety Inventory seemed sufficient justification for the change. The rationale for embedding the items in the Trait Anxiety Inventory was simply one of convenience. Templer and Ruff (1971) found that there were no significant differences between findings on the scale when administered in both embedded and non-embedded forms.

**The Death Apperception Test.** The Death Apperception Test was developed by the author as a projective measure of death anxiety. The test contained five pictures depicting various scenes presumably evoking feelings of separation, loss and/or death: Card 1, school bus; Card 2, train station; Card 3, hospital scene; Card 4, wake; Card 5, graveyard scene. The subjects were asked to write a story in response to each picture.

The subject's responses to the Death Apperception Test were coded using a system similar to that devised by Amin (1975). A score of 1-5 was assigned to the responses to each picture. The criteria are outlined in Appendix D. For example, on Card 1 (school bus—separation theme), if the storyteller is aware of the separation theme, perceives the situation as an adventure or challenge with no apprehension and the outcome is favourable, he receives a score of one. On the other hand, if the theme is completely ignored, i.e., no mention of the separation theme, the response is interpreted as a form of denial and assigned
a score of five. Inter-rater reliability was determined by instructing an independent rater in the code using ten pilot subject protocols. The rater and the author then independently scored twenty protocols (with group identity removed) from the experimental and control groups.

**Demographic questionnaire.** This questionnaire included questions related to social status (Myers & Bean, 1968; see Appendix E), ethnic background, religion, recent experience with death and age. In addition, student nurses were given the option of adding their student identification numbers if they would be willing to participate in future research (Appendix A).

**Procedure**

All subjects were administered the test booklet which included the Spielberger Trait Anxiety Inventory, Templer's Modified Death Anxiety Scale, and a demographic questionnaire.

Order effects were controlled by administering the booklet in two forms to both groups. Half of the control group and half of the nursing group received the Death Apperception Test first, and the combined anxiety scales second. The others received the combined scales first and the Apperception Test second. The demographic questionnaire concluded both booklets.

The administration procedure differed slightly between the control and the nursing groups. Both were administered
in group form, but the nursing group required two sessions during a regularly scheduled class. The control group was administered the booklet all on the same day in smaller groups (6-15) in a classroom. All control subjects were volunteers from Psychology 115 courses. The number of males in Psychology 115 classes made it unfeasible (in terms of both time and materials) to administer the booklet in regularly scheduled Psychology 115 classes.

Volunteers were not informed beforehand of the research topic. All students in the control group received a credit point for participation and those students in the nursing group who were taking Psychology 115 also received a credit point.

Instructions were kept to a minimum and typed on the booklet. Subjects were informed at the outset that they did not have to participate in the study, and that a de-briefing session would take place after completion of the booklet (Appendix F). They were also assured that the identity of all subjects would be protected.

When doing the Death Apperception Test, subjects were instructed to turn only one page at a time and were given 7 minutes to complete each story. At the end of 7 minutes, but not before, the subjects were all requested to begin the next story. Ten minutes maximum was allowed to complete the combined anxiety scale. The final demographic questionnaire was not timed.
CHAPTER III

RESULTS

Scores on the two dependent variables, Death Anxiety Scale and Death Apperception Test, were obtained for all 85 subjects. In addition, the following covariates were utilized in the data analysis: raw scores for the Spielberger Trait Anxiety Inventory, age, religion (convention or lack of), identification number (present or absent, this applied to the nursing group only), marital status (married or unmarried), and recent experience with death (within or not within the past five years).

Characteristics of the Death Apperception Test

The Death Apperception Test was developed for this research as a projective measure of death anxiety. It was hoped that such a projective measure would get at fantasies about death that are below the conscious level.

Several analyses were conducted to determine reliability of the Death Apperception Test. First, the agreement of two independent raters in their scoring of the test was assessed by computing the product-moment correlation between their ratings, with an N of 20, \( r = .81, p < .001 \). Second, internal consistency of scores from the various pictures was evaluated by correlating the scores on the five pictures of the Test. The means and standard deviations for the indivi-
dual pictures are presented in Table 1, and the inter-
picture correlations in Table 2. On each of the pictures
a subject could receive a score from 1 to 5; on the whole
set of pictures, from 5 to 20. Third, the item-analysis
statistics were calculated for the five pictures; these are
presented in Table 3. An overall alpha reliability of 0.52
was obtained.

Thus it appears that the scale can be reliably scored,
that there are low, positive correlations among the scores
on the five pictures, and that the whole set of pictures
have a modest degree of internal consistency. It can be
seen in Table 1 that the mean scores increase from Picture 1
through Picture 5.

Comparison of Nursing and
Control Subjects

The means and standard deviations for the total scores
obtained by the nursing and control groups on the Death
Anxiety Scale and on the Death Apperception Test are pre-
sented in Table 4. Comparisons of the group means by t-tests
indicated that neither dependent measure significantly
differentiates between the two groups.

In order to compare levels of trait anxiety between the
nursing students and the control subjects, t-tests were also
done on the data from the Spielberger Trait Anxiety Inventory.
These results are presented in Table 5. This t-test is also
non-significant.
Table 1

Summary Data for Death Apperception Test,
Sample \((N = 85)\)

<table>
<thead>
<tr>
<th>Picture</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.25</td>
<td>1.11</td>
</tr>
<tr>
<td>2</td>
<td>2.47</td>
<td>0.87</td>
</tr>
<tr>
<td>3</td>
<td>2.82</td>
<td>1.23</td>
</tr>
<tr>
<td>4</td>
<td>2.94</td>
<td>0.90</td>
</tr>
<tr>
<td>5</td>
<td>3.05</td>
<td>1.01</td>
</tr>
</tbody>
</table>
### Table 2

