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San Jose State University

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**A study of the role and scope of occupational therapy practice
in neonatal intensive care**

Cicuttin, Sandra Assunta, M.S.

San Jose State University, 1992

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**300 N. Zeeb Rd.
Ann Arbor, MI 48106**

**A STUDY OF THE ROLE AND SCOPE
OF OCCUPATIONAL THERAPY PRACTICE
IN NEONATAL INTENSIVE CARE**

A Thesis

Presented to

**The Faculty of the Department of Occupational Therapy
San Jose State University**

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

By

Sandra Assunta Cicuttin, OTR

May, 1992

APPROVED FOR THE DEPARTMENT OF OCCUPATIONAL THERAPY

Lela A. Llorens, Ph.D., OTR, FAOTA

Janet Rothman Down, MS, OTR

Kathleen M. Roe, Dr.P.H.

APPROVED FOR THE UNIVERSITY

ABSTRACT

A STUDY OF THE ROLE AND SCOPE OF OCCUPATIONAL THERAPY PRACTICE IN NEONATAL INTENSIVE CARE

by Sandra Assunta Cicuttin, OTR

The purpose of this study was twofold: (1) to investigate the perceived role of occupational therapists practicing in Neonatal Intensive Care [NIC] settings as compared to their actual role, and (2) to determine whether obstacles exist to impede the practice of occupational therapy in this specialized setting. Data were collected by mailed questionnaire to a randomly selected group of occupational therapists [OTRs] involved in pediatric practice nationwide. The sample was obtained from the Direct Mail Service of the American Occupational Therapy Association, Inc. The data collected were utilized to formulate parameters to support the development of role and scope of practice and training guidelines considered pertinent to the continued viability of occupational therapy in this specialized area of practice.

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Last, but certainly not least, special thanks to my family for their unending love and support throughout this entire process. To my sister, Corinna Cicuttin Neve: no sister could be luckier than I to have someone who cares so much. You'll finally be getting your sister "back to normal!" My appreciation to Robert J. Morey, for much needed technical as well as emotional support. No master's thesis candidate could be more fortunate with so many on her side.

Dedication

This thesis is lovingly dedicated to the memory of my mother, Nevea Cicuttin (1925-1990), whose legacy of commitment, courage, patience, discipline, and love has inspired me to reach the stars and achieve all of my goals. She will always be the "wind beneath my wings" (Henley & Silbar, 1982).

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CHAPTER 1

INTRODUCTION

Purpose

The purpose of this study was twofold: (1) to investigate the perceived role of occupational therapists who are practicing in Neonatal Intensive Care [NIC] settings as compared to their actual role, and (2) to determine whether obstacles are perceived to exist for the practice of occupational therapy in this pediatric setting.

Statement of the Problem

It has been established in the literature that occupational therapists have a unique contribution to make to neonatology and the NIC infant population (Kozol, 1986; Hyde, 1987). Yet neonatal intervention is a specialized area of clinical practice in occupational therapy which represents a frontier for the pediatric therapist. Although the high-risk infants treated in the NIC setting are believed to benefit from the types of developmental interventions provided by occupational therapists as well as physical therapists, automatic acceptance has not occurred (Campbell, 1986). A background in pediatric practice and post-graduate education provides only some of the qualifications necessary for successful practice in the NIC

setting (Anderson & Auster-Liebhaber, 1984).

Philosophy of practice and treatment approaches currently being developed by occupational therapists working in NIC settings will affect the way that the profession is accepted by those traditionally responsible for the delivery of care to the NIC population in the future (Hyde, 1987). In order to gain professional credibility and acceptance in this setting there is a need to (a) assess occupational therapy's role in the NIC setting as it currently exists, and (b) identify the obstacles to "automatic acceptance" perceived by those professionals currently at the forefront of practice in this setting.

Objectives

The objectives of this study were to provide data with which to:

1. Determine whether discrepancies exist between the current practice of occupational therapy in the Neonatal Intensive Care [NIC] setting and potential practice as perceived by registered occupational therapists working in this area.
2. Begin delineating the role of registered occupational therapists who practice in the Neonatal Intensive Care [NIC] setting.

3. Determine parameters related to the development of scope of practice guidelines for occupational therapy in the Neonatal Intensive Care [NIC] setting.

Questions

The research questions posed in this study were:

1. What is the perception of the role of occupational therapy in Neonatal Intensive Care [NIC] settings as identified by occupational therapists currently involved in NIC program planning and implementation?
2. What specific direct and indirect services are currently provided by occupational therapists working in Neonatal Intensive Care [NIC] settings?
3. What specific direct and indirect services do occupational therapists working in Neonatal Intensive Care [NIC] settings believe they have the skills to offer, in addition to those currently provided?
4. Do any discrepancies exist between those direct and indirect services currently provided by occupational therapists in Neonatal Intensive Care [NIC] settings, and those perceived as potential areas of service delivery?
5. What are the obstacles identified by occupational therapists working in Neonatal Intensive Care [NIC] settings which are perceived to contribute to discrepancies between potential and actual areas of service delivery?

Definitions

Conceptual Definitions

Conceptual definitions for this study were:

Acceptance -- "recognition," "approval"; for purposes of this study, the recognition of occupational therapists by neonatal intensive care professional groups as having an important and vital contribution to make to this specialty area of practice.

Delineating -- the process of establishing, describing, "carving out."

Discrepancies -- differences, disagreements, lack of consistency between two elements.

Neonatal Intensive Care -- highly technical area of neonatal practice dedicated to the provision of specialized care of the premature and high-risk infant (Pettett & Bird, 1985; Korones, 1986).

Obstacles -- elements interfering with action or the development of progress, which must be overcome to allow for the meeting of a goal.

Occupational Therapists -- certified and/or licensed professionals who function in the field of occupational therapy.

Occupational Therapy -- professional discipline dedicated to the enhancement of an individual's functional capacity via adaptation.

Parameters -- factors/qualities that are perceived as constant in a particular process.

Perceptions/perceived -- an awareness that is the result of one's understanding of a problem; to have gained understanding through the process of interpretation of a problem.

Practice/practicing -- the work of or the principles of a profession or occupation.

Role -- the variety of responsibilities incorporated/encompassed into a part engaged in by an individual.

Skills -- abilities gained by practice, knowledge, and clinical experience.

Operational Definitions

Operational definitions for this study consisted of:

Actual areas of service delivery -- those clinical responsibilities of occupational therapists in neonatal intensive care identified by neonatologists/physicians when prescribing occupational therapy intervention, as addressed in questions 17 and 18 of the NIC survey/questionnaire form.

Current practice -- those clinical responsibilities identified by occupational therapists participating in this study as current interventions they are involved with by a "yes" response in question 17, by indicating frequency in question 18, and by personal description in question 19 of the NIC survey/questionnaire form.

Direct service provision -- clinical intervention provided by occupational therapists in neonatal intensive care which involves actual infant-therapist interaction (e.g., positioning, feeding, splinting), as addressed in questions 17 and 18 of the NIC survey/questionnaire form.

Indirect service provision -- clinical intervention provided by occupational therapists in neonatal intensive care which does not involve actual infant-therapist interaction (e.g., consultation, follow-up services), as addressed in questions 17 and 18 of the NIC survey/questionnaire form.

Neonatal Intensive Care [NIC] setting -- "special care nursery," incorporating sophisticated medical equipment and specially trained personnel to provide the optimal environment for assisting the endangered infant-at-risk through a critical stage in the transition to extrauterine life (Jonsen, 1976); the setting where occupational therapy services in Neonatal Intensive Care are delivered, as addressed in section II (questions 8-13) of the NIC survey/questionnaire form.

NIC program planning and implementation -- the development and execution of all aspects of occupational therapy practice in the neonatal intensive care [NIC] setting (e.g., evaluation, treatment, administration/management, and quality assurance) as addressed in question 30 of the NIC survey/questionnaire form.

Occupational Therapy -- for purposes of this study, a specialty area of professional practice devoted to maximizing the Neonatal Intensive Care [NIC] infant's

developmental potential (Anderson & Auster-Liebhaver, 1984) as well as the occupational role performance of the parents involved.

Potential areas of service delivery -- those clinical responsibilities which occupational therapists in neonatal intensive care could perform that are not identified by neonatologists/physicians when prescribing occupational therapy intervention, as addressed in question 17 of the NIC survey/questionnaire form.

Potential practice -- those clinical responsibilities which occupational therapists in neonatal intensive care could perform that are not or "rarely" identified by neonatologists/physicians when prescribing occupational therapy intervention, as addressed in question 18 of the NIC survey/questionnaire form.

