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Anxiety, the staff nurse, and cardio-pulmonary resuscitation

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Anxiety, the Staff Nurse, and Cardio-Pulmonary Resuscitation

by

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THESIS

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Abstract

The purpose of this exploratory study was to delineate
specific variables that influence the general care staff
nurse's perceived anxiety in a cardio-pulmonary arrest
situation. The specific variables under consideration
were the nurse's knowledge base in and work experience
with cardio-pulmonary resuscitation (CPR) and the individual's
perception of the employing institution's resuscitation
protocol. The personnel lists of three area hospitals
were stratified to obtain a roster of only the general,
medical-surgical registered nurses. From this stratified
pool, R.N.s from each hospital were randomly selected.
The R.N.s received a cross-sectional questionnaire of
25 fixed-format questions designed to elicit their knowledge
base in and work experience with cardio-pulmonary resus-
citation, and their perceptions of their hospital's resus-
citation protocol. They also received the Concept-specific
Anxiety Scale (CAS) to determine the level of anxiety
they perceived themselves experiencing in regard to cardio-
pulmonary arrest situations. Two-tail T-tests, Pearson r
correlations and analysis of variance were the statistical
tests used to determine the significance of each of the
variables as an influence on nurses' perceived anxiety.
Results indicate that CPR training had no significant
effect on anxiety scores on the CAS although the majority

of nurses indicated the training helped prepare them to participate in real resuscitation situations. Advanced Cardiac Life Support (ACLS) training proved significant in decreasing nurses' CAS scores ($p<.05$) but only 7 of the 60 nurses had this background. All 7 also had ICU experience and the latter proved to be a more significant influence on anxiety than ACLS training ($p<.05$). Nurses' active participation in cardio-pulmonary resuscitations was a significant factor in reducing anxiety response to resuscitation situations ($p<.05$). The more resuscitations the nurses had participated in, not merely witnessed, the better prepared and less anxious they felt about participation in future resuscitations ($p<.01$). However, ICU experience proved a more significant variable in influencing anxiety than even participation in resuscitation ($p=.001$). Although the majority of nurses (88.3%) were unfamiliar with their hospitals' resuscitation protocols, this was not a significant influence on their anxiety responses. Over 94% of nurses also indicated they preferred a resuscitation protocol that included a Code team concept different than the one presently employed in all three hospitals.

Chapter I

Introduction

A. Historical Perspective of Cardio-Pulmonary Resuscitation

Historically, the revival or resuscitation of the dead has been a subject of fascination, speculation, and mysticism. Through time, man has continuously sought ways to prevent the inevitability of death or, after it has occurred, to restore the individual to life.

The ancient Egyptians were very interested in concepts of circulation, the heart, and revival of the dead. The Smith Papyrus, believed to have been written around 1700 B.C., supplied the first written evidence of early civilization's thoughts on the heart and its pulses, and the human body in death (Willius, 1941).

According to ancient Greek mythology (Bulfinch, 1970), Aesculapius was endowed by his father Apollo, the sun god, with such skill in the healing arts that he was able to restore the dead to life. He did this with such proficiency and frequency that the god of the dead became alarmed. He asked Zeus, the king of the gods, to throw a thunderbolt at Aesculapius and kill him before Hades' realm became depleted. Zeus acquiesed, stating that the power to restore life to the dead should rest with the gods alone.

Throughout the Dark or Middle Ages (1096-1453), there was little advancement of science or creativity. Documentation of that era finds the philosophers and physicians more interested in the spirits of the dead and the mysticism of dying than in the prevention of illness and death (Baldry, 1971).

It was not until the Renaissance (1453-1600) and the early 18th century that a pathophysiological approach to death and the prevention of death appeared in the literature. This era teemed with scientific experiments and was the foundation of modern science.

Vesalius (1514-1564) was the first to demonstrate that the life of an animal could be sustained by artificial respiration after the thorax had been opened (Willius, 1941). He also discovered that the non-beating heart could often be resuscitated by the use of bellows blowing into the animal's lungs. Hooke (1635-1703) performed similar experiments on dogs and concluded that the motion of the lungs was necessary to promote circulation of the blood and, therefore, keep the animal alive (Hooke, 1667). A contemporary of Hooke's, Mayow (1643-1679), demonstrated that suppression of respiration caused the heart to cease beating and blood flow to the brain to halt. He concluded that one could live a short time without breathing if one's blood was well impregnated with air (Mayow, 1674). These early pioneers and their

contemporaries Harvey, Malpighi, and Boyle made significant

contributions to the advancement of medical science

and paved the road for the resuscitation experiments

performed on humans in the 18th and 19th centuries.

In a letter to Lord Cathcard, Cullen (1710-1790) described the death by drowning of a man as due

to "cessation of respiration and circulation, or the

loss of the Vital Principle" (Cullen, 1776). This Vital

Principle was body heat and Cullen detailed the necessary

procedures to restore that body heat and resuscitate

the victim. These procedures included the removal of

all the victim's clothing, rubbing the skin vigorously

and placing the body close to a roaring fire. To restore

action of the nerves and muscles, stimulation of the

intestines was essential. This was achieved by instilling

warmed air, preferably burning tobacco smoke, into the

victim's rectum via a bellows. The restoration of the

heart and lungs was initiated by sealing off one nostril

and the mouth, and blowing into the open nostril with

a wooden pipe. Once the air had inflated the chest,

the rescuer then pressed on the chest and abdomen to

expel the air. Cullen warned that revival might not

be immediate but could be anticipated within an hour.

He documented several successful attempts at resuscitation

using this popular 18th century technique.

The first record of a victim laid prone, with

chest elevated was described by Hall (1857). The victim
was placed in a prone position and pressure was applied
to his back to expel air. Pressure was then released
and the victim was turned onto his side causing inspiration.
This method was also apparently successful.

Through the 1900's, there were various resuscitation
theories advanced, particularly the Shafer Prone Method
(Graubard, 1964). This was similar to Hall's method
without turning the victim onto his side.

Not until 1962, was there a published report
on the use of external cardiac massage in combination
with artificial respiration. Kouwenhoven and Knickerbacker
(1962) advanced the theory that compressing the heart
between the sternum and the vertebral bodies forced
blood out of the heart, thereby maintaining an adequate
circulation. The relaxation of compressions allowed
the heart to fill. Artificial respiration through the
victim's mouth provided the oxygenation to maintain
life in the heart and brain tissues. This classic experiment
and article was the basis for the cardio-pulmonary resuscitation
(CPR) techniques that are practiced today.

Since 1962, changes have occurred, more research
has been performed, and the original theories have been
modified. For example, it now appears that it is the
intrathoracic pressure changes and not the actual "squeezing"
of the heart during compressions that maintains circulation

during CPR (Standards, 1980). Hopefully, as knowledge
and techniques become more refined and sophisticated,
resuscitation attempts will become more consistently
successful.

B. Problem Statement

Hospital administration and nursing staff
management of cardio-pulmonary resuscitation attempts
in general nursing care areas vary greatly from one
institution to another. Differing administrative protocols
for cardio-pulmonary arrest situations and extreme differences
in the knowledge base and experience of the staff nurses
in resuscitation are only a few examples of this great
divergence in resuscitation management. Even more interesting
are the wide ranges of perceptions that the nurses themselves
have regarding the cardio-pulmonary arrest situation.
These observations are based on professional experience.

Individual hospital protocols for cardio-
pulmonary resuscitation range from a well-defined, pre-
assigned "Code" team of experienced, trained personnel
to a disorganized response by personnel not necessarily
experienced or trained in resuscitation. The knowledge
base of the individual staff nurse can be as extensive
as Basic and Advanced Cardiac Life Support (BCLS/ACLS)
certification and a thorough, hospital-sponsored orientation
to the institution's specific resuscitation protocols,
or as minimal as a BCLS certification with no orientation

to the hospital's cardiac arrest protocols. Likewise, the general medical-surgical staff nurse may have extensive experience with cardio-pulmonary resuscitation and have a background in Intensive or Coronary Care nursing, ICU and CCU, respectively, or be a new graduate without experience in either resuscitation or ICU/CCU.

With such variant educational and experiential backgrounds, it is not surprising that nurses' perceptions of a cardio-pulmonary resuscitation range from calm, competent professionalism to profound fright and anxiety. The concern of this study is to examine the extent to which varying hospital protocols and the knowledge base and work experience of general care staff nurses affect their perception of cardio-pulmonary resuscitations.

C. Statement of Purpose

The purpose of this investigation is to determine whether nurses' perceived anxiety about a cardio-pulmonary arrest situation is related to their knowledge base and work experience in cardio-pulmonary resuscitation and their perception of the institutional resuscitation protocol.

D. Research Questions

The aim of this study is to delineate specific variables that influence general care staff nurses' anxiety in a cardio-pulmonary arrest situation. Specifically,

the question to be explored is: What is the relationship
between general care staff nurse' perceived anxiety
in cardio-pulmonary arrest situations and (a) their
knowledge base in cardio-pulmonary resuscitation, (b)
their work experience with cardio-pulmonary resuscitation,
and (c) their perceptions of the resuscitation protocols
of the employing institutions?

The following specific research questions
are related to the areas of knowledge, work experience,
and perceptions of institutional protocols.

a. Knowledge base in cardio-pulmonary resuscitation.

1. Is there a relationship between general
care staff nurses' perceived anxiety
in cardio-pulmonary arrest situations
and educational background in Basic Cardiac
Life Support (BCLS) and/or Advanced Cardiac
Life Support (ACLS)?

2. Is there a relationship between general
care staff nurses' perceived anxiety
and continuing education classes, other
than BCLS/ACLS, that deal with cardio-
pulmonary resuscitation?

3. Is there a relationship between general
care staff nurses' perceived anxiety
and their perceptions of the hospitals'

orientation programs?

b. Work experience in cardio-pulmonary resuscitation.

   1. Is there a relationship between general care staff nurses' perceived anxiety and the number of cardio-pulmonary resuscitations they have witnessed but not participated in?

   2. Is there a relationship between general care staff nurses' perceived anxiety and the number of cardio-pulmonary resuscitations they have actively participated in?

   3. Is there a relationship between general care staff nurses' perceived anxiety and their perceptions of the resuscitations they have witnessed or participated in?

   4. Is there a relationship between general care staff nurses' perceived anxiety and work experience in an ICU?

c. Perception of institutional resuscitation protocols.

   1. Is there a relationship between general care staff nurses' perceived anxiety and their perceptions of their institution's resuscitation protocols?

2. Is there a relationship between general
care staff nurses' perceived anxiety
and their preference for resuscitation
protocol?

E. Significance of Study

Despite an abundance of medical and paramedical
research devoted to cardio-pulmonary resuscitation outside
the hospital setting, there has been minimal research
dealing with resuscitation efforts within the hospital
setting, especially in the general, medical-surgical
nursing care areas. Nursing literature, both research
and narrative, yields even less information on the management
of cardio-pulmonary resuscitation. There has been no
investigation reported in the literature exploring the
anxieties of general, medical-surgical staff nurses
regarding cardio-pulmonary arrest situations. This
is more interesting considering that the nurse is the
one person constantly with the patient, and in over
60% of incidents is the one who recognizes the cardiac
arrest and initiates the resuscitative effort (Bernhard
et al., 1979).

Because anxiety is a normal reaction associated
with any "life or death" situation, it is natural that
cardio-pulmonary resuscitation situations are stressful
events, even to the most experienced professionals

(Walraven & Kavanaugh, 1979). It is essential to the patient's ultimate prognosis that the personnel immediately present at the arrest scene be able to react promptly and in a competent manner with life-saving techniques (Bernhard et al., 1979). Studies have shown that effective intervention within the first minute of arrest greatly increases the patient's chance for optimal survival (Bernhard et al.; Harrison, 1977; Karvitz, 1972; Tweed et al., 1980).

The immediate reactions of staff nurses are critical factors which affect the patient's survival. Delays due to inadequate knowledge or training, uncertainty as to role, and/or anxiety can waste precious minutes. Therefore, it is imperative that all nursing personnel be as knowledgeable and well-trained as possible in the details of cardio-pulmonary resuscitation (Sooriyaarachchi, 1976/77). Walraven and Kavanaugh (1979) have suggested that much of the confusion and disorganization inherent in many cardiac arrest situations is significantly decreased when the staff is knowledgeable and well-trained in resuscitation.