**Correlations among Death Apperception Test Pictures ($N = 85$)**

<table>
<thead>
<tr>
<th>Pictures</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>0.26</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0.15</td>
<td>0.09</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>0.13</td>
<td>0.22</td>
<td>0.33*</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>0.09</td>
<td>0.22</td>
<td>0.23</td>
<td>0.08</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*$p < .05$*
Table 3

Item-Analysis of Death Apperception Test

(N = 85)

<table>
<thead>
<tr>
<th>Picture</th>
<th>Scale Mean if Item Deleted</th>
<th>Scale Variance if Item Deleted</th>
<th>Corrected Item-Total Correlation</th>
<th>Squared Multiple Correlation</th>
<th>Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>11.28</td>
<td>6.47</td>
<td>0.24</td>
<td>0.08</td>
<td>0.49</td>
</tr>
<tr>
<td>2</td>
<td>11.06</td>
<td>6.91</td>
<td>0.31</td>
<td>0.14</td>
<td>0.45</td>
</tr>
<tr>
<td>3</td>
<td>10.70</td>
<td>5.69</td>
<td>0.32</td>
<td>0.16</td>
<td>0.44</td>
</tr>
<tr>
<td>4</td>
<td>10.59</td>
<td>6.77</td>
<td>0.32</td>
<td>0.15</td>
<td>0.44</td>
</tr>
<tr>
<td>5</td>
<td>10.48</td>
<td>6.75</td>
<td>0.25</td>
<td>0.09</td>
<td>0.48</td>
</tr>
</tbody>
</table>

Alpha coefficient = 0.52
Table 4
Comparison of Nursing and Control Groups on Death Apperception Test and Death Anxiety Scale

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Nursing</td>
<td>Control</td>
<td>t value</td>
</tr>
<tr>
<td>Death Anxiety Scale</td>
<td>Mean</td>
<td>26.14</td>
<td>26.96</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>5.66</td>
<td>5.66</td>
<td>0.067</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>(n=44)</td>
<td>(n=40)</td>
<td></td>
</tr>
<tr>
<td>Death Apperception Test</td>
<td>Mean</td>
<td>13.91</td>
<td>13.18</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>2.82</td>
<td>3.09</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>(n=45)</td>
<td>(n=40)</td>
<td>1.128 ns</td>
</tr>
</tbody>
</table>
Table 5
Comparison of Nursing and Control Groups on Trait Anxiety Inventory

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurses</td>
<td>44</td>
<td>41.09</td>
<td>8.04</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>40</td>
<td>40.25</td>
<td>9.68</td>
<td>0.437</td>
</tr>
</tbody>
</table>
The effect of order of presentation (counterbalanced within groups) on the scores of the two dependent variables within each group was also analyzed using t-tests; these comparisons, presented in Table 6, are also non-significant.

A comparison of the means on the Death Anxiety Scale was done to assess the level of death anxiety in both groups. The control group's mean of 27 and standard deviation of 6 was taken as a normative score. A score above 33 (one standard deviation above the mean) was arbitrarily designated as a "high-death-anxious" score. In the total sample of 85 students, only 8 received a score above 33, 4 from the nursing group and 4 from the control group.

The same procedure was applied to the Death Apperception Test. Again, the control group was used as a normative population; it has a mean of 13 and standard deviation of 3. A score above 16 on the Death Apperception Test indicated a subject high in death anxiety. Thirteen subjects out of 85 received a score above 16; of these, 4 were in the control group and 9 in the nursing group. These differences were non-significant, Chi Square = 0.954.

The sample means and standard deviations of both the nursing and control group on the Anxiety Inventory were also compared with those of Spielberger's normative group of college freshmen (Spielberger, Gorsuch, & Lushene, 1970); the results are presented in Table 7. The normative scores on the Anxiety Inventory are just slightly lower than those
Table 6

Effect of Order of Presentation on Measures of Death Anxiety

<table>
<thead>
<tr>
<th>Test</th>
<th>Group</th>
<th>Order*</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death Anxiety</td>
<td>Nursing</td>
<td>P-Q</td>
<td>19</td>
<td>26.37</td>
<td>5.68</td>
<td></td>
</tr>
<tr>
<td>Scale</td>
<td></td>
<td>Q-P</td>
<td>25</td>
<td>25.96</td>
<td>5.75</td>
<td>0.234</td>
</tr>
<tr>
<td>Death Anxiety</td>
<td>Control</td>
<td>P-Q</td>
<td>20</td>
<td>27.15</td>
<td>5.70</td>
<td></td>
</tr>
<tr>
<td>Scale</td>
<td></td>
<td>Q-P</td>
<td>20</td>
<td>26.80</td>
<td>5.80</td>
<td>0.192</td>
</tr>
<tr>
<td>Death Apperception</td>
<td>Nursing</td>
<td>P-Q</td>
<td>20</td>
<td>13.30</td>
<td>2.34</td>
<td></td>
</tr>
<tr>
<td>Test</td>
<td></td>
<td>Q-P</td>
<td>25</td>
<td>14.40</td>
<td>3.24</td>
<td>1.710ns</td>
</tr>
<tr>
<td>Death Apperception</td>
<td>Control</td>
<td>P-Q</td>
<td>20</td>
<td>13.50</td>
<td>2.93</td>
<td></td>
</tr>
<tr>
<td>Test</td>
<td></td>
<td>Q-P</td>
<td>20</td>
<td>12.85</td>
<td>3.36</td>
<td>0.652</td>
</tr>
</tbody>
</table>

*P,Q = Picture first, questionnaire second; Q,P = Questionnaire first, picture second.
Table 7
Comparison of Samples of Present Study with Spielberger's Normative Group

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurses</td>
<td>44</td>
<td>41.09</td>
<td>8.04</td>
</tr>
<tr>
<td>Control</td>
<td>40</td>
<td>40.25</td>
<td>9.68</td>
</tr>
<tr>
<td>Normative Group</td>
<td>644</td>
<td>38.22</td>
<td>8.20</td>
</tr>
</tbody>
</table>
obtained by the nursing and control groups.