Role -- for purposes of this study, the variety of responsibilities described by occupational therapists as addressed in question 19 of the NIC survey/questionnaire form.

Scope of practice guidelines -- comprehensive model outlining all aspects of occupational therapy NIC program delivery, including direct services (e.g., screening, referral, evaluation, intervention) and indirect services (e.g., program development, administration/ management, quality assurance, consultation) within the parameters of role delineation and training and competency guidelines, as addressed in questions 28 and 29 of the NIC survey/questionnaire form.

Assumptions

Previous research does not yet substantiate formulation of specific hypotheses dealing with occupational therapists' experience with program planning and implementation in the NIC setting. However, this study was based on the following assumptions:

1. Occupational therapists have become increasingly involved in NIC program planning and implementation as awareness of developmental risk factors in the NIC population has intensified.
2. The majority of occupational therapists' attempts at NIC program planning and implementation has been accomplished utilizing informal resources.
3. Occupational therapists have encountered difficulty in achieving recognition of their specific contribution to the NIC population.
4. If occupational therapists in the NIC setting wish to achieve recognition by their colleagues, the profession must take action to assess the situation on a national level. Such an assessment would enable the development of comprehensive standards of practice, sound role delineation, and adequate guidelines for training and competency in order for occupational therapists to be perceived as uniquely qualified to make important contributions to the NIC population.

Limitations

Limitations inherent in this research are those characteristic of exploratory studies utilizing survey methodology in general.

It was assumed that the responses recorded by the survey instrument would represent accurate reflections of each occupational therapist's personal and professional experience with NIC program development and implementation. Yet due to the sensitivity involved in such self-disclosure, personal biases and feelings of vulnerability may have influenced the quality of responses obtained. Finally, the combination of question styles may have affected the reliability of recorded responses and subsequent data analysis as well.

Significance of the Study

Advances in the field of neonatology have resulted in improved survival rates for preterm and other "high-risk" infants, especially those weighing less than 1500 grams and those younger than 30 weeks gestational age (Cole & Frappier, 1985; Stengel, 1982). High-risk pregnancies account for 10% to 20% of all deliveries in the United States, while 5% to 10% of all newborns are classified as "potentially ill neonates" (Pettet & Bird, 1985).

As recognition of the importance of early identification and treatment of developmental risk factors in the NIC population has intensified, occupational

therapists have been more consistently employed in facilities providing care for such high-risk infants (Pelletier & Palmeri, 1985). According to the American Occupational Therapy Association, Inc. [AOTA], there are nearly 1,100 Neonatal Intensive Care Units in the United States today, treating 4 to 6 percent of all newborns annually, and this figure continues to grow (Saltz, 1991b).

There are a variety of occupational therapy NIC programs in existence today, each one possessing a unique individualized treatment philosophy and approach to practice (Hyde, 1987). However, the occupational therapist is a relative newcomer to this highly specialized setting and must frequently struggle for professional credibility and acceptance in the NIC setting. One of the reasons for this struggle may be the lack of clearly defined roles or nationally established scope of practice guidelines for occupational therapy program development in neonatal intensive care.

Occupational therapy is acknowledged by the "professional community" as having a valid contribution to make to this area of practice (Hyde, 1987). It is the profession's responsibility to develop its role delineation, scope of practice, and to establish competency levels. Research is needed to provide the data for specific NIC role delineation, scope of practice criteria, and national guidelines for further training and competency levels. This is an issue of vital importance to occupational therapy which cannot be ignored if the profession is to remain in the forefront of a technologically evolving system of health care delivery for the NIC population. This study will contribute to the emerging role delineation and scope of practice definition

for occupational therapy in neonatal intensive care settings.

CHAPTER 2

REVIEW OF THE LITERATURE

The rapidly growing field of neonatal intensive care has been investigated at length over the past few decades. This literature review covers the following specific areas: (a) an overview of neonatal intensive care practice, (b) a description of the NIC setting, (c) roles of professionals involved, (d) the current status of occupational therapy practice in the NIC setting, (e) the delineation of role and scope of occupational therapy practice in Neonatal Intensive Care, and (f) the occupational therapy frames of reference utilized in this investigative effort to formulate a proposed conceptual framework for intervention in neonatal intensive care through this investigative effort.

The Practice Area of Neonatal Intensive Care

In the course of the past two decades, care of the high-risk infant has become one of the most rapidly evolving areas of pediatrics and obstetrics (Pettet & Bird, 1985). From a relatively few small centers for premature infants, neonatology has evolved into a labor-and-capital expensive, technology-sophisticated subspecialty area. With recent technological advances in neonatal care, very low birthweight infants between 500 and 750 grams, who would have died over a decade ago, are now being

treated and supported through the course of multiple insults and extended hospitalizations (Ensher & Clark, 1986). Improvements in the field now enable health professionals to monitor infants through complicated gestations, to postpone premature births, and make difficult or high-risk deliveries safer for both mother and infant (Pelletier & Palmeri, 1985). Pettet and Bird (1985) have provided a detailed account of the factors responsible for this growing interest in "reproductive efficiency," from which has evolved the more than 200 recognized neonatal centers in the United States today.

The concept of regionalization in neonatology arose in response to a demonstrated need for the delivery of advanced levels of care in smaller communities, and to smaller hospitals in larger communities (Korones, 1986). The fundamental idea of regionalization is to provide delivery of advanced levels of health care to all patients, regardless of geographical factors, and to impart new information to neonatal caretakers everywhere. One of the major reasons underlying efforts to regionalize neonatal care has been economics (Pettet & Bird, 1985). The capital necessary to underwrite the technology, facilities, manpower, training, and liability exposure for a perinatal/neonatal center is enormous. Since the common goal for such a concept is to improve the outcome of pregnancy, development of a regionalized system allows for optimal distribution of facilities and personnel, balance between costs and reliable access to care, and efficient use of limited resources.

Yet along with such sweeping technological advances and regionalization have

evolved ethical issues which cannot be ignored. Despite such advances, Sweeny (1985) reported that 25% of those infants requiring neonatal intensive care are estimated to be at "high-risk" for severe neurological impairment and/or developmental delay. Technological advances inherent in the field have now increased to capacity of professionals involved to sustain the lives of smaller and severely ill infants. However, this results in some financial cost to society as well as some developmental cost to the infant.

Premature newborns, for example, represent a disproportionate amount of the money spent on neonatal care (reported by Rachel Schwartz, Associate Director of the National Perinatal Information Center in Providence, RI, in Kantrowitz et al. [1988]). In 1985, the most recent year for which such figures are available, \$1.9 billion was spent on premature newborns requiring specialized care in regionalized neonatal intensive care units across the country.

In addition to the financial implications, issues related to delayed or impaired development of such seriously ill newborns arise. Eshner and Clark (1986) stated that while longitudinal studies investigating the effectiveness of neonatal intensive care interventions are underway, there exists a five to ten year delay between research conducted on current interventions and the reporting of objective data from the studies on developmental outcomes in the literature.

Added to the intense anxieties for the high-risk infant's intact survival are the ethics of decisions, demeanor, and motivation (Korones, 1986). Every day in NIC

settings across the country, health professionals and parents alike struggle with unanswerable questions. Is it "right" to pursue aggressive treatment for newborns who may not have a significant chance for a "normal" life? Who should decide what defines an acceptable "quality of life?" Is it appropriate to devote such extensive financial and technological resources to such a small percentage of patients as opposed to allocating more resources toward providing better preventive prenatal care? If it is now possible to keep newborns alive at 24 weeks, then how can legalized abortions be justified at this period of gestation? Has modern medicine outpaced law (Kantrowitz et al., 1988)? As a result, many institutions have established Infant Bioethics Committees composed of representatives of nonmedical disciplines as well as physicians to assist in the resolution of such ethical issues in the field (Korones, 1986).

The Neonatal Intensive Care [NIC] Setting

Although the Neonatal Intensive Care [NIC] setting as an environment has been an area of grave concern in neonatology from a medical standpoint, its impact has rarely been studied from a developmental or "ecological" perspective (Jones, 1982). In recent years, however, investigators have begun to study the unusual and confusing setting that parents of the infant in the "special care nursery" encounter as they try to meet the needs of their sleepy, fragile, and unpredictable

infant (Klaus & Kennell, 1982).

Prior to the 1960's, newborns were admitted to a term or a premature nursery; infected infants were admitted to a separate, irregularly staffed nursery reserved solely for those with "contagious" diseases (Korones, 1986). The contemporary NIC setting as we know it today arose in response to a growing awareness of the specific characteristics of perinatal disorder. Korones (1986) has described in perhaps the most eloquent detail of the literature reviewed the basic organization and functions of the neonatal special care facility of recent years; yet despite this detailed description, the author still referred to the milieu of the NIC setting as "ordered chaos" (Korones, 1986, p. 432).