The significance of this study in attempting to define the variables that influence staff nurses' anxiety in a cardiac arrest situation cannot be overemphasized. Peplau (1952) describes gradations of moderate to severe

to panic levels of anxiety that greatly decrease the individual's ability to focus attention on a situation, thereby altering the ability to respond appropriately to stressful stimuli. Determining those factors that influence the anxiety response of the nurse would provide future opportunity to diminish or eliminate those variables that produce a high anxiety level and, therefore, hinder the nurse from performing in a competent manner to save a patient's life.

Chapter II

Literature Review and Theoretical Framework

A. Literature Review

Literature is scant regarding cardio-pulmonary resuscitation in the hospital setting, particularly in the general nursing care areas. There is some documentation dealing with the importance of educating and training all staff members involved in patient care in the techniques of resuscitation (Bernhard et al., 1979; Hampton, 1977; Rees, 1980; Schaefer, 1974; Wilson & Aarvold, 1975). Likewise, research has demonstrated the superior effectiveness of the "Code team" concept in increasing patient survival after a cardio-pulmonary arrest (Bernhard et al., 1979; Rogove et al., 1977; Sooriyaarachchi, 1976/77; Tweed et al., 1980). However, there is neither published literature available on the anxieties of staff members regarding a cardio-pulmonary arrest situation nor any literature as to the relationship between anxiety and a staff member's knowledge or experience with the resuscitation procedure.

Both narrative and research literature document the importance of education and training in cardio-pulmonary resuscitation techniques for all staff members as a means of enhancing patient survival from a cardiac

arrest. An experimental study by Bernhard, et al. (1979)
examined the records of 1006 resuscitation attempts
at a 500-bed city hospital. More than half (n=546)
of those patients were resuscitated before the initiation
of a CPR training program. The remainder (n=460) were
resuscitated after the training program and a CPR team
had been implemented. The CPR team consisted of medical
and surgical residents, ICU nurses, respiratory therapy
personnel, and an anesthesiologist. The training program
included lectures on and demonstrations of cardio-pulmonary
resuscitation based on American Hospital Association Stan-
dards (1980) as well as resuscitation practice on mannequins.
The team concept was implemented on all three shifts
and the members responded to cardio-pulmonary emergencies
announced by voice page or phone.

The frequency of restoration of adequate circulation
during the period before the training program (group I)
was compared to the frequency of restoration of circulation
after training (group II). Adequate spontaneous circulation
was restored in 207 of 537 patients (38.6%) before formal
CPR training and in 232 of 460 patients (50.4%) after
training. This increased patient response post-arrest was
significant ($p<.005$). Most arrests in both groups were recog-
nized by nurses (group I - 60.8%, group II - 67.3%). The
frequency of resumption of adequate circulation in patients

initially resuscitated by nurses after CPR training was
33.3% for group I and 52.6% for group II (p<.005). The
percentage of patients successfully resuscitated in
both the ICU and general care areas also increased significantly
after the institution of the training program and the
implementation of the CPR team (40.7 - 57.5% and 30.7 -
54.4%, respectively) (p<.05).

The authors concluded that since the majority
of cardiac arrests were recognized and resuscitation
initiated by the nursing staff, nurses should be well-
trained in the techniques of CPR. They also recommended
that this education in resuscitation not be exclusively
presented to the ICU staff but include the general,
medical-surgical nurses as well. This research clearly
demonstrates the effectiveness of education in resuscitation
for nursing and medical personnel in increasing initial
patient survival from cardiac arrest. It also supports
the concept of a CPR team of trained, well-educated
personnel experienced in resuscitation techniques.

Hampton (1974) lends credence to these findings
in his narrative article. He states that all members
of a hospital's staff involved in patient care should
participate in CPR education and training. He acknowledges
that nurses can carry out many life-saving procedures
and should be permitted to do so in emergency situations.

As Rees (1980) maintains, little or no time may be available before action must be taken in an arrest situation, and any decision must be the "right" decision based on sound deliberation, judgment and choice. This is why the very decision to use or not to use CPR demands participatory preparation: prior consultation, communication, and deliberation among all involved in patient care. Adequate preparation through education and training should reduce or eliminate indecision, assure compliance and increase efficiency (Curtin, 1979).

A means of providing learning opportunities in resuscitation is described by Calkin and Gulbrandsen (1978). They advocate laboratory experience in basic emergency care and CPR skills. This setting allows students the opportunity to intervene in simulated emergency situations and evaluate their own responses and behaviors. They are thus able to pre-plan and test the actions they might take when confronted with a true emergency. Robinson (1973) also advocates mock resuscitation drills and describes them as beneficial and educational to the staff in enhancing the efficiency of the emergency team.

Other literature in the area of in-hospital cardio-pulmonary resuscitation deals with the efficacy of an institutional cardiac arrest protocol that

includes a pre-designated resuscitation team, or "Code team". Alexander (1979) states that resuscitation policies, or the lack of them, are a source of great distress to many nurses because they are frequently uncertain as to their role in the initiation of the resuscitation effort. As Walraven and Kavanaugh (1979) state, role negotiations and assignments belong in the planning phase of a Code team, not at the arrest scene. Curtin (1979) asserts that the development of a rational and organized policy which focuses on what needs to be done and by whom during the resuscitation effort is one option to institutions to alleviate staff uncertainty and distress.

An explanatory study by Sooriyaarchchi (1976/77) illustrated the feasibility of instituting a resuscitation protocol using limited personnel and equipment, i.e., a team approach. In a 230-bed general hospital in Britain, a CPR team was organized and consisted of medical and surgical residents, the charge nurses of the medical unit and the emergency department, and an orderly. Specific functions were assigned to each member of the team. The medical chief of staff was designated the leader of the CPR team and was also responsible for the training of the medical and nursing staff in CPR. The organizational aspects, the techniques of CPR, and the specific duties of each staff member were discussed at several meetings. Numerous practice sessions and mock resuscitation drills

were held to familiarize the team with procedures and their roles. A simplified resuscitation cart containing the essential equipment, instruments and drugs was used in the drills and was eventually kept in a central location in the hospital for use in a true emergency.

The CPR team was alerted by the activation of the public address system and team members converged at the arrest scene while the orderly obtained the CPR cart. The nursing staff at the location maintained the resuscitation until the team arrived and then assumed the duties of recording the events of the resuscitation. The team assumed responsibility for all resuscitation procedures, each member performing his pre-designated function. The effort was coordinated by the team leader who gave instructions for the administration of drugs and defibrillation as necessary. All relevant information on each CPR attempt was carefully documented and critique sessions were held immediately after the resuscitation with team members and the staff at the scene.

Over a period of seven months, 25 cardiac arrests occurred in 22 patients. The majority of attempts (n=13) were initially successful but only 4 of the patients were discharged alive. Post-resuscitation deaths were attributed to the severity of the underlying illness, development of shock and late-onset arrhythmias.

This study did not compare the pre-resuscitation team success rates with those after the CPR team had been implemented. It is not possible to conclude, based on these results, whether the Code team concept was significant in reducing mortality in this institution. Rather, the purpose of the study appears to have been the development and implementation of the team concept itself. Sooriyaarachchi concludes that it is feasible to implement an organized CPR program with training of medical and nursing personnel in the essentials of cardiopulmonary resuscitation. The author further advocates the use of a limited number of well-educated and trained staff who have specific, pre-designated functions to avoid confusion and repetition of procedures at the bedside. He also stresses that having the team leader as the sole coordinator of activity reduces ambiguity and indecision. As in the Bernhard et al. study, this research demonstrated that nurses are usually the first witnesses of cardiac arrest (16 of 25 arrests) and are the initiators of resuscitation activity. It is, therefore, vital that all nursing staff, not just Code team members, be capable of initiating and maintaining resuscitation until the arrival of the Code team.

Studies by Rogove et al. (1977) and Tweed et al. (1980) retrospectively examined the records of

patients who underwent cardio-pulmonary resuscitation over ten years and five years, respectively. The two studies had a similar purpose: to determine the ultimate outcome of resuscitation, i.e., how many resuscitation patients actually survived to leave the hospital. The Rogove et al. study included over 1200 patients in a large general hospital who suffered cardiac arrest and were resuscitated. Less than half, 271 (22.6%), were successfully resuscitated and only 3-7% ultimately left the hospital alive. The research of Tweed et al., examined records of 2091 cardiac arrest patients of whom 360 (17.2%) were successfully resuscitated but only 261 (12.5%) survived to leave the hospital.

The institutions in both studies had Code teams that had been operational for more than six years. Both also strongly endorsed the nurse's role in cardio-pulmonary resuscitation. Rogove states that the nurse's role may range from that of principle clinician directing the resuscitative effort to that of team member responsible for any of the team's functions (ventilation, precordial compression, medication administration, record keeping, etc.). The experienced nurse was also viewed as the key individual in the anticipation and possible prevention of cardiac arrest, or as the primary initiator of a resuscitative effort.

The low survival rates of both institutions
are similar to experiences from other major medical
centers (Hill, 1973; Lemire & Johnson, 1972; Robinson,
1965). Rogove admits that the survival of patients
after cardio-pulmonary arrest is contigent on the cardio-
respiratory, metabolic, and neural status, the age
and underlying disease of patients, as well as the skill
of the CPR team. Tweed reports that the decreasing
survival with increasing age was highly significant
by analysis of variance ($p<.001$). The latter study also
showed that the rate of survival after resuscitation
depended significantly on the location of the arrest
($p<.001$). Nearly 32% of patients resuscitated in the
Emergency Department and 20.1% of those resuscitated
in the Critical Care areas survived to leave the hospital.
These results were similar to data from the Rogove study.
But patient survival was significantly less ($p<.001$)
after resuscitation on the general floors, only 9.7%
of those patients were discharged alive. Tweed attributed
this statistic to the greater number of general care patients
(27%) who were terminally ill or who had chronic multi-
system diseases.

Both studies stress that patient survival
from cardiac arrest hinges on many factors, of which
the speed and efficiency of the Code team and the education

in CPR of all staff members are a part. The authors
acknowledge that even with excellent education and training
in resuscitation, patients will continue to die from
cardiac arrest because aspects of their illnesses are
beyond control.

In summary, it is clear that the role of the
nurse in cardio-pulmonary resuscitation is well established.
It may range from that of team member responsible for
any one of many life-saving functions to principle clinician
directing the resuscitation effort (Rogove et al.,
1977). Research has shown that the most effective resuscitative
effort includes a team of limited personnel who are
well-trained, educated, and experienced in resuscitation
techniques and who function as the resuscitation team
on a consistent basis (Bernhard et al., 1979; Hampton,
1974; Rees, 1980; Sooriyaarachchi, 1976/77). But as
Rogove et al. (1977) and Tweed et al. (1980) document,
even the implementation of these teams has not been able
to alter the course of events for particular victims of
cardiac arrest, i.e., the aged, the chronically ill.

What is not well-established are the perceptions
and anxieties of nurses about their role in cardio-
pulmonary resuscitation. Any variables that influence
these perceptions and anxieties to the extent that they
affect the nurse's ability to perform in a competent

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manner need to be fully assessed. This is an area of
crucial importance, as yet undocumented, since the nurse
plays a significant role in improving patient survival
from cardio-pulmonary arrest.

B. Theoretical Framework

Anxiety is generally regarded as a fundamental
human emotion and is an accepted concept in most theories
of personality and psychopathology (Freud, 1933; Froelich,
1978; Hardin-Branch, 1965; Jenkins, 1955; Levitt, 1967;
Kelly, 1980; Spielberger & Diaz-Guerrero, 1976). As
Burd (1963) states, "the concept of anxiety explains
many clinical observations in nursing and allows for
broad applicability to the individual differences among
nurses" (p. 307).

Spielberger (1976) defines anxiety as "the
intensity of the subjective feelings of tension, apprehensiveness,
nervousness, and/or worry that are experienced by an
individual at a particular moment; these anxiety states
vary in intensity and duration, and fluctuate over time"
(p. 5). When the intensity of these feelings of powerlessness
and helplessness becomes too strong to cope with, the
anxiety paralyzes the person, and he experiences panic
(May, 1982). Behaviors resulting from anxiety states
include restlessness, trembling, shortness of breath,
tachycardia, muscle tension (Spielberger, 1979). However,

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these feelings and behaviors can often be overcome,
coped with and transformed into challenge and creativity
(May, 1982).

Spielberger (1976) carefully distinguishes
anxiety from stress by defining the latter as "the objective,
consensually validated stimulus properties of any situation
that is characterized by some degree of physical or
psychological danger" (p. 5). He extends his premise
further by stating that "failure to distinguish between
stress and anxiety confounds the objective stimulus
characteristics of stressful situations with the subjective
emotional reactions that are experienced in those situations"
(p.4). May (1982) agrees that the error in current
literature is to use stress as a synonym for anxiety.
He describes stress as a measurable phenomenon whereas
anxiety is very difficult to measure because it is a
subjective experience.