Thus it appears that neither the dependent measures nor the Trait Anxiety Inventory differentiated the two groups. In addition, there was no effect of order of presentation on any of these scores. Furthermore, it appears that overall death-anxiety levels for the two groups (though these are estimated only roughly) as measured by the Death Anxiety Scale are moderate or low. In addition, anxiety about death as measured by the Death Apperception Test did not significantly discriminate between the groups. Finally, it can be seen (Table 7) that neither sample differs greatly from Spielberger's (1970) normative group for college freshmen.

Analysis of Outliers

Visual inspection of the raw scores suggested that non-representative members of the population might have been included in the study. Scores on the Death Anxiety Scale, Death Apperception Test, and Trait Anxiety Inventory were therefore screened to identify outliers. As a result of this screening, three subjects were dropped from subsequent statistical analyses. The means and standard deviations of the samples before and after the data were screened for outliers are presented in Table 8.

Screening of multivariate data for outliers entailed computing the Mahalanobis distance of each case from the centre of the distribution of the remaining cases. If the
Table 8

Effect of Eliminating Outliers on Means and Standard Deviations (Total Sample, N=85)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Before Screening</th>
<th></th>
<th>After Screening</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Death Anxiety Scale</td>
<td>26.22</td>
<td>6.31</td>
<td>26.38</td>
<td>5.35</td>
</tr>
<tr>
<td>Death Apperception Test</td>
<td>13.56</td>
<td>3.01</td>
<td>13.40</td>
<td>2.84</td>
</tr>
<tr>
<td>Trait Anxiety Inventory</td>
<td>40.21</td>
<td>9.81</td>
<td>40.46</td>
<td>8.75</td>
</tr>
</tbody>
</table>
probability of the F-statistic corresponding to the greatest distance was smaller than a specified value (in this case, .05) the subject was removed and the process was repeated until all probabilities were sufficiently large.

The results of this analysis indicated that three subjects had scores on the above three measures which were significantly deviant from those expected in a normal distribution. The reduced sample of 82 was then utilized in further analyses.

**Stepwise Discriminant Analysis**

The possibility that the predictive weights of all variables (including covariates) considered together might differentiate the groups was investigated by computing a stepwise regression analysis on the remaining 82 subjects. The mathematical objective of discriminant analysis is to weight and linearly combine the discriminating variables in some fashion so that the groups are as statistically distinct as possible. The stepwise procedure selects the best discriminating functions.

The discriminant function that was derived is reported in Table 9. The eigenvalue, a measure of the relative importance of the function, is 0.22. The canonical correlation, another measure of the function's ability to discriminate between groups, is 0.42 and Wilks' Lambda is 0.82. This low eigenvalue, low canonical correlation, and high Lambda in-
Table 9
Discriminant Function for Separating Nursing and Control Students: Summary Data

<table>
<thead>
<tr>
<th>Eigenvalue</th>
<th>Canonical Correlation</th>
<th>Wilks' Lambda</th>
<th>Chi Square</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.22</td>
<td>0.42</td>
<td>0.82</td>
<td>15.27</td>
<td>5</td>
<td>.009</td>
</tr>
</tbody>
</table>
dicated that little information of any discriminating power was obtained with the discriminant function. Consistent with this finding the derived discriminant function's ability to differentiate between the groups was statistically non-significant.

The statistical contributions of the five variables constituting the discriminant function are presented in Table 10. Each coefficient represents the relative contribution of its associated variable to that function.

Thus it appears that although Nation, Picture 1, age, religion, and Picture 5 (presented here in the order of the strength of their discriminating power, highest to lowest) contributed to the discriminant function, these contributions were not strong enough to achieve an overall statistically significant differentiation between the groups.

The large contribution of nationality to the discriminant function coefficients did, however, warrant further analysis. This variable referred to the distinction between Chinese and non-Chinese students. Since there were no Chinese students in the control group, the variable of nationality which discriminated between the groups could obviously not be appropriately used. Even with nationality included, the prediction results, as outlined in Table 11, were only slightly better than chance. The percent of "Grouped" cases correctly classified was 60.98%.

A second stepwise discriminant analysis was run without
Table 10

Coefficients of Discriminant Function for Separating Nursing and Control Students

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standardized Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picture 1</td>
<td>0.687</td>
</tr>
<tr>
<td>Picture 5</td>
<td>0.251</td>
</tr>
<tr>
<td>Age</td>
<td>-0.295</td>
</tr>
<tr>
<td>Religion</td>
<td>0.261</td>
</tr>
<tr>
<td>Nation</td>
<td>0.857</td>
</tr>
<tr>
<td>Actual Group</td>
<td>N</td>
</tr>
<tr>
<td>--------------</td>
<td>----</td>
</tr>
<tr>
<td>Control</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurses</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
the nine Chinese students, reducing the total sample to 73. With nationality excluded, one discriminant function was derived; it is presented in Table 12. This function was also not significant in its ability to discriminate between the groups. The contributions of the three variables that constituted this discriminant function are presented in Table 13. Picture 1 of the Death Apperception Test was the major discriminator between the groups. In this analysis the percent of "Grouped" cases correctly classified was 64.38%. These prediction results are reported in Table 14.

A within-groups correlation matrix for all covariates and dependent measures is presented in Table 15. This analysis produced only one substantial correlation. The Spielberger Trait Anxiety Inventory correlated positively with Templer's Death Anxiety Scale ($r = .54, p < .01$).