Pelletier and Palmeri (1985) described the NIC setting as a "busy, often crowded place where the atmosphere is frequently high-pressured" (p. 297). Parente (1982) perceived the unit as a "hot, noisy place; hot to keep the babies warm, and noisy because of the myriad alarm systems attached to each baby for monitoring purposes" (p. 266). Blackburn (1983) characterized the NIC setting as a vast contrast to the intrauterine environment the high-risk infant had been accustomed to before birth; she cited the impressions of the University of Washington Premature Project as follows:

The [NIC] infant is deprived of the intrauterine influences and subjected to constant bright lights, sudden loud noises, and temperature fluctuations. A variable and unpredictable schedule ensues; there is often an irregular pattern

of handling and also an absence of handling in response to the infants' emerging behavioral organization (p. 76s).

Siegel, Gardner, and Merenstein (1985) perceived the NIC setting to be an "unfamiliar environment" for parents as well; the intense and "chaotic" appearance makes the NIC setting frightening to parents and serves to intensify feelings of helplessness and anxiety. Yet Green (1979) has reported that the highly sophisticated care of infants in NIC settings often contrasts with the undeveloped care of their parents. It has been well documented in the literature that the intimidating environment of the NIC setting can dictate the quantity as well as quality of parent-infant interaction (Consolvo, 1984; Goldberg, 1978; Minde et al., 1980). Chaze and Ludington-Hoe (1984) stated that to enhance growth and development of compromised neonates and optimize quality parent-child interactions in NIC settings today "we need more than monitors, isolettes, and respirators" (p. 68).

Klaus and Kennel (1982) cited numerous examples of interventions designed to assist parents in coping with the stressful conditions which comprise the NIC experience: these include transporting new mothers to maternity divisions of hospitals with an intensive care unit when necessary; "rooming-in" or "nesting" programs for parents to provide a homelike caretaking experience during the NIC hospitalization; early discharges for premature infants when appropriate; parent support groups; and programs designed to encourage maximum contact and reciprocal parent-infant interaction (e.g., "care-by-parent" programs described by Varner, Ossenkop, and

Lyon [1980]). Examples of "rooming-in" programs are described by O'Connor et al. (1982), and Varner, Ossenkop, and Lyon (1980). Examples of programs designed to facilitate parental interaction and promote parent-infant bonding and caretaking skills are cited in Daniels et al. (1984), Jenkins and Tock (1986), Paludetto et al. (1981), Rosenfield (1980), Yu et al. (1981), and Zeskind and Iacino (1984).

The NIC setting and experience itself is a source of extreme stress even for those dedicated professionals involved in direct delivery of care. Continuity of care is sometimes difficult to maintain, even with implementation of a primary caregiver approach (Anderson & Auster-Liebhaber, 1984). It is therefore understandable why many NIC professionals have at times throughout their careers experienced what is commonly referred to as "burnout" (Jacobson, 1978; Marshall & Kasman, 1980; Schmidt, 1977; all cited in Marshall & Kasman, 1982, p. 5).

But what about the specific nature of the NIC atmosphere and its influence on the infant who is admitted as it currently exists? A study conducted by Lawson, Daum and Turkewitz (1977) was one of the first designed to obtain basic information about the hospital milieu of infants in the NIC setting. The results of their study suggested the need to reconsider the assumption that NIC infants are deprived of stimulation in this setting. Their data indicated that these infants may perhaps be suffering from inappropriate patterns of stimulation as opposed to insufficient quantities assumed in previous years. Kennell (1978) referred to the problem as "sensory bombardment" for the average infant in the NIC setting. These results have

raised disturbing issues about the possible negative consequences of the conditions which predominate on a routine basis in the NIC setting.

When the literature is considered, it becomes clear that high-risk infants need to be provided with the best possible environment to foster both parent and infant recovery, and to integrate any intact mechanisms for future development. Brazelton (1973) has indicated that the creation of this "ideal environment" can only begin with a thorough assessment of the NIC settings currently in existence, and the roles of NIC professionals involved. Without a comprehensive assessment of the effects of the NIC experience on newborns and parents, Brazelton believes an invaluable opportunity to optimally support parents and improve the environment for the high-risk infant will be lost.

Roles of Professionals Involved

The various professionals involved in neonatal intensive care represent a wide variety of disciplines; all are dedicated to enhancing the high-risk infant's viability and developmental potential. Pelletier and Palmeri (1985) have stated that continuous interaction among these various disciplines and professional groups is essential to provision of comprehensive and efficient care.

It is important to note that each professional assumes a multiplicity of roles in the NIC setting. Yet it has been well documented in the literature that this overlap of

specific caregiving roles often leads to issues of territoriality, and the "crossing of interdisciplinary lines" (Brazelton, 1981; Kasman & Bryant, 1982; Korones, 1986; Pelletier & Palmeri, 1985).

The professionals involved in neonatal intensive care are many. A brief description of the predominant roles and responsibilities carried out by each group in the NIC setting is provided in this section.

Korones (1986) described the "hierarchy" of physicians who function in the NIC setting as being made up of board-certified neonatologists, fellows in neonatal-perinatal medicine, and what Roberts (1982) referred to as the "house officers"--medical residents and interns in training. Keefer (1981) listed the general responsibilities of the physician charged with the health maintenance of such infants as: (1) the medical treatment of acute illnesses, both minor and severe; (2) the management of chronic illnesses; (3) the detection and prevention of incipient illness by monitoring the markers of both physical and emotional health; and (4) the translation of current scientific advancements in diagnostic and therapeutic techniques to use in the primary care setting.

As seen from the above description, the physician's role is "multidimensional" in nature. Yet the NIC physician's responsibilities also include sharing of relevant information with the parents of the children for whom they care. Working with parents as partners and "allies" provides for an effective and balanced convergence of roles for the physician who is considered to be the one "in charge" of the overall care

of the high-risk infant.

Although the physician-neonatologist may be considered "in charge" in the NIC setting, it is perhaps the NIC nurses who have the most complex and demanding of roles and responsibilities. Hale and Levy (1982) described the NIC nurse as the professional primarily involved in direct care for their critically ill patients.

The quality of NIC nursing is considered by Korones (1986) to be the most critical determinant of overall quality of the NIC setting itself. While they are conceived of as the "primary direct caregivers," they also play a major role in modulating interactions between the infant and the environment (Blackburn, 1983). NIC nurses must constantly deal with the unique problems presented by the physical environment such as the sophisticated technology, the atmosphere of rapid change, never-ending emergencies, the continuous stream of research being conducted, as well as the reality of frequent death (Hale & Levy, 1982). In addition, NIC nurses constantly interact with parents in crisis, and maintain complex relationships with the multiple groups of caregivers coming and going each day.

Marshall (1982) also described NIC nurses as playing a key role in determining whether the NIC setting functions effectively or not. He believes that neonatologists must continuously work at developing and maintaining open lines of communication with NIC nurses in order to obtain important information from those who spend the most time with the infant and make crucial clinical observations.

Cape (1982) wrote of the growing specialization that has evolved in NIC

nursing care, and described the roles and functions of the Clinical Nurse Specialist [CNS] as a relatively new scope of nursing practice. The CNS usually has achieved an advanced degree, and serves as a role model for orienting NIC staff nurses. The CNS is also involved in various administrative duties as well as in developing nursing policies and procedures, and standards of nursing care for optimal functioning of the NIC setting.

Kasman and Bryant (1982) referred to the NIC social worker as the formal "coordinator and provider" of psychosocial care to the families involved. This may be viewed as an umbrella definition for the myriad of roles the NIC social worker assumes each day--teacher, counselor, resource for financial and insurance matters, support person, advocate, and community liaison. The social worker is one of the only professionals who is able to look at the NIC setting in a systematic manner to identify ways in which it might support families more effectively through such difficult times.

The hospital chaplain is involved in providing support of a spiritual nature to NIC families. Roles and responsibilities of the chaplain involve the administration of religious sacraments, providing support via prayer and meditation, and that of ethical advisor. It is usually the hospital chaplain who serves as the authority on religious ideation connected with the stress and coping involved in the NIC setting (More, 1982).

Other professionals involved include obstetricians, who usually notify the NIC

setting of impending admissions; respiratory therapists, who provide crucial ventilatory support; and hospital technicians, who are frequently called upon for pertinent procedures and tests (Korones, 1986, p. 430). Many NIC infants also require care by other specialists such as cardiologists and pediatric surgeons (Marshall, 1982). The NIC ward clerks are indispensable in keeping this intense and busy group of professionals organized, as well as being responsible for clerical duties which are vital to the efficient functioning of the NIC setting (Korones, 1986).