The following linear model illustrates Spielberger's
anxiety theory (1979, p. 17):

Stressor-->Perception of Threat-->

-->Change in Anxiety Level

According to this model, stress is initiated by an objective
situation or stimulus that is potentially harmful or
dangerous, i.e., the stressor. Perception implies an
awareness by the individual of his environment. Threat

refers to the individual's own appraisal or perception
of that stressor as dangerous. The experience of threat
is a state of mind having two main characteristics:
(a) it is future oriented, that is, it generally involves
the anticipation of potential harm that has not yet
happened, and (b) it consists of mental processes, including
perception, thought, memory, and judgment (Spielberger,
1979). Individual reactions to the stressor depend
on whether or not the particular situation or stimulus
is subjectively perceived as threatening. Thus, a stressful
event may not be perceived as threatening by one who
either does not recognize the inherent danger or has
the necessary skills and experience to cope with it
(Spielberger, 1979). This individual would experience
minimal changes in anxiety level and would appear calm,
composed and attentive. But a person lacking in the
necessary skills and experience may perceive the same
stressor as threatening and experience an increase in
anxiety. The intensity of this anxiety reaction is
proportional to the magnitude of the perceived threat
(May, 1977; Spielberger, 1979). For example, tension,
apprehension, and nervousness might accompany moderate
levels of anxiety while intense feelings of fear and
panic characterize very high levels of anxiety (Spielberger,
1979).

Brief descriptions of the behavioral manifes-
tations of the various "levels" of anxiety are needed.
May (1977) defines the concept of normal anxiety and Peplau
(1952) extensively describes both normal and abnormal anxiety
reactions as well as the characteristic behavior of both.
According to May (1977), anxiety is a reflection of how an
individual relates to stress, accepts the stress, and interprets
it. Therefore, anxiety is an expression of the ability to
handle stress. He defines normal anxiety as "that which
(a) is not disproportionate to the objective threat, (b)
does not involve repression or other mechanisms of conflict,
(c) does not require neurotic defense mechanisms for
its management, and (d) can be confronted constructively
on the level of conscious awareness" (May, 1977, p.
209). In essence, when certain situations are perceived
as threatening, some degree of anxiety is expected and
is considered normal. This level of anxiety can be
channeled into appropriate behavior to effectively deal
with the threatening situation (May, 1977; Spielberger,
1979). The individual is more alert, better able to
follow instructions and to assimilate and analyze the
input from the total environment (Peplau, 1952).

But what of the moderate or high levels of
anxiety that May does not describe? The work of Peplau
(1952) and others on anxiety, clearly defines the behaviors
resulting from higher levels of anxiety. When an individual

perceives such threat in a situation that he responds
with a severe or panic level of anxiety, his behavior
becomes markedly fearful, unproductive, and unresponsive
to environmental stimuli (Burd & Marshall, 1963; Hardin-
Branch, 1965; Peplau, 1952). Specifically, the person's
perceptual field is greatly narrowed, he is unable to
focus on anything, even if instructed to do so; he will
be unable to learn or assimilate any information or
instruction; his behavior may either be "acting out"
in anger or resentment or "frozen", i.e., withdrawn
or depressed; and his primary objective will be reducing
or relieving the anxiety, and preventing greater anxiety
(Peplau, 1963). Similar responses to high levels of
anxiety have been described by Spielberger (1972) and
Stuart and Sundeen (1979).

These behavioral manifestations of anxiety
can be assessed in an individual in a variety of situations
over a period of time (Soloman-Hast, 1981). Assessment
must be systematic and deliberate. It must include
an assessment of the noxious stimuli feeding the anxiety
process and detached observations of the person's behavioral
manifestations of elevated anxiety levels (Francis &
Munjas, 1968; Soloman-Hast, 1981). In this way, interventions
to reduce or alleviate the anxiety response may be developed
and tested.

A final step in the definition of anxiety concerns its existence as a state or trait emotion. Anxiety as an emotional trait is referred to as trait anxiety (A-trait) by Spielberger (1966). A-trait is a basic personality trait acquired throughout a lifetime as a result of life experiences. It defines a personality characteristic of "anxiety-proneness" that influences a wide range of behaviors. This trait serves as an anxiety threshold, determining the degree of anxiety that will be tolerated by the individual (Soloman-Hast, 1981; Spielberger, 1966).

Anxiety as an emotional state is labeled state anxiety (A-state) by Spielberger (1966). A-state refers to the complex emotional reactions that a person actually experiences in a general situation that is perceived as threatening. The A-state is characterized by feelings of tension, apprehension, etc. and describes the person's current state of anxiety. It can be strongly influenced by the skills and experience the person has on hand to handle the stressful situation. The intensity and duration of this state are proportional to the amount of threat perceived and the ability of the person to effectively respond to the threat (May, 1977; Spiel-berger, 1979).

Spielberger's theoretical concepts of state

and trait anxiety provide the framework for another
type of anxiety, concept-specific anxiety. Concept-specific
anxiety has been defined by Cole and Oetting (1968) as
the anxiety associated with a specific, defined situation.
Concept-specific anxiety is much more narrow than A-trait
or A-state and enables an individual to accurately delineate
those specific situations that arouse an anxiety response.
This concept of anxiety is the basis for the Concept-
specific Anxiety Scale (CAS) that is used in this investigation
to measure nurse's anxiety in cardio-pulmonary arrest
situations.

Spielberger's anxiety model provides a sound
framework for this investigation into general care staff
nurse's perceived anxiety in cardio-pulmonary arrest
situations. A mild degree of anxiety is to be expected
given the seriousness of the event and, as stated before,
has been shown to enhance an individual's alertness
and use of capabilities (May, 1977; Peplau, 1952, 1963).
But anxiety reaching severe or panic levels has been
well documented as inhibiting a person's ability to
perform in a competent manner (Burd & Marshall, 1963;
Hardin-Branch, 1965; May, 1977; Peplau, 1952, 1963;
Soloman-Hast, 1981; Spielberger, 1979). This type of
anxiety response in a cardio-pulmonary arrest situation

could promote behaviors that could further compromise the patient.

These excessive and inhibiting levels of anxiety can be reduced or eliminated by the individual's securing of adequate levels of knowledge and experience to match the demands of the particular situation (Claus & Bailey, 1980; Froelich, 1978; Johnson, 1975; Lazarus, 1966; Peplau, 1952; Spielberger, 1976, 1979; White, 1974). Claus and Bailey (1980) state that nurses perceive stressors in the work environment differently, i.e., what may be a challenge to one nurse may be extremely stressful to another. They also maintain that the degree to which the person's knowledge, ability and skills match the requirements of the job and particular aspects of the job determines the amount of stress, and, therefore, anxiety, the individual will experience in the job setting. They emphasize that this job stress may lower performance.

Similarly, White (1974) states that an adequate amount of information about the environment is an obvious necessity for constructive, adaptive behavior. This amount of information must not be too great so as to overload and confuse, or too little as to leave the person no choices to select from. White further suggests that it is not the actual quantity of information that is important but the quality, the potential benefits and harms that are emphasized to make the greatest impact. Froelich (1978) echoes this by stating that information about impending events, especially those that may arouse fear

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or invoke fearful memories, may help to desensitize those events and make them less stressful, less anxiety-producing. "It is the unfortunate capacity of human beings to remember past traumatic experiences and/or anticipate future ones that make them so highly and continually vulnerable to anxiety" (Lazarus, 1966, p. 92).

Peplau (1952) is specific in her statement that unmet needs for information increase a person's level of anxiety. Individuals will invent personal explanations and reasons to reduce anxiety when accurate information is not available. This defense mechanism, however, is not as successful at alleviating anxiety as is possession of an adequate store of information. Peplau also maintains that when a nurse understands the events in a situation and possesses the knowledge and skills required for a planned intervention, anxiety is likely to be held to a minimum in that situation.

In conclusion, Spielberger's (1979) theory that the degree of anxiety in a situation is related to the individual's perception of threat is the theoretical framework of this study. Furthermore, the theoretical proposition that an adequate amount of knowledge and expertise in a given area will deter excessive levels of anxiety can be extended to the anxiety that nurses

may experience in cardio-pulmonary arrest situations. This concept-specific anxiety situation will be assessed using the Concept-specific Anxiety Scale (Cole & Oetting, 1968).

Numerous investigations have been conducted using the CAS as a measure of different anxiety-provoking situations. Birney (1970) investigated the relationship between verbal feedback in a counseling session and anxiety about snakes. A class of introductory psychology students volunteered to take the CAS without advance knowledge that the situation to be assessed was snakes. The sample size was 100. Those 100 students who scored highest in anxiety about snakes were selected for the study. They were divided into five groups, 3 experimental and 2 control. The experimental groups initially discussed a neutral topic and then the experimental topic of snakes. They received verbal feedback from an unseen researcher in a separate room over a microphone. The rates of feedback varied for the three experimental groups: every 8 seconds, every 20 seconds, and no feedback. The control groups received no feedback and discussed differing neutral topics. All 5 groups were then given the CAS again as a post-test measure of anxiety about snakes. Results of the study revealed that a high rate of verbal feedback (every 8 seconds) produced a significant decrease in anxiety,

particularly in females ($p<.01$). A low rate of verbal
feedback (every 20 seconds) facilitated an increase in
anxiety in males but females remained the same or decreased
in anxiety. The experimental group that discussed the
topic of snakes without any feedback experienced significantly
higher anxiety scores ($p<.01$). The control groups were
essentially unchanged in pre- and post-test CAS scores.
The CAS proved to be a valid measure of changes in anxiety
about snakes when the subjects were exposed to verbal
feedback.

Another study by Cole, Oetting and Dinges (1973)
assessed the effect of verbal feedback on anxiety. The
purpose of the study was two-fold: to determine the impact
of focusing on positive and negative aspects of self and
to assess the impact of interviewer verbal response vs.
silence on anxiety. Eighty subjects were randomly assigned
equally by sex to four self-positive or self-negative
discussion groups. The eighty subjects received the CAS
with either a positive or negative concept of self, "Me
at my best" or "Me at my worst", depending on their assigned
group. One of the self-positive and one of the self-
negative groups had interviewers who verbally responded
to them, while the interviewers in the other two groups
maintained silence. At the end of a 1-week session, all
subjects were given a post-test CAS. The results revealed

that the group that talked negatively about themselves
in the presence of a silent interviewer experienced a
significant increase in anxiety ($p<.05$). But the self-
negative group with the actively responding interviewer
had little change in anxiety. Similarly, the self-positive
group experienced a decrease in anxiety in the presence
of the silent interviewer ($p<.05$) but the group with the
verbalizing interviewer had minimal changes in anxiety.
The researchers concluded that discussions of self in
a positive or negative manner were self-reinforcing in
the absence of verbal feedback and that verbal feedback
limited subjects' anxiety responses to these particular
concepts. The CAS was an adequate measure of the anxiety
provoked by the concepts "Me at my best" and "Me at my
worst" and the impact of interviewer responsiveness on
that anxiety.

Dinges and Oetting (1972) conducted a study
using a pictorial form of the CAS developed by Dinges
(1970). The pictures presented the situation rather than
a verbal statement. The pictures were of a 29-year old
male seated and talking to a 24-year old female, also
seated. The chairs were at a 45° angle. Five different
pictures were used with the seats located at varying distances
from each other, 30, 39, 50, 66, and 88 inches. In this
study, 66 males and 66 females were asked to rate the

anxiety they associated with each of the pictures. One
half of the group were told to respond to the pictures
as if they had come to a counseling center for help with
a personal psychological problem. The other half were
merely asked how they would feel in that situation. At
all distances and for both concept situations, females
were significantly more anxious than males ($p < .005$). Males
and females in the experimental "counseling" situation
were more anxious than the control "social" situation
group ($p < .05$). For both males and females in either group
the closest distance (30 inches) and the farthest distance
(88 inches) provoked significantly greater anxiety than
the middle distances ($p < .001$). The researchers concluded
that a counseling situation is associated with greater
threat and therefore, anxiety, than a standard social
interaction. This is supported by the increased anxiety
scores for both the males and females in the experimental
group. The greater overall anxiety demonstrated by females
at all interaction distances is consistent with data from
other studies that examined concepts of personal space
(Dinges, 1970; Sommer, 1969).