In summary, after controlling for nationality, we found only three variables (Picture 1, age, and religion) related to group membership in our stepwise regression analyses, and their ability to discriminate between the groups was non-significant. In addition, the correlation matrix demonstrated very low relationships between the dependent measures and the covariates, with the exception of the correlation between the Death Anxiety Scale and the Trait Anxiety Inventory. The data described above were then further analyzed to assess the relative contributions of the three variables derived from the discriminant function analysis.
Table 12
Discriminant Function for Separating Nursing and Control Students with Reduced Sample
(N=73): Summary Data

<table>
<thead>
<tr>
<th>Eigenvalue</th>
<th>Canonical Correlation</th>
<th>Wilks' Lambda</th>
<th>Chi Square</th>
<th>df</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.112</td>
<td>0.31</td>
<td>0.898</td>
<td>7.42</td>
<td>3</td>
<td>0.06</td>
</tr>
</tbody>
</table>
Table 13

Discriminant Function for Separating Nursing from Control Students: Standardized Coefficients (N=73)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standardized Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picture 1</td>
<td>0.687</td>
</tr>
<tr>
<td>Age</td>
<td>-0.414</td>
</tr>
<tr>
<td>Religion</td>
<td>0.443</td>
</tr>
</tbody>
</table>
### Table 14
Classification Results from Discriminant Function, with Reduced Sample (N=73)

<table>
<thead>
<tr>
<th>Actual Group</th>
<th>N</th>
<th>Control</th>
<th>Nursing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>38</td>
<td>22</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(57.9%)</td>
<td>(42.1%)</td>
</tr>
<tr>
<td>Nurses</td>
<td>35</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(28.6%)</td>
<td>(71.4%)</td>
</tr>
</tbody>
</table>
Table 15
Correlation Matrix for all Covariates and Dependent Measures.

<table>
<thead>
<tr>
<th>Group</th>
<th>Scale</th>
<th>P1</th>
<th>P2</th>
<th>P3</th>
<th>P4</th>
<th>P5</th>
<th>STAI</th>
<th>Age</th>
<th>Rel</th>
<th>ISP</th>
<th>Mar</th>
<th>DExp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P1</td>
<td>0.14</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P2</td>
<td>-0.13</td>
<td>0.27</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P3</td>
<td>0.05</td>
<td>0.10</td>
<td>-0.00</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P4</td>
<td>0.14</td>
<td>0.18</td>
<td>0.20</td>
<td>0.32*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P5</td>
<td>0.02</td>
<td>0.15</td>
<td>0.18</td>
<td>0.17</td>
<td>0.01</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAI</td>
<td>0.54*</td>
<td>0.07</td>
<td>-0.15</td>
<td>0.10</td>
<td>0.07</td>
<td>-0.04</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>0.02</td>
<td>-0.07</td>
<td>-0.00</td>
<td>0.01</td>
<td>0.19</td>
<td>-0.00</td>
<td>0.12</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rel</td>
<td>-0.04</td>
<td>0.02</td>
<td>0.01</td>
<td>0.07</td>
<td>-0.00</td>
<td>0.03</td>
<td>0.08</td>
<td>-0.13</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISP</td>
<td>-0.09</td>
<td>0.09</td>
<td>-0.07</td>
<td>-0.14</td>
<td>-0.12</td>
<td>-0.12</td>
<td>0.02</td>
<td>0.22</td>
<td>0.14</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mar</td>
<td>-0.00</td>
<td>0.06</td>
<td>-0.10</td>
<td>0.19</td>
<td>-0.18</td>
<td>0.02</td>
<td>-0.10</td>
<td>-0.69</td>
<td>0.21</td>
<td>-0.18</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>DExp</td>
<td>0.28</td>
<td>0.18</td>
<td>0.03</td>
<td>0.07</td>
<td>0.00</td>
<td>0.10</td>
<td>0.09</td>
<td>0.01</td>
<td>-0.18</td>
<td>-0.07</td>
<td>-0.02</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*Scale = Death Anxiety Scale; P1 to P5 = Death Apperception Test; STAI = Spielberger Trait Anxiety Inventory; Rel = Religion; ISP = Index of Social Position; Mar = Married; DExp = Death Experience.

*p < .01
Multivariate Analysis of Variance

A multivariate analysis of variance was done to elicit further the contributions of those variables discovered by the stepwise discriminant function in predicting group membership. All the pictures from the Death Apperception Test were analyzed even though the stepwise discriminant analysis found that only Picture 1 was a major contributor to group differences. All five pictures were included in this analysis because of the author's interest in further investigation of the Death Apperception Test. Age, religion, Pictures 2, 3, 4, and 5 were not significantly related to group membership. Picture 1 was significant in differentiating the nursing and control group, $F(1, 69) = 4.34$, $p < .04$.

Since the covariates age and religion were not significant contributors to group differences, a second multivariate analysis was done to measure the effectiveness of the five Apperception Pictures alone (without covariates) in differentiating the groups. All five tests were nonsignificant when analyzed as a whole and separately. In fact, in this analysis, Picture 1 failed of significance, $F(1, 73) = 3.08$, $p < .09$.

Thus the MANOVA further substantiated that the Death Apperception Test is not a significant discriminator between the groups. In addition, age and religion did not contribute at a significant level to group differences.
However, when age and religion were combined with the variance accounted for by Picture 1, this combination produced a composite variable that significantly discriminated between groups. Yet when the variance of age and religion were dropped and Picture 1 was analyzed alone (but within the framework of a Manova) the effect of Picture 1 became non-significant.
CHAPTER IV

DISCUSSION

The present study was designed to investigate whether death anxiety is a factor in the choice of a health profession, and in addition, to develop a projective measure of death anxiety.

In terms of the first purpose of the study, the hypothesis that there would be a difference between groups on levels of death anxiety as measured by the Death Anxiety Scale and Death Apperception Test was not supported. In addition, no covariate (Spielberger Trait Anxiety Inventory, age, religion, Index of Social Position, identification number present in the nursing group, marital status, and recent experience with death) significantly differentiated between the groups. In fact, the only statistically significant difference between the two groups occurred when the variances attributable to the first picture of the Death Apperception Test (school bus—separation theme), age, and religion (the nursing group was somewhat younger and more conventionally religious) were combined in a multivariate analysis of variance. The nursing group scored significantly higher on this composite variable, even though age and religion alone were not significant in differentiating the groups.