As previously mentioned, issues of ethics have further evolved with the increasing sophistication of technology now sustaining the lives of smaller and sicker infants in the NIC setting. Philosophers and medical ethicists are thus considered vital members of the NIC team whose principal responsibilities deal with addressing such extremely complicated issues. In many settings, protocols have been developed which require such consultations; in others, the philosopher or medical ethicist is periodically present during patient rounds to answer questions or attempt to clarify issues for fellow professionals involved (Korones, 1986).

To serve increasing numbers of high-risk infants now known to be at risk for future developmental delays, Sweeney (1985) described the role of "NIC therapists," that is, specialized pediatric occupational and physical therapists, as providing the NIC medical team with valuable adjunctive support in neurological and developmental assessment and case management. They also play a major role in reinforcing the preventive aspects of health care by providing early intervention and long-term

developmental monitoring.

Anderson and Auster-Liebhaber (1984) have classified these "NIC therapists" as occupational therapists and physical therapists involved in a "clinical partnership" in the NIC setting. Principal roles and responsibilities of the neonatal occupational therapist include proper positioning, provision of developmental activities such as feeding and the utilization of purposeful relationships to enhance the high-risk infant's overall developmental potential and functional capacity. The neonatal physical therapist utilizes handling and facilitation techniques to encourage optimal motor development given the high-risk infant's medical condition. Although this general role delineation distinguishes between interventions specific to occupational and physical therapy, most often the type and extent of involvement with developmental interventions is largely determined by which professional is first to arrive to treat the high-risk infant in the NIC setting (Hyde, 1987).

Pelletier and Palmeri (1985) stated that the multiple and varied needs of high-risk infants necessitate the involvement of such a variety of professionals. No one professional group possesses the required knowledge or skills to address the variety of needs encountered in the NIC population. By drawing upon the talents of all professionals involved, the NIC setting functions optimally, and care of the highest quality can be provided more compassionately and effectively to all families involved (Marshall, Kasman & Cape, 1982).

The Current Status Of Occupational Therapy Practice in Neonatal Intensive Care

Occupational Therapy is formally defined as:

the art and science of directing a person's participation in selected tasks to restore, reinforce, and enhance performance, facilitate learning of skills and functions essential for adaptation and productivity, to diminish or correct pathology, and to promote and maintain health. Its fundamental purpose is the development and maintenance of a person's capacity, throughout life, to perform with satisfaction to self and others, those tasks and roles essential to productive living and the mastery of self and the environment (The American Occupational Therapy Association, Inc., 1983).

The Philosophical Base of Occupational Therapy, adopted in 1979, is stated by Hopkins (1983b) as providing a further basis for theory and practice of the profession. In addition to the philosophical base, the Representative Assembly of the American Occupational Therapy Association, Inc. further established:

that there be a universal acceptance and implementation of the common core of occupational therapy as active participation of the patient/client in occupation for purposes of improving performance. The use of facilitating procedures is only acceptable as occupational therapy when used to prepare the patient/client for better performance and prevention of disability, through self-participation

in occupation...Increased emphasis should be placed "on more creative involvement of the patient/client in purposeful, motivating and constructive occupation based on individual behavioral evaluations and treatment."

(Resolution #532-79, Representative Minutes, April, 1979, as cited in Hopkins, 1983b, pp. 27-28).

Throughout the history of the profession, the focus of occupational therapy has been on the functional capacity of the individual in relation to occupational role performance and the environment of which the individual is a part (Hopkins, 1983a). Mosey (1968) stated that occupational therapy's main focus is on assisting individuals to develop "adaptive skills" in order to effectively cope with dysfunction or disability. Llorens (1976) indicated that assisting the individual to develop or regain functional capacity via adaptation is a major focus for prevention, remediation, and maintenance of occupational therapy.

Given the theoretical premises on which the profession is founded, the role of the occupational therapist in neonatal intensive care can be validated given the risks for developmental delay encountered by high-risk infants and parents alike. Yet due to the nature and complexity of this practice area, additional study and clinical experience in fetal development and neonatal pathology as well as the psychology of parent-infant relationships is needed beyond that which is provided by present educational preparation in occupational therapy. A strong theoretical and clinical framework for neonatal practice in addition to basic entry-level professional education

and general pediatric experience is needed (Anderson & Auster-Liebhaber, 1984; Campbell, 1986; Liberg, 1985; Morroni & Hickman, 1986b; Pelletier & Palmeri, 1985; Ramm, 1986; Sweeney, 1985; Sweeney, 1986).

Campbell (1986) reported that the organization of programs for occupational therapy intervention in the NIC setting requires specialized knowledge and skills in neonatal medicine, assessment of development in early infancy, early intervention, and interdisciplinary interaction, as well as parent education.

Although a relatively recent specialty area of practice, occupational therapy in neonatal intensive care is now more frequently discussed in the literature. The majority of literature described the occupational therapist in neonatal intensive care as primarily involved with enhancing developmental progression of oral motor skills required for feeding (Case-Smith, 1988; Case-Smith et al., 1989).

Sensory intervention is described as another significant aspect of occupational therapy treatment of the high-risk or premature infant in the NIC setting (Anderson, 1986). Denton (1986) outlined an occupational therapy protocol for assessing infants as well as toddlers who fail to thrive [FTT] that can be implemented in the NIC setting. Alzone (1988) and Saltz (1991) both described responsibilities of the occupational therapist in the NIC setting as incorporating (a) early identification of and referrals for infants with developmental deficits, (b) parent education on developmental implications, and (c) assistance with facilitation of transition from hospital-based to community-based follow-up services.

Gorga (1989) conceptualized the role of occupational therapy in the NIC setting as an "environmental" approach as well as a "clinical" approach: the environmental approach is based on the philosophy that all infants in the NIC setting require a systematic and individualized plan for the organization of their environment in order to maximize efficient adaptive responses; the conceptual approach is specific to the developmental needs of the infant (e.g., feeding and handling techniques).

Anderson and Auster-Liebhaver (1984) have provided a model for a NIC Developmental Therapy Program with a primary goal of maximizing the high-risk infant's developmental potential by promoting the process of parent-infant attachment. Sweeney (1985) outlined a NIC parent-teaching program as a vital area of occupational therapy intervention as well. Other occupational therapy NIC programs reviewed in the literature include those described by Courtway-Meyers (1985), Lutostanski (1985), the Infant Enrichment Program at Saint Barnabas Medical Center in Livingston, New Jersey (OT Week, 1987, July 16), as well as the programs discussed by Holloway (1987), and Kirschbaum and Winkelman (date unknown).

Although similar in scope and depth, all of the literature possessed conceptual frameworks for clinical practice unique and slightly individualized when compared. This becomes an issue of extreme importance when investigating the status of occupational therapy in the NIC setting today.

In addition to an increase in the literature, there has also been an increase in the subject of occupational therapy practice in neonatal intensive care presented at

conferences on both the national and state level. Holloway and Uhler (1980; cited in Official Program, 61st annual American Occupational Therapy Association Conference) have presented a theoretical framework for occupational therapy intervention based upon the sensory-integrative and occupational behavior frames of reference. Hyde (1987) has presented her concerns about the future of occupational therapy practice in the NIC setting in a presentation given at the 11th annual Occupational Therapy Association of California conference. This stimulating address has been the basis for the development of the research questions and objectives explored in this thesis.

More recent presentations and poster sessions include those by Almli et al., Mouradian, Vergara, and Vergara et al.-- all cited in the Official Program of the 70th annual American Occupational Therapy Association Conference (1990). Presentations presented at the 71st annual American Occupational Therapy Association Conference as described in the Official Program (1991) included those by Colby and Tluczek, D'Agati, Hunter, and Strzyzewski. In addition, a roundtable discussion addressing the role of occupational therapy as well as professional preparation for clinical practice in the NIC setting was presented by Gorga (1991; cited in Official Program, 71st annual American Occupational Therapy Association Conference).

As can be seen from the above review of the literature, occupational therapists in NIC settings are involved in a "new frontier" of clinical practice. With this expanded role, responsibilities arise for quality assurance in practice as well as for

advanced clinical training beyond general pediatric education in neonatology and infant therapy techniques. Yet the available research on occupational therapy intervention in neonatal intensive care takes us no further at the present time.