The above investigations illustrate the versatility
of the Concept-specific Anxiety Scale in measuring the
anxiety related to different situations. Other studies

further supporting the reliability and validity of the
instrument are detailed in Chapter III.

Chapter III

Methodology

A. Research Design

The aim of this exploratory study was to delineate
specific variables that influence general care staff nurses'
perceived anxiety in a cardio-pulmonary resuscitation
situation. Because this area of investigation had been
minimally explored and nurses' perceptions were involved,
a descriptive-correlational design using a cross-sectional
survey-questionnaire and an anxiety scale was used to
gather the information.

B. Operational Definitions

General Care Staff Nurses: Any registered nurses
working as staff nurses in non-critical care, medical-
surgical areas. Nurses employed in specialty areas such
as ICU, CCU, OR, ER, Labor and Delivery, and Psychiatry
were excluded from the study.

Anxiety: "The subjective feelings of tension,
apprehensiveness, nervousness, and/or worry that are experienced
by an individual at a particular moment; these anxiety
states vary in intensity and duration, and fluctuate over
time" (Spielberger, 1975, p. 5).

Perceived Anxiety: The feelings of anxiety
experienced by an individual in relation to a particular

situation or event. Perceived anxiety is measured in this study by the Concept-specific Anxiety Scale (Cole & Oetting, 1968).

Cardio-Pulmonary Arrest; Cardiac Arrest: The clinical cessation of respiration and heartbeat as determined by the absence of respiration and pulse; a Code situation.

Cardio-Pulmonary Resuscitation: Basic or Advanced Cardiac Life Support (BCLS/ACLS) activity performed on a patient who has suffered a cardiac arrest.

Knowledge Base: The knowledge a nurse has obtained through continuing education dealing with cardio-pulmonary resuscitation. It includes three distinct types of education: (a) any BCLS/ACLS classes; (b) any cardio-pulmonary resuscitation inservice or continuing education classes, other than BCLS/ACLS; and (c) the orientation program of the employing institution and the extent to which cardio-pulmonary resuscitation is dealt with in that program.

Work Experience: The experience a nurse has acquired through employment in cardio-pulmonary resuscitation. It includes three aspects of experience: (a) any cardio-pulmonary resuscitations a nurse may have been witness to but not an active participant in; (b) any cardio-pulmonary resuscitations a nurse may have actively participated in; and (c) any experience in an Intensive Care Unit (ICU).

Perception of Cardio-Pulmonary Resuscitation

Protocol: This refers to the employing hospital's protocol

or policy on cardio-pulmonary resuscitation. This protocol

may be highly structured and well-defined with a pre-

designated resuscitation team of the same limited number

of personnel well-trained and experienced in resuscitation

techniques. This team may be any combination of physicians,

nurses, and/or technicians and is referred to as a Code

team. Hospital protocols may also be loosely structured

with or without a specific policy for resuscitation situations.

The respondents to the cardiac arrest are not the same

group of personnel and may or may not be trained or experienced

in resuscitation techniques. This group may also be composed

of physicians, nurses and/or technicians. The general

care staff nurses' perceptions of the protocols of their

institutions was the variable of interest here.

C. Sample

A sample of 60 general care staff nurses from

three San Francisco Bay Area hospitals participated in

the study. There were 20 nurses from Hospital A, 19 from

Hospital B, and 21 from Hospital C. Of these, 58 (96.7%)

were female and 2 (3.3%) were male.

Demographic data responses were tabulated for

the three hospitals together and individually. There were

no significant differences in the demographic data among

the three institutions. The mean scores for age, years

since graduation from nursing school, length of present

employment, and number of hospitals employed in since

graduation are summarized in Table 1. The average age
of the total sample was 33.7 years. The nurses graduated
an average of 10.03 years ago from nursing school and
held an average of 3.4 jobs in the hospital setting since
graduation. The mean length of employment in their present
institutions was 4.09 years. Pearson r correlations did
not reveal any significant relationships between these
demographic variables and the nurses' CAS scores when
the total sample was analyzed.

Table 1

Means & Standard Deviations of Demographic Data

For Three Hospitals Total and Individually

Variable	Hospital A (n=20)	Hospital B (n=19)	Hospital C (n=21)	Total (n=60)	
Age (years)	32.8	34.8	33.5	Mean 33.7	S.D. 8.44
Years since graduation	9.7	10.3	10.1	Mean 10.03	S.D. 9.16
Length of time in present hospital (years)	4.5	4.7	3.2	Mean 4.09	S.D. 5.45
Number of hospitals employed in since graduation	3.7	4.4	2.0	Mean 3.4	

D. Research Settings

        Following are descriptions of the individual
hospital's cardio-pulmonary resuscitation protocols and
orientation programs. The information was obtained from
three sources: (a) the nursing administration; (b) the
nursing education departments; and (c) from written hospital
policies. Table 2 summarizes these descriptions.

        Hospital A: Hospital A is a large (>350 beds)
community hospital in the San Francisco Bay Area.

        The orientation program at this hospital allots
approximately 3 hours, 15 minutes to the subject of cardio-
pulmonary resuscitation. In this time frame, 45 minutes
is spent in lecture on the hospital's resuscitation protocol
and the techniques of CPR. A copy of the protocol is
distributed. The remaining two and one-half hours is
spent on the demonstration and actual practice of CPR
techniques. The general care staff are annually recertified
by the hospital in CPR and are not required to have a
Basic Cardiac Life Support (BCLS) certificate from the
American Heart Association or the Red Cross. Only the
respiratory therapy department and nurses from the ICU,
CCU, and ER are required to have BCLS and ACLS certifications
from the American Heart Association. The hospital is
also developing a program for the implementation of mock
resuscitation drills.

Table 2

Descriptions of the Orientation Programs and

Resuscitation Protocols of Hospitals A, B and C

	Length of Time on Resuscitation in Orientation	Content of Orientation Dealing with Resuscitation	Resuscitation Protocol
Hospital A	3 hr. 15 min.	Distribution & discussion of resuscitation protocol; CPR lecture & demonstration	Team concept; 10 or more participants on team
Hospital B	10 hours	Distribution & discussion of resuscitation protocol; CPR lecture & demonstration; AHA BCLS certification; mock resuscitation drill; review of crash cart	Team concept; 5 or more participants on team
Hospital C	1 hour	Distribution & discussion of resuscitation protocol; brief review of crash cart	Team concept; 12 or more participants on team

The resuscitation protocol of Hospital A includes a team concept. The personnel who respond to the Code Blue summons include: any physicians, one CCU nurse,

one ICU nurse, three respiratory therapists, two staff
nurses from the victim's unit, one administrative nurse,
and one EKG technician. A total of ten or more people
arrive at the scene as the Code team and these are not
necessarily the same individuals each time. There is
no pre-assigned team for each shift that remains constant
for each Code. It is therefore possible that some of
the Code team members have never worked with the other
members. There is also no consistency in the experience
or training of the members in resuscitation. One team
member may have extensive experience with Codes whereas
another may have only participated in one or two.

Each nursing unit has a completely equipped
crash cart that is brought to the scene of the cardiac
arrest by a staff person from that unit.

The role of the general care staff nurse in
a resuscitation is to recognize the arrest, call for help,
i.e., the Code team, and maintain CPR until the team arrives.
Once the team has taken over,the general staff nurse's
role is informing the team leader of the patient's condition
and diagnosis pre-arrest and to chart the events of the
resuscitation.

Hospital B: Hospital B is a small (136 beds)
private hospital in the San Francisco East Bay.

The orientation program at this hospital allocates

approximately 10 hours to the subject of resuscitation.
During that time, the hospital's resuscitation protocol
is discussed and the orientees receive a copy of it. Lectures
and demonstrations on CPR techniques are given and, after
practicing the techniques, the orientees are certified
according to American Heart Association BCLS standards.
Hospital staff are required to renew that certification
yearly. The orientation program also includes an inspection
of the emergency crash carts and a mock resucitation drill.

The resuscitation protocol of Hospital B includes
a team concept. Personnel responding to the cardiac arrest
include: the Emergency Room physician (on-call 24 hours),
one or two respiratory therapists, the patient's nurse
and the unit charge nurse, and one nursing supervisor.
As in Hospital A, the five or more individuals arriving
as the Code team are not necessarily the same people at
each Code, i.e., although the titles of the participants
remain the same, the actual individuals are different.
There is also no consistent training or experience among
the various team members.

The resuscitation role of the general care staff
nurse at Hospital B is to initiate and maintain CPR until
the Code team arrives and then perform tasks as assigned
by the charge nurse. These duties may vary from preparation
and administration of medications to recording the events

of the Code. Both the patient's nurse and the charge nurse inform the Code team of the patient's pre-arrest diagnosis and status.

Hospital C: Hospital C is a mid-sized (264 beds) community hospital in the San Francisco Bay area.

The orientation program at this hospital assigns one hour to discussion of cardio-pulmonary resuscitation. In that period of time, the hospital's Code protocol is distributed by the nursing education staff and reviewed with the orientees. There is also a demonstration of the emergency crash cart. The orientees are informed that a more detailed review of the crash cart will be performed by the staff on their assigned nursing units. Hospital C does not require annual CPR re-certification of their general nursing staff, although they encourage it. Orderlies and Critical Care nursing staff are required to have annual CPR certification through either the Red Cross or the American Heart Association.

The resuscitation protocol at Hospital C includes a team concept. The staff responding to the Code include: one CCU nurse, two respiratory therapists, two orderlies with the crash cart, an EKG technician, the Emergency Department physician, the attending physician (if available), an anesthesiologist, two staff nurses from the patient's unit, nursing supervisory personnel, and a pharmacist.

The twelve or more personnel arriving as the Code team
are not the same personnel at each Code. They may never
have worked with the other team members, and their training
and experience with resuscitation may vary widely.

The general care staff nurse is responsible
for the initiation and maintenance of CPR until the Code
team arrives. Duties then are primarily those of recording
the events of the resuscitation.

In summary, the orientation programs of the
three hospitals differ on the length of time that is spent
on cardio-pulmonary resuscitation and the depth with which
it is covered. The requirements for CPR certification
of the general care staff nurses also varies among the
three institutions. The Code protocols, on the other
hand, are quite similar. All three protocols include
a team concept, even though the number of personnel and
the composition of the teams are different. There is
also no consistency in the training or the experience
of any of the institutions' Code team members. The personnel
assigned to the Code teams are rarely the same group of
people familiar with working together as a team.

E. Procedure

Three San Francisco Bay Area hospitals were

used in an attempt to represent differing hospital sizes
and protocols. The designated hospitals were: Hospital A,
a large (>350 beds) community hospital; Hospital B, a
small (136 beds) private hospital; and Hospital C, a mid-
sized (264 beds) community hospital. A further description
of the three hospitals is provided in Section D, Research
Settings.

Access to the subjects was obtained through
the nursing administration or education department of
each hospital under the direction of the Director of Nursing
(Appendix A). With their cooperation, the hospitals'
personnel lists were obtained and were stratified to ensure
that only general care staff registered nurses were selected.
The desired sample size from each institution was 20 R.N.'s,
but 25 individuals were randomly selected to allow for
vacations, sick days, and refusals. A Table of Random
Numbers was used for the random selection of subjects.
Confidentiality of the nurses was maintained because their
names were never associated with the questionnaires they
completed. The potential risk of loss of privacy was
fully explained to each subject in the consent form which
they were asked to read and sign before completing the
questionnaire (Appendix B). This consent form was kept
separate from their questionnaires.

Each subject was individually approached while

at work by the researcher. The purpose of the study was
briefly explained and the subject was invited to participate.
Only two subjects refused to participate. All subjects
were asked to read and sign the consent form before completing
the questionnaire. They were instructed to respond to
the questionnaire at their leisure and the completed forms
were collected by the researcher within 1-2 days of administration.

F. Instruments

1. Independent variables.

The independent variables for the study included:
(a) nurses' knowledge base in cardio-pulmonary resuscitation;
(b) work experience with cardio-pulmonary resuscitation;
and (c) the nurses' perceptions of their hospitals' resuscitation
protocols. This information was obtained by a survey-
questionnaire consisting of 25 fixed-format questions
(Appendix C).

2. Dependent variable.

The dependent variable, nurses' perceived anxiety
in cardio-pulmonary arrest situations, was elicited by
the Concept-specific Anxiety Scale (CAS) (Cole, Oetting,
& Sharp, 1969). The CAS measures the anxiety component
which may be present as part of any specific concept or
situation. Unlike more global anxiety measures, the CAS
provides a means of determining the extent to which a
specific situation, such as a cardio-pulmonary resuscitation,

may be anxiety provoking.