46.
It is possible that the initial picture of the Death Apperception Test was tapping undefended feelings about separation and that defenses were later brought into play with the remaining four pictures. Whatever the source of the anxiety, the nurses did respond to the separation theme with greater anxiety than the control group. Thus, although the Death Anxiety Scale and the Death Apperception Test (as a whole) were not successful in differentiating between the two groups, the nurses did respond to a childhood separation theme with greater anxiety than non-nurses. Perhaps this differentiation occurred because this picture's theme was less explicit and less threatening in its content and the subjects had not yet consolidated their defenses when writing the first story. It may also be that unconscious death anxiety is related to unresolved sources of anxiety in childhood, e.g., leaving home at school age, and thus Picture 1 elicited more anxious themes. This finding alone probably doesn't warrant drawing conclusions about group differences, but it raises some interesting questions about the sources of death anxiety and suggests an area for further investigation.

Levels of anxiety on the Death Anxiety Scale were moderate or low, and trait anxiety levels were within the normative range, for both nursing and control groups. These death anxiety and trait anxiety levels indicated that both groups had few members who were highly anxious or
"death anxious." More nursing students than controls were in the "high death anxious" category for the Death Apperception Test, but this difference was non-significant (Chi square <1).

Therefore not only were the two groups similar, they were, overall, in spite of the differences on Picture 1, moderate or low on death anxiety measures. On the basis of the present data it seems apparent that death anxiety has the same distribution for both student nurses and non-nursing students. Consequently, the difficulty health professionals (at least nurses) experience when dealing with death may not be a result of initial high death anxiety, but simply of more frequent exposure to situations involving death. Much of the recent research has not used control groups in evaluating measures of death anxiety, and it seems imperative that future researchers be aware of this oversight when assessing death anxiety in groups such as nurses. In fact, because of the absence of controls in many of the published studies utilizing nurses, no comparative data for non-nursing subjects has been obtained. Consequently it is difficult to summarize and to compare this study with those done with nursing groups (Golub & Reznikoff, 1971; Lester, Gerry, & Kneisl, 1974; Yeaworth, Kapp, & Winget, 1974) because of the varying measures used (particularly, the different types of questionnaires used in each study) and the lack of control subjects in each case.
In addition, these findings do not support the views published in much of the recent literature (Caldwell & Mishara, 1972; Feifel, Hanson, Jones, & Edwards, 1967; Hinton, 1971; Mount, Jones, & Patterson, 1974; Shady, 1976). This literature consistently suggests that anxiety concerning death is a prominent trait in those caring for the dying.

One exception which did use a control population was the study by Feifel and his colleagues (1967), but their experimental group was composed of physicians. They found significantly higher levels of death anxiety in physicians than in a control group. They generalized from these findings to the statement that death anxiety plays a role in the choice of a health profession. Although this conclusion may be valid for physicians, it was not supported in the present research for student nurses and perhaps should not be generalized to health professions as a whole.

It certainly seems equally plausible to suggest that the reported difficulty of nurses in dealing with death may be influenced by the control that "high death anxious" physicians exercise in most hospital situations. This control, exercised by physicians who do not wish to tell patients of a terminal illness (Mount, Jones, & Patterson, 1974) or to discuss death and dying with an interviewer (Caldwell & Mishara, 1972), may restrict the freedom of nurses to communicate honestly and openly with their dying patients. Consequently, the nurses' behaviour may appear to reflect death anxiety when in
actuality it may represent inhibition due to the control of physicians.

In view of the difficulty in drawing reliable conclusions from the above studies on nurses it seems most important to develop a reliable measure of death anxiety if one wants to assess the efficacy of intervention programmes utilized in nursing curricula. In the evaluation of a programme designed to reduce death anxiety it seems reasonable to ask if death anxiety (as measured by questionnaires) is reduced because of the intervention and consequent increased awareness, or whether the nurse consolidates her defenses and learns to give the appropriate and expected answers. A possible solution in determining a programme's effectiveness would be measurement at two levels, conscious and unconscious level. In addition to developing these two levels of measurement, researchers on programme effectiveness should conduct interviews to further investigate the individual's source of death anxiety. Death anxiety for one individual may be the result of a specific situation (e.g., kissing a dead relative as a child) or of feelings associated with separation and loss (e.g., being left alone as a child). The complexity of the probable psychological sources would recommend that a trained psychologist conduct such interviews.

Another major purpose of the present study was to develop a projective measure of unconscious death anxiety. The results indicated, however, that this goal was only
The scoring of the test proved to be quite reliable ($r = .81$), utilizing two independent raters. As scoring progressed however, it became apparent that the range (1-5) for each picture was too narrow. On the first picture (school bus-separation theme), for example, a score of 4 was given for a negative outcome, such as a mother who cries all day and never resolves her unhappiness when her child starts to school. The same score of 4 was also assigned to more extreme and unanticipated responses, such as one in which the child's school bus crashed and there were no survivors. These unexpected violent responses came primarily from the nursing group, and the scoring range was probably too restricted to properly incorporate them. Therefore the scoring system needs to be further refined and developed to include a greater range (e.g., 1-9) to avoid compressing dissimilar responses into the same category.

The low positive inter-picture correlations (using data from all 85 subjects) and the overall alpha coefficient of .52 indicated that although each picture may be tapping some similar unconscious aspects of death anxiety, they were not doing so with sufficient reliability. Even though Picture 1 was able to differentiate between the groups (with the inclusion of age and religion as predictors), no particular picture deviated markedly from any other in its contribution to the total score (see Table 3). Therefore, no argument can be made (based on inter-picture correlations) that one
picture was more valuable than another in eliciting a death anxious theme.