Delineation of Role and Scope of Practice of Occupational Therapy in Neonatal Intensive Care

The American Occupational Therapy Association, Inc. [AOTA] has through the years served the profession by establishing standards for practice supporting research efforts to enhance the development of the profession (Reed & Sanderson, 1983). The association's Representative Assembly, composed of representatives from established professional constituencies/election areas, is the formal decision-making body responsible for the legislation and establishment of policies for the association. The AOTA Commission on practice, a Standing Commission of the association's Representative Assembly, is formally responsible for developing role delineations for occupational therapy in all professional settings (AOTA, Inc., 1983).

The Official Documents of the American Occupational Therapy Association incorporate standards of practice for occupational therapists providing direct services in a variety of settings; all have been adopted by the Representative Assembly between 1968 and 1980 (AOTA, Inc., 1983). In addition, position papers outlining the role and function of occupational therapy in professional areas ranging from health

maintenance to vocational rehabilitation have also been established and officially adopted by the Representative Assembly between 1971 and 1982 (AOTA, Inc., 1983). Although these official documents have guided occupational therapists in providing more uniform services in various practice areas, they leave a significant degree of room for individual interpretation in program development and implementation.

In addition, role delineations and position papers in the official documents of AOTA have not addressed all specialized practice areas in which occupational therapists have begun to establish themselves, such as neonatal intensive care, to any significant degree. Yet the establishment of the Handicapped Act Amendments of 1986 [Public Law 99-457] is described by Dunn (1989) as resulting in numerous positive changes in service provision for occupational therapists in specialized areas such as neonatal intensive care.

The Representative Assembly has approved and published a position paper, as well as delineated roles and functions of occupational therapy, in early childhood intervention (Morrone & Hickman, 1986a; Morrone & Hickman, 1986b). Both were developed and adopted by the Representative Assembly, and specify the profession's position regarding the contribution of occupational therapy in the provision of early intervention services to young children who may have developmental delays, disabilities, or are otherwise at risk for developmental delays (Morrone & Hickman, 1986a). Although a positive step towards the establishment of the profession's viability in such specialized interventions as neonatal intensive care, these official

documents again merely serve to provide a broad guideline for professional practice and program implementation, and are subject to individual interpretation with regard to program development.

The association's Division of Practice has also developed an information packet as a result of member requests concerning occupational therapy practice in areas of early intervention. Its contents are intended to serve as an "initial guide" for occupational therapists to investigate specific areas of practice in early intervention (Bair, Gwin, Hertfelder, & Schafer, 1984). Unfortunately, these guidelines once again do not elaborate on all of the various types of early intervention programs with which occupational therapists are currently involved. In addition, they do not provide the specific prerequisites needed to develop unified and comprehensive programs in each practice area.

Other allied health professionals, such as physical therapy, have begun to address such basic needs on a national level. In 1979, the Section on Pediatrics of the American Physical Therapy Association identified basic competencies that should be included in entry-level programs (American Physical Therapy Association, 1979, as cited in Cochrane, Farley, & Wilhelm, 1990). In response to the need for additional advanced training and role delineation for physical therapists with infants and their families, Cochrane et al. (1990) described the Carolina Institute for Research on Infant Personnel Preparation [CIRIPP] funded by the US Department of Education. The institute's purposes are to develop and evaluate necessary training materials and

academic curricula, and to evaluate methods for educating physical therapists as well as other professionals to meet the needs generated by the passage of Public Law 99-457 (Cochrane et al., p. 373). Although multidimensional in nature, the research generated appears to focus primarily on current status and training needs of physical therapists in various areas of early intervention.

To fill the "gaps" and areas not addressed by AOTA, it appears that occupational therapy state associations have dealt with these issues on a local level. For example, the Occupational Therapy Association of California [OTAC] has developed practice guidelines to assist third-party payers in understanding specific occupational therapy services in order that they could utilize more rational payment approaches for all areas of occupational therapy practice (OTAC, 1979). Although initially developed to address third-party payment issues, these guidelines have served to provide practitioners with more detailed guides for program development as well. While clearly more specific in scope when compared to the guidelines developed at a national level, they still lack the degree of depth required for occupational therapists to develop comprehensive and unified programs in neonatal intensive care.

Practice guidelines from other states may differ in their interpretation of essential components required for NIC program development as well. This lack of unification in approach to clinical practice among the states represents yet another gap which is believed to affect occupational therapists from obtaining recognition in such a highly specialized area as neonatal intensive care.

It has been established in the literature that the role of the occupational therapist in neonatal intensive care can be organized under the following areas: (a) consultation, (b) screening, (c) assessment/evaluation, (d) intervention/treatment, (e) follow-up, and (f) referral to appropriate supportive services upon discharge from the NIC setting (Hyde, 1987; Pelletier & Palmeri, 1985; Ramm, 1983; Sweeney, 1985). Yet given the above review of current guides for NIC practice that govern the occupational therapist, it becomes apparent that these guides are not sufficient. Kozol (1986) has most eloquently expressed what has become the norm as a result of her personal experience with NIC program development:

Rarely will administrators approve of hiring a new, specially trained neonatal therapist when they cannot clearly see the financial implications. There are simply very few therapists trained in neonatal medicine. It appears therefore that many programs across the country are being essentially self-constructed and self-taught. While this is not ideal, it is frequently a reality (p. 1).

Occupational therapists have begun networking with one another to some degree to explore the issue of role delineation in the NIC setting (Hyde, 1987). In addition, occupational therapy research is beginning to be conducted in the area of NIC practice, but there is much more which needs to be accomplished. As Hyde (1987) has clearly stated: "what we [i.e., occupational therapists] do now will determine what we are allowed to do in the future."

Although AOTA still does not have an official position statement regarding

NIC practice, the Representative Assembly has charged the Commission on Practice to address this issue. A task force has recently been formed, headed by Gorga, and designed to address concerns regarding competencies for occupational therapists in the NIC setting, knowledge base necessary for practice, role delineations with other NIC professionals, and scope of practice guidelines (Saltz, 1991). Fox (1991) has already reported on the progress of the task force which met for the first time in July, 1991. The goal of the newly formed task force is to institute a set of national guidelines for the above areas pertinent to comprehensive occupational therapy practice in neonatal intensive care by 1992 (Saltz, 1991).

**Occupational Therapy Frames of Reference –
Guides for a Conceptual Framework
for Intervention in Neonatal Intensive Care**

The conceptual framework established for this research effort evolved from investigation of two of the profession's major frames of reference--"guides" for professional practice that have assisted occupational therapists in the clinical intervention process. Frames of reference have been defined as "conceptual structures" around which programs, organizations, or projects are developed or on which they are based (Pedretti & Pasquinelli-Estrada, 1985). The information in this proposed research lends itself to be "organized" and guided by two of the most

established and respected frames of reference in the field of occupational therapy today: (a) the developmental frame of reference, and (b) the occupational behavior frame of reference. Both will be examined in this final section of the literature review as they relate to occupational therapy program planning and implementation in the NIC setting.

The developmental frame of reference in occupational therapy evolved from the work of various theorists who emphasized the sequential nature of growth and development as an orderly process (Llorens, 1970; Llorens, 1976; Mosey, 1968; Reed, 1984; Tiffany, 1983). Tiffany (1983) has reported that such a developmental approach to occupational therapy program planning and implementation requires that therapists understand the levels of adaptation on which their clients are functioning, and, as much as possible, the conditions which tend to make the client function at "higher" and "lower" levels. When applying this approach to occupational therapy intervention in the NIC setting, the provision of neurological and developmental assessment and case management might provide infants in the NIC setting and their parents alike with success-oriented experiences by meeting individual levels of adaptation.

In this regard occupational therapy intervention can be conceived of, as eloquently stated by Llorens (1970) in her now classic Eleanor Clark Slagle Lecture, as a "facilitation process"--one which assists individuals in achieving "mastery of life tasks" and the ability to "cope as efficiently as possible with the life expectations

made of them through the mechanisms of selected input stimuli, and availability of practice in a suitable environment" (p. 93). By looking at the problems surrounding occupational therapy practice in the NIC setting from such a developmental perspective, clinicians can perhaps be assisted to gain a deeper understanding of the importance of comprehensive and thorough standards of practice. This would allow occupational therapists to cope with the NIC setting in the most appropriate and effective manner possible.

Although the developmental frame of reference serves a vital purpose in placing the problems with occupational therapy practice in the NIC setting in clearer perspective, the occupational behavior frame of reference is perceived as being equally important in guiding this proposed investigative effort. Reilly (cited in Reed, 1984) and Matsutsuyu (1971; 1983) are perhaps best associated with the occupational behavior frame of reference through their extensive research and writings. It is Reilly who, in 1969, outlined the theoretical framework of occupational behavior. Based on the idea that the "task" of occupational therapy is in prevention and reduction of incapacity resulting from illness, Reilly has suggested that occupational behavior be organized along the developmental continuum of work and play and acknowledged within the context of occupational roles (Reed, 1984). In this respect the occupational behavior frame of reference shares many of the same tenets proposed by the developmental frame of reference.