The CAS consists of a set of bipolar adjective pairs cast in a seven-interval Osgood semantic differential format (Appendix D). The subjects were presented with an instructional form that explained the correct way to complete the CAS (Appendix E). They were then presented with the anxiety scale itself with the situation, "How I feel when I observe or participate in a cardio-pulmonary resuscitation (a Code Blue)", typed at the top of the scale. They then marked their responses to the situation along the interval scale.

Each response space along the seven-interval scale had a pre-designated value from one to seven. Based on the particular response space selected by the subject, the values were totalled and divided by the number of responses. Each subject, therefore, received one anxiety score. These scores can be interpreted according to the following guidelines:

Score on CAS	Interpretation
9-17	Very low anxiety; situation highly reinforcing; high liking
18-26	Low anxiety; comfortable in situation
27-35	Mild anxiety; not completely comfortable in situation
36-45	Moderate anxiety
46-54	High anxiety; very uncomfortable in situation
55-63	Very high anxiety; severe problems with situation; possible phobia

The preceeding guidelines were taken from Oetting, E.
and Cole, C. <u>Manual for the Concept-Specific
Anxiety Scales</u>. Colorado State University, 1980.

The CAS has been shown to be a reliable measure
of anxiety in a number of different situations. The interval
consistency of the instrument is supported by Chronbach
alpha estimates greater than .90 for most situations.
Test-retest reliabilities above .70 support the stability
of the instrument in measuring anxiety over time (Oetting &
Cole, 1980).

Specific situations investigated with the CAS
are listed along with their Chronbach alpha measure of
internal consistency: insects (.95), smokers (.95), being
alone (.95), physical pain or injury (.91), and people
who are angry or hostile (.92) (Oetting & Cole, 1980).
Test-taking anxiety has been studied extensively in a
number of studies using the CAS. The particular test-
taking situations and their Chronbach alpha estimates
are summarized in the CAS test manual (Oetting & Cole,
1980) as: taking an essay exam (.92), taking a pop quiz
(.92), taking a mathematics test (.96), taking an oral
exam (.95), and taking a time-limited test (.93). The
consistent split-half estimates by the Chronbach alpha
above .90 for a variety of different situations supports
the reliability of the CAS as a measure of anxiety.

Test-retest reliabilities for the CAS and various
situations are approximately .70. Subjects for the test-

retest reliabilities for test-taking anxieties were male

and female students (n=150) in several introductory psychology

courses at Colorado State University. Before an examination

was distributed, the students were asked to complete a

CAS describing the particular test-taking situation they

were facing, i.e., a multiple choice exam, a pop quiz,

a math exam, and an oral exam. Tests were taken from

the semester beginning to the end, 10 weeks later. Test-

retest reliabilities were as follows: taking a multiple

choice exam (.70); taking a pop quiz (.72); taking a mathematics

exam (.77); and taking an oral exam (.73). The reliability

coefficients demonstrate that the anxiety regarding these

situations is relatively stable over time. Some variation

in anxiety does occur, however, in these situations and

others, and the lower test-retest reliabilities represents

some of this normal variation in anxieties over time

(Oetting & Cole, 1980).

Numerous studies support the validity of the

CAS as a measure of the anxiety associated with different

situations. The construct validity of the instrument has

been repeatedly documented in studies that demonstrate the

ability of the CAS to discriminate among different anxiety-

producing situations. For example, Cole, Oetting and Sharp

(1969) assessed anxiety related to three different situations

in a group of 28 psychology students. The high anxiety

situation was "handling a spider", the low was "playing

with a puppy". A neutral situation was also employed,
"thinking about gogey". The term gogey was selected from
Nobel's (1952) list of low association words. The data
revealed that the CAS did discriminate among the three
situations. "Handling a spider" had a mean score of 43
on the present form of the CAS, the only situation within
the moderate anxiety range. The situations "playing with
a puppy" and "thinking about gogey" had CAS scores of
20 and 32, respectively. These differences were found
to be significant ($p<.01$). The results support the construct
validity of the CAS in discriminating among the anxieties
provoked by differing situations. Other studies support
the construct validity of the CAS and these have been discussed
in Chapter II, B, Theoretical Framework (Birney, 1970;
Cole & Oetting, 1968, 1969; Cole, Oetting & Dinges, 1973;
Dinges & Oetting, 1972).

The concurrent validity of the CAS has also
been supported by various studies.

An interesting study by Arbes and Hubbell (1973)
assessed the impact of a structured communications skills
workshop on self-referred clients who expressed problems
in feeling comfortable in their relationships with others.
There were a total of 30 subjects, 16 males and 14 females.
Fifteen were randomly assigned to 2 experimental groups
that participated in the workshop and 15 to a control

group that was placed on a waiting list for the next workshop. All subjects were given a pre-test consisting of three instruments, the CAS, the Fundamental Interpersonal Relationship Orientation-Behavioral Scale (FIRO-B), and the Interpersonal Relationship Rating Scale (IRRS). The FIRO-B is a measure of a person's characteristic behavior toward others on dimensions of inclusion, control and affection. The IRRS tests outcomes in growth experiences and measures attitudes and/or behaviors in an individual's relationships with others and himself. Following the pre-test, the experimental groups participated for seven weeks in a communcations workshop that emphasized communications skills, assertiveness, and theories of interpersonal relations. The control group received no treatment. After the seven weeks, all subjects were again administered the CAS, the FIRO-B, and the IRRS. Pre- and post-test results indicated a significant decrease in anxiety for both the experimental groups with little change in the control group ($p < .001$). The researchers concluded that the workshop was instrumental in decreasing the anxiety experienced by the subjects in their interpersonal relationships. This was supported by the increased scores on both the FIRO-B and the IRRS. The significantly improved scores on the FIRO-B ($p < .01$) demonstrated an increased recognition of the need to establish and maintain satisfactory relationships with others. Likewise,

the improved IRRS scores indicated that the subjects perceived themselves as better communicators, more trusting and open ($p<.001$). The CAS was a sensitive measure of the changes in anxiety that can occur with treatment of a problem. The decreased CAS scores for the experimental group corresponded well with the improved scores on the two interpersonal relationship scales, and validates the use of the CAS as a measure of anxiety in interpersonal relationships. The results of this study are supported in several other investigations using the CAS (Brasington, 1975; Hall, 1970; Hall & Hinkle, 1972; Lutker, 1975; Nutter, 1975; Pendleton, 1977).

In summary, the CAS has been demonstrated to be a reliable and valid indicator of a wide range of concept-specific anxieties. Oetting and Cole (1980) suggest that since the reliability and validity of the CAS in assessing a wide variety of concept-specific anxieties has been consistent, the instrument can be used with reasonable confidence as a measure of anxiety with situations not yet tested. The anxiety associated with cardio-pulmonary resuscitation had not been tested using the CAS but it was anticipated that measurement of this situation-specific anxiety would be as reliable and valid as other CAS measures of anxiety.

Chapter IV

Results

A. Data Analysis

The cross-sectional questionnaire consisted
of 25 questions eliciting interval, nominal and ordinal
data. The scores on the CAS were treated as interval
data. Pearson r correlations were used to compare the
CAS scores to the ordinal data responses. Two-tailed
T-tests were employed to examine relationships between
interval and two category nominal data responses. One-
way analysis of variance was used to examine interval
and more than two category nominal data responses.

Statistical significance for this investigation
was designated $p<.05$ and is denoted throughout in the
following manner: $p<.05$, $p<.01$, $p<.001$ and NS as appropriate.

- Because the response rate for each question
on the questionnaire and for the CAS varied, the n will
be included for each data set.

Use of numerous statistical tests to analyze
a select data set can result in some statistically significant
responses occurring merely by chance. This may have occurred
in the course of this data analysis because of the use
of multiple statistical tests.

B. Findings

The research questions and the specific variables

that influence nurses' perceived anxiety in cardio-
pulmonary resuscitation situations are discussed below.

1. General.

The means and standard deviations of the CAS
scores are reported in Table 3. The range of CAS scores
for the total sample was 15-58. The average CAS score
for all three hospitals was 38.6, a score within the moderate
anxiety range of 36-45. Mean CAS scores of 36.5, 36.6
and 42.7 were found for Hospitals A, B and C, respectively.
Although Hospital C had a higher mean anxiety score than
the other institutions, this was not statistically significant.
Analysis of variance (ANOVA) revealed no significant differences
(n=3, $F_{(2)}$=.18, NS) among the individual hospitals' CAS
scores. ANOVA assumes homogeneity of variances and this
was confirmed using the Bartlett-Box F test (p=.75). Based

Table 3

Mean Concept-Specific Anxiety Scores for the

Three Hospitals; Total and Individually

	Hospital A n=19	Hospital B n=19	Hospital C n=19	Total n=57
Mean of CAS scores	mean 36.5 S.D. 10.68	mean 36.6 S.D. 12.68	mean 42.7 S.D. 11.11	mean 38.6 S.D. 11.68

on these findings, subsequent data analysis comparing
the CAS scores to other variables was not separated by
individual hospital.

2. Knowledge base in cardio-pulmonary resuscitation.

The research question addressed in this area
was: Is there a relationship between general care staff
nurses' perceived anxiety in cardio-pulmonary arrest situations
and educational background in CPR or Basic cardiac Life
Support (BCLS) and/or Advanced Cardiac Life Support (ACLS)?

The mean scores for length of time since last
BCLS and ACLS certification are summarized in Table 4.

Table 4

Mean Scores for Length of Time Since Nurses' Last

Basic Cardiac Life Support (CPR) and Advanced

Cardiac Life Support Certification for the Three

Hospitals; Total and Individually

Variable	Hospital A	Hospital B	Hospital C	Total
Time since last CPR certification (mos.)	14.3 (n=19)	9.5 (n=19)	11.2 (n=21)	11.6 (n=59)
Time since last ACLS certification (mos.)	11.75 (n=4)	9.0 (n=2)	18.0 (n=1)	12.9 (n=7)

All of the nurses in the three hospitals had CPR training with the average length of time since last certification being 11.6 months (S.D.=9.49). Only 7 of 60 nurses had ACLS training with the average time since certification being 12.9 months (S.D.=11.86). Of the seven ACLS certified nurses, 4 were from Hospital A, 2 from Hospital B and 1 from Hospital C.

The relationship between CAS scores and background in CPR and ACLS was analyzed using T-tests. All 60 nurses had CPR training, and this variable was not a significant influence on nurses' anxiety scores. However, the 7 nurses who had ACLS training had a mean CAS score of 30 (S.D.=9.4), while those who did not have ACLS had a higher mean anxiety score of 39.8 (S.D.=11.5). These findings were statistically significant (n=57, $t_{(55)}$=-2.15, $\underline{p}$<.05).

The 27 nurses (48.3%) who believed that CPR and/or ACLS training prepared them well for a real resuscitation situation had a mean CAS score of 37.5 (S.D.=12.9) while those 21 (35%) who felt the courses did not prepare them well had a mean CAS score of 38.2 (S.D.=9.8). The difference was not statistically significant (n=46, $t_{(45)}$=-.21, NS). Twelve nurses (16.7%) did not respond to the question.

Pearson r correlations revealed no significant relationship between CAS scores and length of time since

CPR (r=-.012, NS) and/or ACLS (r=-.43, NS) certification.

The second research question relevant to knowledge base was: Is there a relationship between general care staff nurses' perceived anxiety in cardio-pulmonary arrest situations and continuing education classes in resuscitation, other than BCLS/ACLS?

There was no significant difference in CAS scores between the 17 nurses (30%) who had taken continuing education classes in resuscitation other than BCLS/ACLS and the 42 nurses (70%) who had not (n=59, $t_{(57)}$=-.06, NS). Mean CAS scores were 38.5 (S.D.=13.1) and 38.7 (S.D.=11.2), respectively.

The final research question concerning nurses' knowledge base in resuscitation was: Is there a relationship between general care staff nurses' perceived anxiety in cardio-pulmonary arrest situations and their perceptions of the hospitals' orientation programs?