Although the mean scores on each picture increased as the test progressed (possibly indicating greater death anxiety) for both groups (see Table 1), it is difficult to account for this increase. One possible explanation is that, even with one's defenses increasing, there might be a cumulative arousal effect of the death themes resulting in a corresponding increase in scores.

Additionally, it is interesting to note that the Death Apperception Test (as a whole or taking the pictures individually) did not correlate with the Death Anxiety Scale (see Table 15). In addition, the data showed that death anxiety correlates positively with trait anxiety ($r = .54$) although the relationship is not as high as would be expected if they were both measuring the same trait. The lack of correlation between the Death Anxiety Scale and the Death Apperception Test supports the notion that the latter is measuring unconscious death anxiety and thus correlates poorly with the former, which taps conscious and probably defended responses. If denial is a major factor at the conscious level, but aversion is a greater factor below the conscious level (Feifel & Branscomb, 1973), a low positive or negative correlation between the two tests would not be unexpected if both tests were valid.

Consequently, the major improvements in the Death
Apperception Test would entail the following: (a) broadening of the scoring range as mentioned previously; (b) dealing with refinements of the picture themes; and (c) investigating order (i.e., using a series of pilot studies with all possible combinations of pictures).

As stated above, the early separation theme on the first picture did differentiate between the groups. This finding lends support to that of Peifel et al. (1967) that the first recollections of anxiety about death were from 6-12 years of age. (Interestingly, for physicians the age range was 1-5.) Perhaps future pictures might be more keyed to themes designed to elicit unresolved childhood concerns that are related to possible sources of death anxiety, e.g., separation, loss, fear of mutilation. Other picture themes similar to Picture 1 could be developed, e.g., children leaving for camp, a hospital surgical scene and perhaps a death related scene (such as, an adult weeping near a coffin). To control for the arousal of defenses to themes so explicitly related to death (as in the present version), the number of explicit death themes could be reduced and pictures with unrelated and unthreatening themes could be interspersed among the four or five test pictures.

Summary and Conclusions

It appears that first year nursing students do not differ from other first year students on two measures of death anxiety. However, there is some indication that they
respond with greater anxiety to a separation theme. Further investigation into the sources of death anxiety and its relation to early (childhood) feelings about separation and loss seems warranted. These findings may require a re-evaluation of the position that those seeking a health profession (specifically nursing) are "high death anxious."

Although the development of the Death Apperception Test was only partially successful, areas of possible future improvement and refinement (e.g., scoring, theme changes, and investigation of order effects) seem warranted. It also seems to still be important for those measuring death anxiety to consider the unconscious as well as the conscious level. These considerations of death anxiety at two levels may answer some of the contradictions in the present research.
REFERENCES


This is a study of your imagination. Inside this folder there are 5 pictures. Your task will be to make up as dramatic a story as you can for each picture. Try to fill up the two pages allowed for each one. It should not be necessary to spend more than 5-7 minutes per story. Write your thoughts as they come to you keeping in mind the following:

1. What has led up to the incident?
2. What is happening now?
3. What are the characters thinking and feeling?
4. What will be the outcome?

Please do each page in order without looking at the pages that follow. Questions will be answered after completion of the booklet concerning the study.
1. What has led up to the incident?
2. What is happening now?
3. What are the characters thinking and feeling?
4. What will be the outcome?
(Story one continued...)
1. What has led up to the incident?
2. What is happening now?
3. What are the characters thinking and feeling?
4. What will be the outcome?
(Story two continued...)
1. What has led up to the incident?
2. What is happening now?
3. What are the characters thinking and feeling?
4. What will be the outcome?
(Story three continued...)
1. What has led up to the incident?
2. What is happening now?
3. What are the characters thinking and feeling?
4. What will be the outcome?
(Story four continued...)

62.
1. What has led up to the incident?
2. What is happening now?
3. What are the characters thinking and feeling?
4. What will be the outcome?
(Story five continued...)
SELF EVALUATION QUESTIONNAIRE

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you generally feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

Key: 1. Almost never
     2. Sometimes
     3. Often
     4. Almost always

1. I feel pleasant .................. 1 2 3 4
2. I am afraid to die .................. 1 2 3 4
3. I tire quickly .................. 1 2 3 4
4. The thought of death enters my mind .................. 1 2 3 4
5. I feel like crying .................. 1 2 3 4
6. I wish I could be as happy as others seem to be .................. 1 2 3 4
7. I feel at ease when people talk about death .................. 1 2 3 4
8. I am losing out on things because I can't make up my mind soon enough .. 1 2 3 4
9. I dread thinking about having an operation .................. 1 2 3 4
10. I feel rested .................. 1 2 3 4
11. I am "calm, cool, and collected" .... 1 2 3 4
12. I feel that difficulties are piling up so that I cannot overcome them .................. 1 2 3 4
13. I am afraid of getting cancer ........ 1 2 3 4
14. I worry too much over something that really does not matter ........ 1 2 3 4
15. I am happy .................. 1 2 3 4
16. The thought of death bothers me ..... 1 2 3 4
17. I am inclined to take things hard ... 1 2 3 4
18. I am distressed by the way time flies so very rapidly ........ 1 2 3 4
19. I lack self-confidence ............ 1 2 3 4
20. I feel secure ...................... 1 2 3 4
21. I fear dying a painful death ...... 1 2 3 4
22. I try to avoid facing a crisis or difficulty ....................... 1 2 3 4
23. The subject of life after death troubles me ...................... 1 2 3 4
24. I feel blue .......................... 1 2 3 4
25. I am content ....................... 1 2 3 4
26. I am really scared of having a heart attack ..................... 1 2 3 4
27. Some unimportant thought runs through my mind and bothers me ..... 1 2 3 4
28. I think about how short life really is ........................... 1 2 3 4
29. I take disappointments so keenly that I can't put them out of my mind ....................... 1 2 3 4
30. I shudder when I hear people talking about a World War III ...... 1 2 3 4
31. I am a steady person .................. 1 2 3 4
32. The sight of a dead body is horrifying to me ..................... 1 2 3 4
33. I become tense and upset when I think about my present concerns .... 1 2 3 4
34. I feel confidence in what the future holds for me .................. 1 2 3 4
Classification Information Questionnaire

Your answers to this questionnaire are anonymous. We need some information about such matters as your age, education, occupation and family background, in order to classify our subjects into various groups to see whether these background factors are related to personality. Would you please answer the following questions:

1. What is your age? ___ years.
2. Are you married? Yes ___; No ___.
3. What is your occupation? (Please describe fully, for example, rather than "Bell Canada" use "Telephone installer").