Much of the research conducted to develop and expand this practice model has

been carried out by Reilly's graduate students in the Department of Occupational Therapy at the University of Southern California. As a result of these research efforts, Matsutsuyu (1971) stated that studying three important processes becomes essential in validating this broad frame of reference for professional practice:

(a) socialization, (b) occupational choice, and (c) occupational role.

It is this aspect of occupational role that has contributed to the development of the specific type of intervention suggested by this proposed research. The concept of role enables occupational therapists to perceive themselves as vital members of the treatment team of which they are a part. In this respect the occupational behavior frame of reference can be perceived of as a holistic approach on which to base comprehensive and unified standards of occupational therapy practice in the NIC setting.

This exploratory phase of building and formalizing a conceptual framework for the development of specialized standards of NIC practice leads the researcher to believe that both frames of reference discussed are sound and appropriate "guides" for the development of unified and professional practice in neonatal intensive care.

Summary

As seen from a review of pertinent literature, the practice area of neonatal intensive care has evolved into a highly specialized and technologically sophisticated

subspecialty area of pediatric practice for all professional groups involved. As modern medicine grows increasingly capable of sustaining human life despite the reality of illness and disability caused by prematurity, congenital anomalies, and acute insults at birth, the ethical implications regarding quality of life for these infants take on crucial importance in clinical management. The literature indicates that the NIC setting itself can be stressful for patients and families relative to the highly specialized interventions necessitated by the NIC hospitalization, as well as the primary source of burnout for many professionals involved.

As the number of premature infants and infants born with congenital and acute disabilities increases, the number of occupational therapists who care for them is also on the rise. As can be seen from the literature reviewed, the occupational therapist in neonatal intensive care is in a unique position to provide the high-risk infant population with specialized interventions which will minimize the effects of developmental delays, while enhancing developmental potential of the highest quality possible for infants and families alike. The knowledge level and skill requirements for occupational therapists in the Neonatal Intensive Care [NIC] setting were described in the occupational therapy literature as highly specialized and advanced. Yet with no official role delineation or standards of practice, occupational therapists may now find themselves involved in an intricate network of professionals with ill-defined divisions of responsibility (Saltz, 1991).

A conceptual framework for occupational therapy intervention in neonatal intensive care based on the developmental and occupational behavior frames of reference has been outlined in this literature review to facilitate the process of role delineation as well as scope of practice and training guidelines required for the profession to establish itself as a valid component of the NIC health delivery model.

CHAPTER 3

DESIGN AND METHODOLOGY

Objectives

The objectives of this study were to provide data with which to:

1. Determine whether discrepancies exist between the current practice of occupational therapy in the Neonatal Intensive Care [NIC] setting and potential practice as perceived by occupational therapists currently working in this area.
2. Begin delineating the role of occupational therapists who practice in Neonatal Intensive Care [NIC] settings.
3. Determine parameters related to the development of scope of practice guidelines for occupational therapy in the Neonatal Intensive Care [NIC] setting.

Questions

The research questions posed in this study were:

1. What is the perception of the role of occupational therapy in Neonatal Intensive Care [NIC] settings as identified by occupational therapists currently

- involved NIC program and implementation?
2. What specific direct and indirect services are currently provided by occupational therapists working in Neonatal Intensive Care [NIC] settings?
 3. What specific direct and indirect services do occupational therapists working in Neonatal Intensive Care [NIC] settings believe they have the skills to offer, in addition to those currently provided?
 4. Do any discrepancies exist between those direct and indirect services currently provided by occupational therapists in Neonatal Intensive Care [NIC] settings, and those perceived as potential areas of service delivery?
 5. What are the obstacles identified by occupational therapists working in Neonatal Intensive Care [NIC] settings which are perceived to be contributing to discrepancies between potential and actual areas of service delivery in neonatal intensive care?

Subject Selection

In order to contact registered occupational therapists [OTRs] who provide services in NIC settings, the Direct Mail Services of the American Occupational Therapy Association, Inc. [AOTA] was contacted to obtain mailing labels for a randomly selected group of clinicians who were involved in pediatric practice with infants under one year of age in the United States (AOTA, Inc., 1987).

Upon receipt of the mailing labels, each occupational therapist was sent an information letter by mail describing the nature of the study and inviting their participation [Appendix A]. Potential participants were requested to return the accompanying response form indicating their desire to be a part of the outlined study [Appendix B]. A self-addressed, stamped envelope was included for participants' convenience.

Those participants indicating their agreement to participate in the study were then sent a consent form to sign [Appendix C], and the NIC survey/questionnaire [Appendix D] to complete. The consent form outlined possible risks, as well as potential benefits incurred as a result of participation through completion of the NIC survey/questionnaire. Participants were requested to read and sign the consent form, along with a witness, prior to returning the form and completed survey/questionnaire to the researcher. A self-addressed, stamped envelope was again provided for convenience.

For those participants who did not return their response form within sixty days, or for those who indicated no interest in the proposed study, a second letter expressing appreciation for having taken the time to consider their participation, as well as requesting their reconsideration [Appendix E] was mailed. Telephone contact was also made, as specifically requested by two of the OTRs who indicated so on their returned response forms. They were provided with additional information regarding the nature and purpose of the study. Potential subjects who reconsidered

their participation and decided to participate by mailing back the second response form were then mailed a copy of the consent form [Appendix C] to sign. They were also mailed the NIC survey/questionnaire [Appendix D] to complete, with similar procedures implemented as previously described. A reminder postcard [Appendix F] was also mailed to those participants with outstanding survey/questionnaires and consent forms to encourage their return.

Although the actual number of registered occupational therapists currently practicing in NIC settings across the country was not available from the Direct Mail Service of AOTA, 211 randomly selected clinicians involved in practice with infants under one year of age was the sample population obtained in order to initiate data collection. The Direct Mail Service of AOTA was responsible for obtaining the randomized sample.

Mechanisms for Maintaining Confidentiality

Complete confidentiality was provided to each participant given the sensitive and personal nature of the practice issues addressed. A coding system based on a combination of numbers and letters was assigned to each participant in the initial random sample, and located at the upper right-hand corner of the introductory letter [Appendix A] and response form [Appendix B] mailed. Participants' last names were alphabetized and zip codes placed in numerical order; both were assigned a letter and

number based upon their order. Cities and states where participants are located were assigned a letter and number as well. All consent forms and data collection instruments were also assigned this coded combination based on the above formula. Refer to Appendices B-D, upper right-hand corner of front pages for samples of coded combinations utilized during data analysis.

Although a list of participants and corresponding codes was maintained at all times for tracking purposes, the researcher as well as the statistician consulted did not have access to this list during actual analysis of the data. All copies of this list were given to the researcher's major advisor in a sealed envelope to keep during this time.

Method

In order to obtain information regarding occupational therapists' perceived potential role and the extent of their actual role in the NIC setting, the overall design of this study implemented survey methodology. Since the study could also be categorized as exploratory in nature, no significant measures of control were taken. All registered occupational therapists [OTRs] currently involved with NIC program development and/or implementation to any degree obtained from AOTA's Direct Mail Service were considered potential participants for this study.

The method of data collection was survey by mailed questionnaire sent to each subject to complete individually. The final copy of the instrument is included in

Appendix D. A copy of the instrument was given to each member of the researcher's thesis committee for feedback and suggestions for improvement during the design phase.

In addition, a "pilot study" of the instrument was conducted with two therapists working in this specialized area with whom the researcher was familiar. Formal statistical consultation was obtained during construction of the questionnaire's design in order to allow for consistency and validity with data collection.

The final questionnaire contained 31 items divided into 4 major sections, each designed to explore a practice area relevant to occupational therapy in the NIC setting by incorporating a variety of closed-ended and open-ended questions for response. The sections covered: (1) personal information for obtaining demographic statistics on the response group; (2) background information on the NIC setting itself; (3) OT program development in the NIC setting; and (4) specific practice issues pertinent to occupational therapy in the NIC setting. The instrument also included a fifth optional section reserved for any feedback participants may have wished to share with the researcher regarding the quality of the instrument as well as the study itself.

Completion of the survey questionnaire was estimated to be twenty minutes. Participants were able to return completed questionnaires by mail in the self-addressed, stamped envelope provided. Participants were also given the opportunity to receive a copy of the results of the study if so desired [see Appendix D, p. 145].

Statistics

Descriptive statistics were utilized in the analysis of quantitative data obtained from the closed-ended responses given in each section of the completed survey/questionnaires.