The average length of time the staff nurses perceived that their orientation programs spent on resuscitation is summarized in Table 5. The actual length of time spent is also presented. The nurses from Hospital A perceived 1-3 hours (mean 1.6 hours) was spent on resuscitation in their hospital orientation. Actual time spent was 3.15 hours. Hospital B nurses responded that 1-8 hours (mean 5 hours) was allocated to resuscitation while the

Table 5

Mean Scores for Perception of Length of Time

(in Hours) Hospital Orientation Program Dealt

With Resuscitation Compared to Actual Time Spent

Variable	Hospital A	Hospital B	Hospital C	Total
Perception of length of time spent in orientation on cardio-pulmonary resuscitation	1.6 (range:1-3)	5.0 (range:1-8)	1.4 (range:0-4)	2.6
Actual time spent	3.15	10.0	1.0	

actual time was 10 hours. Nurses from Hospital C said

that 0-4 hours (mean 1.4 hours) was spent on resuscitation

and the actual time was 1 hour. Pearson r correlations

between CAS scores and this variable indicated that nurses

who perceived a longer period of time to be spent dealing

with resuscitation had significantly lower anxiety scores

than the nurses who perceived a shorter period of time

spent ($r=-.32$, $p<.05$).

Less than half of the nurses (23 of 54, 42.6%)

believed that the amount of information on resuscitation

given in orientation was adequate to aid them in a Code

situation. The majority, 31 of 54 (57.4%), indicated
the amount of information was inadequate. Six did not respond.

T-tests were performed to determine a relationship
between nurses' anxiety and their perception of the resuscitation
information they received in orientation. While the group
who believed the amount of information given was adequate
had a lower mean anxiety score (M=35.5, S.D.=10.6) compared
to 39.5 (S.D.=12.2) for the other group, these findings
were not statistically significant $(t_{(49)}=-1.20, NS)$.

An overwhelming majority of nurses, 49 of 57
(86%), felt that more classes on cardio-pulmonary resuscitation,
other than CPR, were needed for them to feel more comfortable
participating in Codes. Only 3 of 57 (5.3%) said they
would not feel comfortable even with more classes, and
5 of 57 (8.8%) said they were already comfortable with
Codes. Three did not respond to the question. The mean
CAS score of those who felt more resuscitation classes
were needed was 39.2 (S.D.=11.9). The mean CAS score
of the two nurses that felt the classes would not make
them feel more comfortable was 33.5 (S.D.=7.8). Although
the nurses who felt they needed more classes to feel comfortable
with Codes had a higher mean CAS score, there was not
a significant difference between the two groups
$(t_{(48)}=.67, NS)$.

3. Work experience with cardio-pulmonary
resuscitation.

Two research questions addressed this area.

(1) Is there a relationship between general care staff nurses' perceived anxiety in cardio-pulmonary arrest situations and the number of resuscitations they have witnessed but not participated in?

(2) Is there a relationship between general care staff nurses' perceived anxiety and the number of resuscitations they have actively participated in?

The mean scores of Codes witnessed but not participated in, and those actually participated in are reported in Table 6. The mean number of resuscitations witnessed was the same as the mean number participated in (8.65). Pearson r correlations revealed a significant relationship between CAS scores and both the number of resuscitations witnessed ($r=-.28$, $p<.05$) and participated in ($r=-.28$, $p<.05$), i.e., the more experiences, the lower the anxiety score ($p<.05$).

A third research question concerning nurses' work experience with resuscitation was: Is there a relationship between general care staff nurses' perceived anxiety and their perceptions of the resuscitations they have witnessed or participated in?

A greater number of nurses, 29 of 60 (48.3%),

Table 6

Mean Scores for Number of Codes Witnessed and

Participated in by Nurses For Three Hospitals;

Total and Individually

Variable	Hospital A	Hospital B	Hospital C	Significance on anxiety scores	Total
# of codes witnessed	5.1	10.9	7.6	$p<.05$	8.65
# of codes participated in	6.8	11.3	6.8	$p<.05$	8.65

indicated they were well-prepared to participate in the

resuscitations compared to 22 of 60 (36.7%) who felt unprepared.

Those who had never participated in a resuscitation, 8

of 60 (15%), were unable to respond to the question. Breakdown

of these findings by hospital is summarized in Table 7.

Those who felt well-prepared to participate in resuscitation

situations had significantly lower anxiety scores (n=49,

$t_{(47)}$=-2.73, $p<.01$) of 33.4, 33.3 and 32.3 for Hospitals

A, B and C, respectively. Those who felt ill-prepared

had mean CAS scores of 39.1, 39.0 and 43.7, for Hospitals

A, B and C, respectively. The nurses who had never participated

in a resuscitation were clearly the most anxious with

the mean score for all three hospitals falling into the

Table 7

Relationship Between Nurses' Comfort in

Participating in Resuscitation and Concept-

specific Anxiety Scores for the Three

Hospitals; Total and Individually

	Nurses' Responses to Comfort in Resuscitation	N	Mean CAS Score
Hospital A (n=19)	Yes	11	33.4
	No	7	39.1
	Never participated	1	53.0
Hospital B (n=19)	Yes	12	33.3
	No	5	39.0
	Never Participated	2	50.5
Hospital C (n=19)	Yes	4	32.3
	No	10	43.7
	Never participated	5	49.0

high anxiety range of the CAS, 46-54. The mean CAS score

for Hospital A nurses who never participated in a Code

was 53.0, for Hospital B, 50.5 and for Hospital C, 49.0.

T-tests were also performed to compare the number

of Codes nurses participated in with their perception

of preparedness to participate. The results were significant

(n=49, $t_{(47)}=3.13$, $p<.01$). Those nurses who felt well-

prepared had participated in more resuscitations.

Results were similar in nurses' responses to

how they would regard participation in future Codes based

on their previous experiences. The nurses who felt they would be comfortable in future Codes based on their past experiences had significantly lower CAS scores (n=56, $t_{(54)}$=-3.02, p<.01) than those who felt they would not be comfortable in future Codes. The mean CAS score for the former group was 35.2 compared to 43.8 for the latter group.

T-tests were also done to compare the number of Codes participated in with the nurses' feelings of comfort in participating in future Codes. The results were highly significant (n=56, $t_{(54)}$=3.62, p=.001). The nurses who said they would feel comfortable in future Codes had participated in more Codes than those who said they would be uncomfortable in future resuscitations. The mean number of Codes participated in was 13.8 (S.D.=10.5) for the group who felt they would be comfortable in future Codes and 2.5 (S.D.=3.6) for the group who felt they would not be comfortable.

In this study the actual participation in resuscitations, not merely the observation, reduced anxiety. T-tests performed to compare the number of Codes witnessed with feelings of preparedness were non-significant (n=46, $t_{(44)}$=1.35, NS). Likewise, comparisons of the number of Codes witnessed with future comfort in resuscitations was not significant (n=53, $t_{(51)}$=1.50, NS).

The final research question dealing with work experience with resuscitation was: Is there a relationship between general care staff nurses' perceived anxiety in cardio-pulmonary resuscitation and work experience in an ICU?

Another response that had high significance dealt with nurses' work experience in ICU. Only 26 of 60 (44.1%) respondents had ICU experience compared to 33 of 60 (55.9%) who did not have ICU experience. One subject did not respond. The group with ICU experience had a significantly lower CAS mean score of 32.7 (S.D.=10.1) than the non-ICU experience group CAS score of 42.9 (S.D.=10.8) (n=56, $t_{(54)}$=-3.59, p=.001).

T-tests also indicated that nurses with ICU experience had participated in significantly more Codes, 14.4, than those without ICU experience, 3.8 (n=57, $t_{(55)}$=3.34, p=.001). Analysis of variance was used to determine whether the ICU experience or the greater participation in Codes was the significant factor in decreasing anxiety. ICU experience had a more significant impact on anxiety scores than the number of Codes participated in by the staff nurses ($F_{(2)}$=6.1, p<.01; $F_{(1)}$=6.4, p<.01).

All seven nurses who received ACLS training also had ICU experience. Analysis of variance indicated

that the ICU experience not the ACLS training was the

most significant factor in decreasing anxiety ($F_{(2)}$=6.7,

p<.01; $F_{(1)}$=8.5, p<.01). There was also no significant

difference in CAS scores between the ICU experienced

nurses with ACLS training and those without ACLS training

(n=25, $t_{(23)}$=-.83, NS).

4. Perceptions of institutions code protocol.

The research question addressed in this area

was: Is there a relationship between general care staff

nurses' perceived anxiety in cardio-pulmonary arrest

situations and their perceptions of their institutions'

resuscitation protocols?

Nurses were asked to select the description

of the Code policy or protocol they felt best described

their hospital's protocol. The choices were the following:

(1) Code team - pre-designated, pre-assigned

team of experienced personnel well-trained

in cardio-pulmonary resuscitation;

(2) Team - pre-assigned personnel who may

or may not be experienced or trained in cardio-

pulmonary resuscitation;

(3) Anyone can respond; and

(4) Don't know.

As described previously, all three institutions employ

the team concept of pre-assigned personnel who have no
consistent training or experience in resuscitation.

The majority of nurses, 53 of 60 (88.3%), were
not familiar with their hospitals' resuscitation protocols.
More than half of this group, 36 of 60 (61%) selected
the Code team option while 17 of 60 (28.8%) felt that
anyone could respond to a Code. Only 6 of 60 (10%) chose
the correct option of the team concept. Table 8 summarizes
the nurses' responses by individual hospital. At Hospitals
A and C, the majority of nurses perceived that their
protocol included some sort of team effort but at Hospital
B, 61.1% of the nurses believed that anyone could respond
to the resuscitations.

Table 8

Nurses' Perceptions of Hospital Resuscitation Protocol

By Hospital

	Code Team	Team Concept	Anyone can respond
Hospital A	14/20, 70%	3/20, 15%	3/20, 15%
Hospital B	4/18, 22.2%	3/18, 16.7%	11/18, 61.1%
Hospital C	18/21, 85.7%	0/21, 0%	3/21, 14.3%

T-tests performed to determine a relationship between nurses' anxiety with resuscitation and their perceptions of their hospitals' protocols were not significant. There was no difference in anxiety scores between the nurses who correctly perceived their protocol to include a team concept and those who did not.

Another question concerning nurses' perceptions of their hospitals' resuscitation protocols was: Is there a relationship between general care staff nurses' perceived anxiety in cardio-pulmonary arrest situations and their preference for resuscitation protocol?

A majority of nurses, 38 of 52 (73.1%) indicated they were comfortable with the way Codes were managed in their hospitals. Only 14 of 52 (26.9%) were uncomfortable. Eight subjects did not respond. T-tests revealed no significant difference in anxiety scores between nurses who felt comfortable with their hospitals' protocols and those who did not feel comfortable ($n=50$, $t_{(48)}=.37$, NS).

When asked if a different type of Code protocol would make them feel more comfortable, a majority of nurses, 21 of 58 (36.2%) answered yes. This compared to 17 of 58 (29.3%) who said no and 20 of 58 (34.5%) who said they had no opinion. Two nurses did not respond. Table 9 summarizes the nurses' responses to this variable by individual hospital. For Hospital A, 15 of 20 (75%)

Table 9

Nurses' Perceptions as to Whether a Change in Hospital Resuscitation Protocol Would Make Them More Comfortable With Codes

	Yes	No	No Opinion
Hospital A	5/20, 25%	6/20, 30%	9/20, 45%
Hospital B	12/18, 66.7%	2/18, 11.1%	4/18, 22.2%
Hospital C	4/20, 20%	9/20, 45%	7/20, 35%

indicated they did not feel a change in protocol would
make them more comfortable in resuscitations or they
had no opinion on the subject. Similarly, at Hospital
C, 16 of 20 (80%) of nurses either said they did not
feel a change in protocol would make them more comfortable
or they had no opinion. But at Hospital B, the majority
of nurses, 12 of 18 (66.7%) felt that a change in protocol
would make them feel more comfortable with resuscitations.
Althought T-tests indicated that the nurses who felt
a change in protocol would not make them more comfortable
had a higher mean CAS score (M=38.8, S.D.=11.6) than
the nurses who felt a change would make them more comfortable

(M=34.0, S.D.=10.4), this difference was not statistically significant (n=37, $t_{(35)}$=-1.31, NS).

The nurses were asked which type of protocol they would prefer to work under and the overwhelming majority, 56 of 59 (94.9%) indicated the Code team of well-trained, experienced personnel. Only 3 of 59 (5.1%) selected the team concept that their hospitals' presently employ. One nurse had no response to the question.

In summary, the findings indicate that nurses' participation in resuscitation and previous ICU experience had the most significant influence on anxiety scores as measured by the CAS. The more Codes the nurses actually participated in, not merely observed, the less anxious they were (p<.01). Nurses with ICU experience were also significantly less anxious (p=.001) than nurses without ICU experience.