4. What is or was your father's occupation? ____________

5. What level of education have you completed? ____________

6. What level of education did your father complete? ____________

7. How would you state your religious beliefs or religious affiliation? ____________

8. Have you experienced the death of someone close to you or a death that has deeply affected you within the last five years? ____________

9. What culture or ethnic group do you belong to? ____________

Any nursing student that would be interested in participating in a follow-up study is invited to include their ID number. This information will be treated as confidential and solely for the use of the experimenter. ____________

Thank you for your participation in this research.
APPENDIX B
Templer's Death Anxiety Scale, 1971

The Fifteen DAS Items

<table>
<thead>
<tr>
<th>Key</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>I am very much afraid to die.</td>
</tr>
<tr>
<td>F</td>
<td>The thought of death seldom enters my mind.</td>
</tr>
<tr>
<td>F</td>
<td>It doesn't make me nervous when people talk about death.</td>
</tr>
<tr>
<td>T</td>
<td>I dread to think about having to have an operation.</td>
</tr>
<tr>
<td>F</td>
<td>I am not at all afraid to die.</td>
</tr>
<tr>
<td>F</td>
<td>I am not particularly afraid of getting cancer.</td>
</tr>
<tr>
<td>F</td>
<td>The thought of death never bothers me.</td>
</tr>
<tr>
<td>T</td>
<td>I am often distressed by the way time flies so very rapidly.</td>
</tr>
<tr>
<td>T</td>
<td>I fear dying a painful death.</td>
</tr>
<tr>
<td>T</td>
<td>The subject of life after death troubles me greatly.</td>
</tr>
<tr>
<td>T</td>
<td>I am really scared of having a heart attack.</td>
</tr>
<tr>
<td>T</td>
<td>I often think about how short life really is.</td>
</tr>
<tr>
<td>T</td>
<td>I shudder when I hear people talking about a World War III.</td>
</tr>
<tr>
<td>T</td>
<td>The sight of a dead body is horrifying to me.</td>
</tr>
<tr>
<td>F</td>
<td>I feel that the future holds nothing for me to fear.</td>
</tr>
</tbody>
</table>

67.
APPENDIX C

Templer's Death Anxiety Scale: A Modified Version

Key: 1. Almost never
     2. Sometimes
     3. Often
     4. Almost always

1. I am afraid to die ......................... 1 2 3 4
2. The thought of death enters my mind ... 1 2 3 4
3. I feel at ease when people talk about death ..................................... 1 2 3 4
4. I dread thinking about having an operation ....................................... 1 2 3 4
5. I am afraid of getting cancer ........ 1 2 3 4
6. The thought of death bothers me ...... 1 2 3 4
7. I am distressed by the way time flies so very rapidly ......................... 1 2 3 4
8. I fear dying a painful death ............ 1 2 3 4
9. The subject of life after death troubles me ....................................... 1 2 3 4
10. I am really scared of having a heart attack ...................................... 1 2 3 4
11. I think about how short life really is ........................................... 1 2 3 4
12. I shudder when I hear people talking about a World War III ................ 1 2 3 4
13. The sight of a dead body is horrifying to me ................................... 1 2 3 4
14. I feel confidence in what the future holds for me ............................. 1 2 3 4

68.
APPENDIX D

Coding Criteria

Coding - general points to be considered

A. If a theme does not exist in a story it receives a score of 5. A score of 1-4 is given depending on the degree to which a theme exists in a story and keeping in mind the following points and examples.

Scores decrease if a story is initially negative but has an appropriate positive outcome.

Scores increase under the following conditions:

1. Outcome of story negative
2. Solution of story inappropriately positive.

Coding Key:

<table>
<thead>
<tr>
<th>Theme Description</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness of separation theme, considered an adventure or challenge, no apprehension, outcome good.</td>
<td>1</td>
</tr>
<tr>
<td>Separation theme with loneliness, apprehension present, attempts are made to cope adequately, resolve and accept, outcome good.</td>
<td>2</td>
</tr>
<tr>
<td>Loneliness and fear expressed in a new situation, coping ineffectively, mother has difficulty coping with separation, outcome is guarded.</td>
<td>3</td>
</tr>
<tr>
<td>Anxious, fearful, outcome negative, unhappy or inappropriately positive.</td>
<td>4</td>
</tr>
<tr>
<td>No mention of separation theme, does not correspond with stimulus (denial).</td>
<td>5</td>
</tr>
</tbody>
</table>
II  Train Station

<table>
<thead>
<tr>
<th>Theme</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme of parting without sadness, good outcome.</td>
<td>1</td>
</tr>
<tr>
<td>Lonely and sad at parting with resolution, acceptance.</td>
<td>2</td>
</tr>
<tr>
<td>Loneliness and sadness, dread at parting, realization of unresolved issues, outcome is unhappy but accepted, i.e., a surface acceptance without resolution.</td>
<td>3</td>
</tr>
<tr>
<td>Anxiety and unhappiness at parting, outcome negative or inappropriately positive.</td>
<td>4</td>
</tr>
<tr>
<td>Parting or separation theme ignored (denial).</td>
<td>5</td>
</tr>
</tbody>
</table>

III  Hospital Scene

<table>
<thead>
<tr>
<th>Theme</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme of hospitalization, absence of defensive elements, clear coping with death, outcome expected and accepted.</td>
<td>1</td>
</tr>
<tr>
<td>Aged person dying, conflicts resolved, at peace with himself and others, theme of sadness but coping and acceptance.</td>
<td>2</td>
</tr>
<tr>
<td>Loneliness in death, guilt over past, unresolved issues, (e.g., family not visiting), tired, wanting to get it over with, reluctant acceptance.</td>
<td>3</td>
</tr>
<tr>
<td>Fearful and alone with death, death concerns of story-teller, no coping, struggle with death, distortion of stimuli (e.g., making patient young, etc.).</td>
<td>5</td>
</tr>
</tbody>
</table>
IV Wake

Expected, worked through, usually elderly person completes resolution, grieving expressed and appropriate.