Individual variables, or "value labels," were generated from each of the closed-ended questions in the survey-questionnaire form. Those closed-ended questions which generated more than one response had the appropriate number of value labels assigned (e.g., Question 16 on the NIC survey/questionnaire form generated 8 variables for statistical analysis, one for each group of NIC professionals listed). Only one coded response was assigned for each variable or value label, and all coded responses were utilized to create a spreadsheet using the Claris Appleworks (1987 version) wordprocessing software package on an Apple IIGS personal computer. The spreadsheet generated a total of 2,204 items of individual data, calculated as follows:

total number of variables from closed-ended questions:	76
final number of participants, or final "n" value:	<u>x29</u>
total number of individual items of quantitative data:	2,204.

Once verified for accuracy, this Appleworks spreadsheet file was then converted to Appleworks ASCII format on 5 1/4" floppy disk. The Appleworks

ASCII file required conversion by an outside software conversion service to ASCII file for an IBM 5 1/4" floppy disk formatted at 360K for the statistician to utilize and complete all necessary analyses of data. The statistician entered the IBM ASCII file into his computer data base, and verified the accuracy of the data. All quantitative statistical analyses were conducted on an IBM personal computer using the Statistical Package for the Social Sciences -- SPSS PC/PC +.

Upon completion of statistical analysis of data and further discussion with the statistician, it was recommended that the resulting quantitative, or descriptive, statistics be presented in terms of "valid percent" as opposed to "straight percent" for a number of reasons. Given the low response rate as well as the fact that not every participant responded to each question meant that gaps consistently resulted for certain value labels generated. By presenting the data via "straight percent," a lower response rate would be obtained in many areas of quantitative data. Yet by presenting response rates based on the number of participants who actually responded to each question, a more consistent as well as higher percentage could be achieved.

Qualitative data generated from the open-ended questions were listed individually, and those areas most frequently identified by respondents were categorized without formal statistical analysis.

CHAPTER 4

ANALYSIS OF DATA

Survey/Questionnaire Response Rate

Of the initial 211 introductory letters mailed to potential NIC study participants 132 responses were returned, yielding an overall return rate of 62.6%. Yet it is significant to note that of the 132 responses received from potential participants, 67 or 50.7% indicated that they are not involved in this specialized area of pediatric practice. Of the 65 involved in NIC practice and indicating an interest to participate in the study, 29 participants actually returned their completed NIC survey/questionnaire and consent forms, for a final response rate of 44.6%. Refer to Table 1 for a complete distribution of the initial subject sample.

It is of significant interest to note the unusually high percentage of potential participants in the initial sample [$n = 132$] that indicated on their response forms they were not involved in NIC practice--50.8%. This percentage may be a reflection of the lack of visibility which registered occupational therapists involved in NIC program planning and implementation have had in the past. The initial random sample was obtained from the Direct Mail Service of the American Occupational Therapy Association, Inc. [AOTA, Inc.] (see figure 1). The Direct Mail Service generates its

Table 1

Response Distribution of NIC Study Participants

I. TOTAL RANDOM SAMPLE	<u>n</u>	PERCENT OF N
Initial N	211	100.0%
Number of total returned responses	132	62.6%
Number of non-respondents despite <u>repeated</u> attempts to contact	79	37.4%
II. TOTAL RETURNED RESPONSES	<u>n</u>	PERCENT OF N
Initial N of returned responses	132	100.0%
Number not involved in specialty area of practice	67	50.8%
Number involved in specialty area of practice	65	49.2%
III. FINAL SAMPLE	<u>n</u>	PERCENT OF N
Final N	65	100.0%
Number referring out to other clinicians [0 follow-through]	7	10.8%
Number requesting further contact/information but 0 response	7	10.8%
Number requesting participation but 0 return of survey/questionnaire form despite reminder postcard sent [even after cutoff]	22	33.8%
Number of actual participants	29	44.6%

FINAL SAMPLE = 65

PERCENTAGE OF PARTICIPANTS FROM FINAL SAMPLE = $29/65 = 44.6\%$

Figure 1. Invoice from the Direct Mail Services of AOTA, Inc.

The American
Occupational Therapy
Association, Inc.

1383 Piccard Drive PO Box 1725
Rockville, MD 20850-4375
(301) 948-9626

NO. 35067
REFER TO ABOVE NUMBER
ON ALL INQUIRIES

SOLD TO: Sandra A. Cicuttin
3326 Divisadero Street
San Francisco, CA 94123-1906

SHIP TO: same

FEDERAL ID# 13-1526422

PURCHASE ORDER NO. Brochure

DATE	2/3/89	DEPARTMENT	355 (c-3064)	SHIPPED VIA	UPS
QUANTITY	DESCRIPTION			UNIT PRICE	AMOUNT
211 x 5	Pressure Sensitive Labels for OTRs who work full-time in Pediatric Hospitals			\$15.83	
	Original Set			\$75/m	\$15.83
	extra 4 sets			\$37.5/m	\$31.68
				SUB TOTAL	\$47.51
				DISCOUNT	
				MD STATE TAX	
				POSTAGE	
TERMS: NET 30 DAYS. A monthly finance charge of 1 1/2% (annual rate 18%) will be added to the past due accounts.				PLEASE PAY THIS AMOUNT	\$47.51
RETURN REMITTANCE COPY WITH YOUR PAYMENT FOR PROPER CREDIT					

ORIGINAL INVOICE

data base from completed AOTA member data surveys; information is updated every 5 years via distribution and return of surveys from AOTA members. The initial random sample was obtained in February, 1989, and based upon returned member data surveys to AOTA, Inc. from 1985. During data collection through the Direct Mail Service, the closest practice area available in order to obtain the randomized group desired was OTRs employed full-time in pediatric hospitals working with infants less than one year of age. As a result, a significant percentage of potential subjects who returned their initial response form were not involved in this specialized area of pediatric practice. Despite the low response rate, the integrity of the data collected should be maintained in light of the inability to obtain a more specialized randomized sample. The absence of a more specific method of tracking or identification of NIC practice as a specialized area of pediatric practice has significant implications for the future of NIC delivery of care for the profession; this will be explored further in the final chapter of this thesis.

Quantitative Data Analysis

All statistical analysis was completed with the assistance of a professional statistician utilizing SPSS PC/PC+ statistical software on an IBM personal computer. What follows is a review and discussion of pertinent information received from the quantitative data obtained.

Demographics

The demographic characteristics of the final sample population were analyzed for sex, age, educational level, years of experience, hospital setting, Occupational Therapy department setting, staff position, and employment status (see Table 2). Each respondent answered all questions dealing with demographic/personal information; percent and valid percent were thus equal during analysis of these data.

All 29, or 100%, of the participants in the final sample were women. Demographic information dealing with age and years of professional experience was divided to analyze the distribution of responses (see Tables 3 and 4). Roughly half, or 48.3%, of the participants were between 30 and 39 years of age. Thirty-four and one half percent of the respondents reported from 4 to 8 years of experience, while 37.9% stated having over 10 years of professional experience. It is important to note that "years of professional experience" included all areas of professional experience including neonatal intensive care. Thirteen (44.8%) of the participants indicated that they were in their present position between 0 and 2 years.

With regard to staff position and employment status, the majority of participants (82.8%) indicated being employed full-time; approximately half of the respondents (48.3%) also indicated being in senior OTR positions in their Occupational Therapy department's organizational structure.

Table 5 presents a profile of the 11, or 37.9%, of the participants who had the

Table 2

Demographics of NIC Study Participants [n = 29]*

<u>CHARACTERISTIC</u>	<u>MEAN</u>	<u>FREQUENCY</u>	<u>% / VALID %</u>
Sex	female	29	100.0%
Age	30-39 yrs	14	48.3%
Years as OTR	over 10 yrs	11	37.9%
	4-8 yrs	10	34.5%
Educational Level	BA/BS	24	82.8%
Years in current position	0-2 yrs	13	44.8%
	3-6 yrs	10	34.5%
Type of Hospital ¹	Private, non-profit	9	31.0%
Type of Hospital ²	Specialized --Children's	7	41.2%
OT Department Size	2-5 FTEs	13	44.8%
Staff Position	Senior OTR	14	48.3%
Employment Status	Full-time	24	82.8%

* all participants responded to the above questions; "Valid Percent," which is defined as the number of the most common responses based upon the actual number of participants who responded to a question, and "Percent," are considered equal.