CPR training had no significant effect on anxiety scores but the majority of nurses indicated the training helped prepare them for participation in a real resuscitation. The nurses with ACLS training also had previous ICU experience. It was not possible to determine whether ACLS training itself influenced anxiety.

Finally, although the majority of nurses (88.3%) were unfamiliar with their hospitals' resuscitation protocols,

this was not a significant influence on their anxiety

scores. Over 94% of nurses also indicated they preferred

a resuscitation protocol that included a Code team concept

different than the one employed by their hospitals.

C. Limitation of Findings

A possible limitation of this study is the

numerous statistical tests employed in the data analysis.

As discussed previously, because of the number of tests

performed, some of the results may be statistically significant

by chance.

An assumption made through the course of this

study is that the nurses truthfully and accurately completed

both the questionnaire and the CAS. Since both instruments

are self-reports, the possibility exists that some subjects

were not truthful or accurate in their responses.

A potentially informative question was overlooked

in the assembly of the cross-sectional questionnaire.

An inquiry might have been made as to the length of time

elapsed since the last resuscitation nurses either participated

in or witnessed. Oetting and Cole (1980, p. 23) state, "Depending

on the concept, concept-specific anxieties are reasonably

stable over time. But there can be some variations over

time as well. A person under a great deal of stress

at a particular time might indicate somewhat higher anxieties

on the CAS.... Later, at a time when things are going well and the general stress has been relieved, they might show somewhat lower concept-specific anxieties. The lower test-retest reliabilities presented before represent some of this normal variation in perceived anxieties over time." It is possible that some nurses' responses to the situation of cardio-pulmonary resuscitation were higher because of the period of time since their last resuscitation. However, it is not possible to determine this from the data that was collected. It is also possible that since the nurses were approached at work for this study, their anxiety levels may have been slightly higher due to work stress. But since all the nurses were approached on the job, this threat to validity was minimized.

One area that did alter the data set was the inclusion of "No Opinion" as a choice of response to particular questions. These choices depleted valuable information from the final data pool. These types of responses would be omitted from any revision of the questionnaire.

Chapter V

Discussion

A. Significance of Findings

This investigation into general care staff nurses' perceived anxiety in cardio-pulmonary arrest situations has demonstrated that there are specific variables that influence nurses' anxiety regarding resuscitation. In addition, the findings support Spielberger's anxiety theory that the degree of threat an individual perceives in a specific stressor influences the anxiety response to that stressor. The study also supports the reliability and validity of the Concept-specific Anxiety Scale (CAS) as a measure of anxiety in another specific situation, cardio-pulmonary resuscitation. The relationships found between knowledge base, experience and perception of hospital protocol, and anxiety during a cardio-pulmonary resuscitation are discussed below.

1. Knowledge base in cardio-pulmonary resuscitation.

All 60 nurses in the study had previous training in CPR techniques (BCLS). In addition, most nurses (48.3%) felt that this CPR training prepared them well for a real resuscitation. However, the anxiety scores of the nurses who felt well-prepared by their CPR training were not significantly different from the CAS scores of

the nurses who did not feel CPR training prepared them well. These findings may be of interest to the two hospitals that do not require annual CPR recertification as a condition of employment. Even though the actual training in CPR techniques was not a significant factor in decreasing anxiety, the majority of nurses who had the training felt that it prepared them well for a real resuscitation situation.

Participation in continuing education or inservice classes, other than CPR and ACLS, that dealt with cardio-pulmonary resuscitation was also not a significant influence on anxiety. It is interesting that although 86% of the nurses felt that more classes, other than CPR, would help them feel more comfortable in Codes, only 30% had actually taken any continuing education or inservice classes on resuscitation or related topics.

The only aspect of educational preparation that had a significant effect on nurses' anxiety scores was ACLS training. The seven nurses who had taken ACLS courses had significantly lower anxiety scores than the nurses who did not have ACLS training ($p < .05$). This finding is of questionable value, however, because the seven ACLS-trained nurses also had previous ICU experience. Testing by ANOVA revealed that ICU experience was a more significant factor in decreasing anxiety scores than ACLS training ($p < .05$). It is not possible to conclude from this data

set whether ACLS training alone was of significant value in alleviating nurses' anxiety regarding resuscitation.

The above findings are noteworthy considering the learning theories espoused by Peplau and White. Peplau (1952) asserts that acquiring the knowledge required to perform well in a particular situation provides a means of effectively utilizing the anxiety generated in that situation. White (1974) supports this theory and further emphasizes that both too little and too great an amount of information can make effective action in a situation difficult. From this data, it is not possible to determine whether the amount of information the nurses felt they received in basic resuscitation classes was too scant or too great. However, it is clear the nurses did not find basic CPR classes an adequate source of information to allay their anxiety about Code situations. This supports Spielberger's anxiety theory (1979) that the perception of threat inherent in a given situation is dependent on the knowledge and skills the individual possesses to deal with that situation. The CAS clearly revealed that the nurses did not believe they possessed the appropriate amount of knowledge to reduce their anxiety regarding resuscitation situations.

Another aspect of the data indicates a relationship between the nurses' CAS scores and their perceptions of

their hospitals' orientation programs. The nurses who perceived their orientation program to spend a greater length of time dealing with cardio-pulmonary resuscitation had lower anxiety scores ($p < .05$). In general, the nurses from Hospital B felt their orientation spent the most time on resuscitation (mean 5 hours). And actually, Hospital B does spend approximately 10 hours of the orientation program on resuscitation, more time than either of the other two hospitals. Also, Hospital B is the only one of the three institutions that includes certification in CPR techniques reinforced by a mock resuscitation drill. Perhaps being able to apply the knowlege and techniques of CPR immediately in a resuscitation drill enables the nurses to feel less anxious about performing CPR in a true Code.

More than half the nurses (57.4%) surveyed felt the amount of information they received in their orientation on resuscitation was inadequate to aid them in a Code situation. Interestingly, the majority of nurses from Hospital B (52.9%), with the longest and most in-depth orientation on resuscitation, felt the amount of information received was adequate. Fifty percent of Hospital A's nurses felt the information on resuscitation was adequate while half felt it was inadequate. However, at Hospital C, with the shortest and least in-depth coverage of resuscitation,

more than 73% of nurses felt the amount of information
they received was inadequate to aid them in a Code situation.
Although no significant relationship was demonstrated
between anxiety scores on the CAS and the perceived adequacy
of orientation information, it is clear that nurses from
Hospital C were not satisfied with the coverage of resuscitation
in their orientation program. These findings again support
the learning theories of Peplau (1952) and White (1974).
The nurses who indicated they received an adequate amount
of information on resuscitation in their orientation programs
perceived that information as aiding them in a Code situation.
Those nurses who felt their orientation programs did not
provide an adequate amount of information on resuscitation
were not able to use that knowledge to assist them in
a Code.

    2. Work experience in cardio-pulmonary resuscitation.

      Work experience with resuscitation had a significant
influence on nurses' anxiety scores. The nurses who had
witnessed and/or participated in a greater number of Codes
than their counterparts had significantly lower CAS scores
($p < .05$). Those nurses with no experience with resuscitation
were clearly more anxious about participation in a Code
than those with experience. Their CAS scores were in
the high anxiety range, 46-54. Experience with resuscitation,
then, seems to have a positive influence on reducing nurses'

anxiety regarding resuscitation situations. This finding
parallels Spielberger's (1979) theory that the perception
of threat and therefore the degree of anxiety response,
is reduced by possession of adequate knowledge and skills
to deal with a specific situation. Likewise, Claus and
Bailey (1980) maintain that the degree to which the person's
knowledge, ability and skills match the requirements of
particular aspects of the job determines the amount of
anxiety the individual will experience in that job situation.
The CAS has clearly differentiated the reduced anxiety
responses of nurses with a great deal of experience with
resuscitation from the significantly higher anxiety responses
of those with minimal experience.

The majority of nurses felt well-prepared to
participate in a Code situation. Their anxiety scores
were significantly lower than the CAS scores of the nurses
who said they did not feel well-prepared to participate
in a resuscitation ($p<.01$). In addition, the nurses who
said they felt well-prepared had participated in significantly
more Codes than the nurses who did not feel well-prepared
($p<.01$). Again, actual experience with resuscitation,
as evidenced by the number of Codes participated in, was
a significant factor in reducing nurses' anxiety about
resuscitation and enabling them to feel well-prepared
to participate in resuscitation situations.

Similarly, those nurses who felt their past
experiences with resuscitation enabled them to feel comfortable
about participation in future Codes had significantly
lower anxiety scores than those who did not feel comfortable
about participating in future Codes ($p < .01$). The former
group had also participated in significantly more resuscitations
than the latter group ($p = .001$). Experience with resuscitation
enabled these nurses to feel less anxious about participating
in future Codes.

It appears to be the actual "hands on"
participation in cardio-pulmonary resuscitation and
not mere observation that had the most significant impact
on anxiety. Unlike the number of Codes participated in,
no significant correlation was found between the number
of resuscitations nurses had witnessed and either their
feelings of preparedness to participate or their anxiety
about participation in future Codes. It appears that
the more frequently nurses actually performed the tasks
involved in a resuscitation, the more confident and comfortable
they felt about their role in the Code situation.
Again these findings support the theories that possession
of adequate skills to deal with a situation reduces the
anxiety inherent in that situation. The nurses clearly
indicated they acquired "adequate skills" through active
participation, not passive observation of resuscitation
situations.

Another aspect of work experience that proved
highly significant was the nurses' previous experience
in ICU. Those nurses with ICU experience had significantly
lower anxiety scores than those without ICU experience
($p=.001$). The ICU experienced nurses had also participated
in significantly more Codes ($p=.001$). However, ANOVA
revealed that ICU experience was a greater influence on
anxiety than participation in resuscitations ($p<.05$).
It is feasible that the day to day exposure in the ICU
to frequent emergency situations and to death and dying
fostered an ability to deal with the anxiety inherent
in a cardiac arrest situation in the ICU experienced nurses.
This experience contrasts with the staff nurses with no
background in ICU whose exposure to emergency situations
is only an occasional, highly stressful occurrence.

    3. Perceptions of institutions' resuscitation protocols.

    Although the majority of nurses (88.3%) were
not familiar with their hospitals' resuscitation protocols,
this was not a significant influence on their anxiety
regarding resuscitation. It does indicate, however, serious
confusion on the nurses' part as to what to expect when
they are faced with a Code situation on their units.

    At Hospitals A and C, the majority of nurses
were aware that their Code protocols included a team concept
of some kind although they did not know the specifics

of the team. Although these two hospitals spend less
time on actual CPR performance in their orientation programs,
their coverage of the institutional resuscitation protocols
at least familiarizes the nurses with the idea of a team
response to a Code. At Hospital B, however, more than
half (61.1%) of the nurses felt that anyone could respond
to a Code at their institution. They did not feel their
protocol included a resuscitation team of any type although
the protocol was described to them in their orientation
program. Even though the orientation program at
Hospital B deals extensively with actual performance of
CPR techniques, it is clear the nurses did not grasp
the basics of the hospital's Code protocol from either
their orientation or their experiences with Codes on their
units. These results indicate that all three hospitals
should be more explicit in their descriptions of the institu-
tional resuscitation protocol so their staff will know
what to anticipate when a Code situation arises. The
nurses should feel confident in the knowledge that a team
of personnel with some knowledge and experience in resuscitation
will respond to a Code on their units and provide advanced
resuscitation to the cardiac arrest victim. The CAS clearly
supports Spielberger's theory and the theories of Claus
and Bailey (1980), Peplau (1952) and White (1974) in demonstrat-
ing that the knowledge the nurses indicated they possessed

about their resuscitation protocols was not adequate to reduce their anxiety regarding Code situations.

More than 73% of the nurses surveyed indicated they were comfortable with the way Codes were managed in their hospitals. This is a curious finding considering that the majority of nurses were not familiar with the way Codes were managed in their hospitals. No relationship was determined between their anxiety regarding resuscitation and whether or not they felt comfortable with their hospitals' Code protocol.

When asked if a different type of resuscitation protocol would make them feel more comfortable in a Code, the nurses' responses corresponded with their perceptions of their hospitals' resuscitation protocols. At Hospital A, 75% of the nurses indicated they either did not feel a change in protocol would make them feel more comfortable in a Code or they had no opinion on the subject. Similarly, at Hospital C, 80% said they did not feel a change would make them feel more comfortable or they had no opinion. As discussed previously, the nurses from these two hospitals were aware that their protocols included some type of team concept. At Hospital B, however, where the majority of nurses felt anyone could respond to a resuscitation, more than 66% of the nurses felt a change in resuscitation protocol would make them more comfortable with Codes.