Unexpected loss with acceptance and resolution, open grieving, good outcome for survivors.

Sudden loss, guilt of survivors, suppressing grief, and/or expressing grief inappropriately or unresolved in the end, lack of resolution.

Sudden loss, overwhelming confusion, concerns re body after death, self-death concerns, flight from the scene. Denial of personal loss, e.g., business partner, murder.

Denial of theme.

V Graveyard

Complete resolution of a death with acceptance by survivors.

Feeling loss still but coping and acceptance (outcome good for survivors).

Loss, guilt, ineffectively coping, outcome sad and lonely for survivors, depression but overcome.

Anxious, self concerns about survival, concern with body after death, no coping, flight, depression, withdrawal of survivors, negative outcome or inappropriate outcome.

Denial of theme.
APPENDIX E

Two Factor Index of Social Position —
Myers and Bean (1968)

Myers and Bean used two factors in determining the
index of social position: socioeconomic status, and
level of education. There are seven positions on the
occupational scale:

1. Executives and proprietors of large concerns
   and major professionals

2. Managers and proprietors of medium concerns
   and minor professionals

3. Administrative personnel of large concerns,
   owners of small independent businesses and
   semi-professionals

4. Owners of little businesses, clerical and
   sales workers, and technicians

5. Skilled workers

6. Semiskilled workers

7. Unskilled workers.

There are also seven positions on the educational
scale:

1. Graduate professional training

2. Standard college or university graduation

3. Partial college training (including individuals
   who have completed at least one year but not
   full college requirements)

4. High school graduation (including all secondary
   school graduates, whether from a private school,
   public school, or trade school)

5. Partial high school (including individuals who
   have completed the tenth or eleventh grades but
   not the full high school requirements)
6. Junior high school (including individuals who have completed the seventh, eighth, or ninth grades)

7. Less than seven years of school.

To obtain the index of social position score, the scale value for occupation is multiplied by the factor weight for occupation, which is 7; and the scale value for education is multiplied by the factor weight for education, which is 4. These two values are then added to obtain the index of social position score. By way of example, a physician would receive the following score:

<table>
<thead>
<tr>
<th>Factor</th>
<th>Scale Score</th>
<th>Factor Weight</th>
<th>Score x Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupation</td>
<td>1</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Education</td>
<td>1</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

Index of Social Position Score 11

The range of scores on the two factor index of social position is 11 to 77. Myers and Bean group the scores into the following social classes:

<table>
<thead>
<tr>
<th>Index of Social Position</th>
<th>Social Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 to 17</td>
<td>I - Upper Class</td>
</tr>
<tr>
<td>18 to 27</td>
<td>II - Upper Middle Class</td>
</tr>
<tr>
<td>28 to 43</td>
<td>III - Lower Middle Class</td>
</tr>
<tr>
<td>44 to 60</td>
<td>IV - Upper Lower Class</td>
</tr>
<tr>
<td>61 to 77</td>
<td>V - Lower Lower Class</td>
</tr>
</tbody>
</table>
APPENDIX F

Instructions to Subjects

I am a graduate student in Psychology interested in the study of attitudes and imagination. The task I am presenting to you deals solely with written responses.

(Nursing only) Your co-operation in this study would be greatly appreciated but you are free to choose not to participate.

No names or identification numbers will be requested. (Nursing students will be invited to submit their ID numbers voluntarily.)

All students registered in a Psychology 115 course will be given course credit for their participation.

Any and all questions concerning the purpose and outcome(s) of this study will be discussed with you after completion of the booklet (my name and department will be on the blackboard). Any students who want a summary of the results may leave their name with me today or contact me through the Psychology Department.

The research design requires that the booklet be administered in a standardized form. This means that I will ask you to all work on the same part of the booklet for the same amount of time:

**Booklet A**: For the first page of the booklet (Story 1), 7 minutes are allotted to complete the story, when 6 min. are up I will remind everyone that 1 min. remains and at the
end of that time everyone will start Story 2. Please do not begin until directed.

Questionnaire: (When beginning the questionnaire the subjects will be told that they have ten minutes to complete the form. The instructions printed in the top left corner will be read aloud by the Examiner.) Because we are interested in first impressions please do not erase or change your first response choice.

(Finally for both books, instruct the subjects that they will not be timed in filling out the final questionnaire.)

Booklet B: (Reverse the above instructions, questionnaire instructions first, pictures second.)

Questions during the administration will be answered in the following vein:

For questionnaire items, "Please give response to indicate how you generally feel."

For the pictures, "Just use your imagination keeping the 4 points printed on each page in mind."
VITA AUCTORIS

Lois (Dobson) McG Rory was born on October 26, 1939 in North Bay, Ontario. She received her primary and secondary education at Cache Bay Public School and Sturgeon Falls High School. Partial requirements for a Bachelor of Arts degree were fulfilled at the State University of New York, Buffalo, New York. In May 1975, she graduated from the University of Windsor with a Bachelor of Arts degree. In September 1975, she entered her qualifying year in the Master's programme in Clinical Psychology at the University of Windsor.