Although there was no significant relationship between anxiety scores and comfort with hospital protocol, the nurses from Hospital B were clearly confused as to their hospital's Code policy and were uncomfortable with their perceptions of it. Although the nurses from Hospitals A and C were more aware of their protocols and felt fairly comfortable with them, they were also confused as to the specifics of the resuscitation team.

An overwhelming majority of nurses from all three hospitals (94.9%) indicated they preferred a Code team of the same limited personnel with training and experience in resuscitation to the type of protocols they perceive their institutions employing. Only 5.1% indicated they preferred the general team of personnel with no consistent training or experience presently in use at all three hospitals. It appears the nurses are knowledgeable about the choices of resuscitation teams and they want a consistent response to the Codes on their units. They strongly prefer the Code team that assures them of consistency of the same group of highly trained and experienced personnel at every Code situation.

In conclusion, experience in resuscitation was the most significant factor in reducing nurses' anxiety responses to Code situations. This contrasts with the lack of influence that basic CPR training and perception

of both the hospitals' orientation programs and Code protocols
had on anxiety scores.

The CAS clearly differentiated among the different
variables and their influence on nurses' anxiety responses
in resuscitation situations. In addition, the nurses'
hospital means for the situation "How I feel when I observe
or participate in a cardio-pulmonary resuscitation" are
comparable to the group means for other concept-situations
in which the CAS was used to measure anxiety. For example,
the CAS means for Hospitals A, B and C were 36.5, 36.6
and 42.7, respectively, all within the moderate anxiety
range of the CAS. Also in the moderate range for anxiety
was the situation "handling a spider" (mean 43) used in
a study by Cole, Oetting and Sharp (1969). These scores
indicate some anxiety and general discomfort in both situations
but not excessive anxiety. These moderate-range scores
compare with the low-anxiety situation "playing with a
puppy" (mean 20) (Cole, Oetting & Sharp, 1969), a situation
in which the respondents were very comfortable and experienced
no anxiety at all. In contrast, the mean CAS scores for
subjects asked how they felt about "snakes" was 47, in
the high anxiety range. These subjects were clearly very
anxious and highly uncomfortable with the situation. The
validity and reliability of the CAS as a measure of anxiety
in a variety of situations can be supported by this study.

Spielberger's anxiety theory (1979) provided a sound framework for this investigation. His theory as well as the anxiety-learning theories of others (Claus and Bailey, 1980; Peplau, 1952; White, 1974) provided the theoretical basis for many of the conclusions in this investigation.

B. Implications for Nursing and Future Research

The cardio-pulmonary arrest situation is an event that occurs in all health facilities - hospitals, extended care facilities, clinics, physicians' offices - and the nurse is a significant practitioner in all those settings. The results of this study have provided an introduction to the specific variables that influence general care staff nurses' anxiety regarding resuscitations in the hospital setting. However, the findings may be of interest to nurses regardless of setting as well as to other health practitioners involved in cardio-pulmonary resuscitation.

It is anticipated that this exploratory study as well as future research into nurses' anxiety in cardio-pulmonary arrest situations will be significant contributions to the practice and science of nursing. This study identified variables that influence nurses' anxiety regarding resuscitation. Specifically, actual participation in Code situations and ICU experience were the most significant factors in decreasing anxiety responses to resuscitation. Further exploratory studies may disclose other variables that

significantly influence nurses' anxiety in this area of practice.

An interesting extension of this investigation would be an experimental study with a control and experimental group of new hospital employees completing their orientation program. Both groups would receive the Concept-specific Anxiety Scale and the situation would be "How I feel when I observe or participate in a cardio-pulmonary resuscitation (a Code Blue)". The experimental group would be assigned individually to the hospital's Code team over a period of time and would participate as team members with pre-designated functions during any resuscitations that occurred during their assignment. The control group would receive no special treatment and would function as regular new employees. After a designated period of time, the CAS would again be administered to both groups to determine whether the experimental group experienced a decrease in anxiety response secondary to their active participation in resuscitations with the Code team.

Another area that could be explored is the extent to which the hospital orientation programs deal with cardio-pulmonary resuscitation. Pilot programs could be implemented to enhance and emphasize the presentation of both resuscitation techniques and the institution's Code protocol in the orientation program. The purpose would be to increase nurses' familiarity and comfort with the hospital's resuscitation protocol.

The extension of this line of research into
other areas of nursing such as Critical Care as well as
to other health practitioners such as physicians, Emergency
Medical Technicians (EMTs) and paramedics is both feasible
and logical. General care staff nurses are certainly
not the only practitioners who experience anxiety about
cardio-pulmonary arrest situations.

This investigation has also served as an introduction
of the Concept-specific Anxiety Scale to nursing research.
Its reliability and validity has been tested in the
fields of psychology and medicine. This instrument may
prove invaluable in identifying other areas of nursing
practice that are anxiety-provoking to professional nurses.

APPENDIX A

Letter to Director of Nursing Service

Date

Director's Name
Director of Nursing Service
Hospital
City

Dear _____:

     I am a student in the Master's in Nursing Program at the University of California, San Francisco. I am currently undertaking my thesis work and am interested in delineating the specific variables that are instrumental in influencing the general care staff nurse's perceived anxiety in a cardio-pulmonary arrest situation. Those specific variables under consideration are the nurse's knowledge base in and work experience with cardio-pulmonary resuscitation, and the individual's perception of the employing institution's resuscitation protocol.

     In order to gather the necessary data, I would need to obtain a personnel list of only the general, medical-surgical registered nurses in your faculty. From this list, a total of 25 RNs would be randomly selected. Each RN would receive a questionnaire of 25 demographic questions designed to elicit their knowledge base in and work experience with cardio-pulmonary resuscitations, and their perceptions of the hospital resuscitation protocol. They will also receive the Concept-specific Anxiety Scale to determine the level of anxiety they perceive themselves experiencing in a resuscitation situation. Administration of the questionnaire would be only with the nurse's consent, and at no time will the hospital's or the nurse's name be used.

     I plan to collect the data for this study during the summer. Would it be possible to use your facilities for this data collection?

     I will phone you next week to schedule an appointment to discuss this further with you.

     Thank you for your time and consideration.

Respectfully,

Bernadette C. Esposito

APPENDIX B

Consent to Be a Research Subject

A. Bernadette Esposito, R.N., a Master's student in Nursing at the University of California, San Francisco, is conducting an investigation into the feelings experienced by general, medical-surgical nurses in situations necessitating cardio-pulmonary resuscitation. I have been asked to participate in this study and to contribute my personal experiences with cardio-pulmonary arrest situations.

B. If I participate in this study, I will complete a questionnaire that will include 25 general questions about my experience with cardio-pulmonary arrest situations and a scale that will deal with my feelings about these situations. It will take me approximately 15 minutes to complete the entire questionnaire.

C. As a result of answering this questionnaire, there is a possible loss of my privacy. To minimize this, the researcher will not identify my employing hospital by name in the study, and my name will be kept separate from my responses. All names will be coded and locked so my confidentiality will be protected as much as possible under the law.

D. There will be no direct benefit to me from participating in this study. The researcher hopes to learn more about the factors influencing nurses' feelings about cardio-pulmonary arrest situations. A copy of the results of this study will be given to the nursing administration of my hospital that I am free to examine at will.

E. I have talked with Bernadette Esposito, R.N. about this study and she has answered all of my questions. If I have other questions, I may call her at 562-9491.

F. Participation in this research is voluntary and I may refuse to participate or withdraw at any time without jeopardy.

G. I have been offered a copy of this consent form and the Experimental Subject's Bill of Rights to keep.

_____   _____
         Date   Subject's Signature

4/20/81

Questionnaire

INSTRUCTIONS: Please complete this questionnaire by either writing in an answer or checking the appropriate response. Do not put your name on this form. Thank you.

1. Date of birth?   Month_____ Year_____

2. Sex?   Male_____ Female_____

3. How long has it been since you graduated from Nursing School?   _____ years

4. In how many hospitals have you worked since graduating from Nursing School?   _____

5. How long have you worked in this hospital?

6. How many Cardio-Pulmonary Arrest situations (Codes) have you witnessed, but not participated in?   _____

7. How many Cardio-Pulmonary Arrest Resuscitations have you participated in?   _____

8. Did you feel well-prepared to participate in the resuscitation?
   Yes_____ No_____ Never participated_____

9. Based on the experiences you've had with Cardio-Pulmonary Resuscitation, will you feel comfortable participating in future Codes? Yes_____ No_____

10. Would you feel more comfortable participating in Codes if you had more experience with them? Yes_____ No _____

11. Have you had Basic Cardiac Life Support (CPR) training? Yes_____ No_____

12. How long has it been since your last CPR certification?   _____

13. Have you had Advanced Cardiac Life Support (ACLS) Training?
    Yes_____ No_____

14. How long has it been since your last ACLS certification?   _____

15. Did the skills you learned in these classes prepare you well for a real Cardio-pulmonary Resuscitation? Yes_____ No_____

16. Have you taken Inservice or Continuing Education classes in Cardio-Pulmonary Resuscitation, other than CPR and/or ACLS? Yes_____ No_____

17. At your hospital orientation, how many hours were spent on the Hospital's Code policies, and the management of Cardio-pulmonary resuscitations?

_____

18. Did you feel the amount of information given on Cardio-pulmonary Resuscitation during the orientation was adequate enough for you to know what to do in a Code? Yes _____ No _____

19. Would you feel more comfortable participating in a Code if you had more classes, other than CPR, that dealt with Cardio-pulmonary Resuscitation? Yes _____ No _____ I am already comfortable with Codes _____

20. Which of the following best explains you view of the Code policy of your hospital?

_____ a. Code Team: Pre-designated, pre-assigned team of experienced personnel well trained in C-P Resuscitation.
_____ b. Pre-assigned personnel who may or may not be experienced or trained in C-P Resuscitation.
_____ c. Anyone can respond.
_____ d. Don't know.

21. Are you comfortable with the way Codes are managed in your hospital?
· Yes _____ No _____

22. Would a different type of Code protocol make you feel more comfortable in C-P Resuscitation situations? Yes _____ No _____ No opinion _____

23. Which type of Code protocol would you prefer to work under?

_____ a. Code team: Pre-designated, pre-assigned team of experienced personnel well-trained in Cardio-pulmonary Resuscitation
_____ b. Pre-assigned personnel who may or may not be experienced in Cardio-pulmonary Resuscitation.
_____ c. Anyone can respond.
_____ d. No opinion

24. Do you feel that general Medical-Surgical nurses received an adequate amount of education and training in Cardio-pulmonary Resuscitation to enable them to perform well in Codes? Yes _____ No _____ No opinion _____

25. Have you ever worked in an ICU or CCU? Yes _____ No _____

HOW I FEEL WHEN I
OBSERVE OR PARTICIPATE
IN A
CARDIO-PULMONARY RESUSCITATION
(A CODE BLUE)

(Me)

HELPLESS ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ SECURE

(Fingers)

STIFF ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ RELAXED

(Me)

CALM ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ JITTERY

(Today)

LOOSE ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ TIGHT

(Breathing)

CAREFREE ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ CAREFUL

(Me)

FRIGHTENED ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ FEARLESS

(Breathing)

TIGHT ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ LOOSE

(Me)

CAREFREE ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ WORRIED

(Me)

TENSE ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿ : ＿＿RELAXED

Sometimes, because of things that have happened to you, a situation will cause negative or positive feelings.

On the following pages, several different situations are presented above a set of scales that can be used to show how that particular experience makes you feel. For example, feelings about seeing a snake would be presented in the following way:

HOW I FEEL WHEN I SEE A SNAKE

(Me)

TENSE _____ : _____ : _____ : _____ : _____ : _____ : _____ RELAXED

(Hands)

WET _____ : _____ : _____ : _____ : _____ : _____ : _____ DRY

(Breathing)

SHALLOW _____ : _____ : _____ : _____ : _____ : _____ : _____ DEEP

Now, imagine that you see a snake. How would you use the first pair of words to describe yourself (Me)? Are you TENSE or RELAXED? Are you just a little one way or the other — or are you neither? (You would check the middle position, right under the word (Me) in that case.)

Next, how about (Hands)? Are they WET or DRY? Use the spaces to show just how WET or DRY they are.

Next, how about (Breathing)? Use the spaces to show just how SHALLOW or DEEP it is.

This is a difficult test. You have to use your imagination to put yourself into situations, then look at each word and check the space under it that shows how you would respond if you were in that situation.

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