¹ Most Frequent Type of Institution Indicated

² Second Most Frequent Type of Institution Indicated

Table 3

Age Distribution of NIC Study Participants [n = 29]*

Age	Frequency	Percent/Valid Percent
20 - 29 years	9	31.0%
30 - 39 years	14	48.3%
40 - 49 years	5	17.2%
50 - 59 years	1	3.5%
TOTAL	29	100.0%

* [n = 29 for all responses, thus Percent = Valid Percent]

Table 4

Distribution of Professional Experience of NIC Study Participants [n = 29]*

Years as OTR	Frequency	Percent/Valid Percent
2 - 4 years	4	13.8%
4 - 8 years	10	34.5%
8 - 10 years	4	13.8%
over 10 years	11	37.9%
TOTAL	29	100.0%

* [n = 29 for all responses, thus Percent = Valid Percent]

Table 5

**Professional Profile of NIC Study Participants with Over 10 Years of Experience
in Occupational Therapy [n = 11]***

Years Employed in Setting	Position	Employment Status
Over 10 Years	Specialist	Full time
7 - 10 Years	Director	Full time
0 - 2 Years	Contract Service	Full time
0 - 2 Years	Supervisor	Full time
0 - 2 Years	Senior OTR	Full time
Over 10 Years	Coordinator	Full time
3 - 6 Years	Senior OTR	Full time
3 - 6 Years	Senior OTR	Full time
Over 10 Years	Senior OTR	Full time
3 - 6 Years	Senior OTR/Specialist	Full time
Over 10 Years	Senior OTR	Full time

* n = 11 participants of 29 with over 10 years of experience in occupational therapy; therefore 11/29, or 37.9% percent/valid percent of NIC study participants have over 10 years of experience in occupational therapy

greatest years of professional experience in occupational therapy. Although length of employment varies in their current settings, it is significant to note that all are employed in either specialist, senior OTR, or upper management positions. In addition, 100% of the participants in this group were employed in their positions full time.

Profile of Participants' NIC Settings

Demographic data were obtained on the NIC settings where participants worked. Information was requested on number of years in existence, bed capacity, number of newborns cared for per year, level of care, as well as nursing ratios. Refer to Table 6 for specific information on each characteristic. Not all participants responded to each question in this particular section, with average $\bar{n} = 24.8$; the frequency of responses are thus based on valid percent, or the most common response based on the number of participants answering a particular question. As can be seen from the table, the NIC settings were well-established [in existence between 15-20 years], have a large bed capacity [over 20 beds], care for a large number of newborns per year [over 200], and have the highest level of care available [Level 3 nurseries]. Over half of the settings also have low nursing ratios [1:1, or 1:2 at most]. These characteristics suggest a highly sophisticated and specialized setting demanding clinical competency levels of the highest quality.

Table 6

Profile of NIC Settings Where NIC Survey Participants Work[Average $\bar{n}$ = 24.8]*

Characteristic	Mean	Frequency	$\bar{n}$	Valid %**
# Years NICU in Existence	15-20 years	9	26	34.6%
NICU Bed Capacity	over 20 beds	23	27	85.2%
# Newborns Cared for per Year	over 200	22	27	81.5%
Level of Care	Level 3	20	27	74.1%
Nursing Ratios	1:1	15	26	57.7%
	1:2	13	16	81.3%

* [average # of respondents = 24.8]

** [valid percent reflecting (frequency/ $\bar{n}$) per response]

When questioned about the overall quality of care within the NIC setting, the majority of participants indicated that their settings provide a high quality of patient care. Figure 2 presents a visual representation of where participants' perceptions of the quality of care in the NIC settings lie. Though 74.1% of participants reported that their particular NIC setting provided a high quality of care [6 or 7 on a scale of 1 to 8], none of the participants indicated the highest quality provided in the question posed. In addition, 30% of the participants indicated their NIC setting provided a quality of care level of "5" on a scale of 1 to 8.

Supportiveness of Fellow NIC Professionals

Data obtained regarding supportiveness of NIC professionals to occupational therapy are presented by means of a bar graph in order to visually compare the various professional groups to one another (see Figure 3). Although not all participants answered this question, an 84.05% overall response rate was obtained, indicating that most participants held definite opinions about the supportiveness of their fellow professionals in the NIC setting.

Occupational Therapy Interventions Requested in the NIC Setting

Participants were given a list of direct as well as indirect treatment interventions to which to respond. In addition, participants were also given the

Figure 2. Quality of care of NIC Settings

[n = 27]

Figure 3. Supportiveness of fellow NIC professionals

opportunity to provide interventions which they believed should have been included with those listed. Table 7 summarizes participants' responses, incorporating whether each treatment intervention was offered or not, in addition to frequency of intervention requested. Tables 8 and 9 are presented as adjuncts to table 7, and incorporate participants' specific direct and indirect treatment interventions which they were given the opportunity to include in this question.

Results from Table 7 revealed certain inconsistencies with the data obtained from completed survey/questionnaire forms. For certain treatment interventions participants who indicated a particular intervention was not requested by physicians when ordering occupational therapy still indicated a frequency of request [e.g., refer to "C" under Direct Service in Table 7 -- although only 28.6% of participants indicated that environmental modification was requested by physicians when ordering occupational therapy, 46.7% indicated that it is only "rarely" requested]. In addition, not all participants who indicated that a particular intervention was requested indicated a frequency of request. This inconsistency of responses may be due to one of many factors -- the format of the questions may not have been clear enough for participants to provide accurate and consistent responses for each intervention listed; perhaps participants' attention spans wandered given the length of the questions posed.

Many participants indicated in writing that they could not accurately respond to the questions as posed for one simple reason: physicians tend to write "blanket

Table 7

Occupational Therapy Interventions Requested in the NIC Setting and Frequency of Requests[Valid Percentages Reported Given Different $\bar{n}_1$ and $\bar{n}_2$ values]

Intervention	$\bar{n}_1$	f_y	$\%_y$	f_n	$\%_n$	Frequency	$\bar{n}_2$	f_2	$\%_2$	$\bar{n}_2/\bar{n}_1$
<u>Direct Service</u>										
A. Positioning	29	21	72.4%	8	27.6%	Frequently	20	9	45.0%	68.9%
B. ROM	28	22	78.6%	6	21.4%	Frequently	22	9	40.9%	78.6%
C. Env. Mod.	28	8	28.6%	20	71.4%	Rarely	15	7	46.7%	53.6%
D. SI	28	17	60.7%	11	39.3%	Frequently	21	7	33.3%	75.0%
E. Splinting										
UE Splin'g	28	27	96.4%	1	3.6%	Sometimes	28	15	53.6%	100%
LE Splin'g	26	20	76.9%	6	23.0%	Sometimes	20	10	50.0%	76.9%
F. Oral Motor										
Intervent.	29	26	89.7%	3	10.3%	Frequently	24	14	58.3%	82.8%
Parent Ed.	29	24	82.8%	5	17.2%	Always	25	9	36.0%	86.2%
H. Adapt. Eq.	27	22	81.5%	5	18.5%	Rarely/ Sometimes	21	8	38.1%	77.7%
I. Other*	7	7	100%	0	0	Frequently	7	4	57.1%	100%

Table 7 (continued)

Occupational Therapy Interventions Requested in the NIC Setting and Frequency of Requests

Intervention	$\underline{n}_1$	f_y	$\%_y$	f_n	$\%_n$	Frequency	$\underline{n}_2$	f_2	$\%_2$	$\underline{n}_2/\underline{n}_1$
<u>Indirect Service</u>										
A. Consultation to Staff	25	19	76.0%	6	24.0%	Sometimes	20	10	50.0%	80.0%
B. Follow-up Services	28	24	85.7%	4	14.3%	Frequently	26	10	38.5%	92.9%
C. Other ^b	5	5	100%	0	0	Sometimes/ Frequently/ Always	1 1 1	1 1 1	33.3% 33.3% 33.3%	60.0%
<u>Other Services</u>										
A. "c"	5	5	100%	0	0	Always	3	2	66.7%	60.0%
B. "d"	2	2	100%	0	0	Sometimes/ Always	1 1	1 1	50.0% 50.0%	100%

Legend. $\underline{n}_1$ = # of participants who responded to question 17 regarding "types of interventions" requested by NIC physicians f_y = # of "yes" responses to question 17 $\%_y = f_y/\underline{n}_1$ f_n = # of "no" responses to question 17 $\underline{n}_2$ = # of participants who responded to question 18 regarding "frequency" of requests by NIC physicians f_2 = # of most common responses to question 18 $\%_2 = f_2/\underline{n}_2$ $\underline{n}_2/\underline{n}_1$ = # of respondents who answered both questions

Table 8

Types of "Other" Interventions[n = # of responses]

a <u>n</u> = 7	b <u>n</u> = 3	c <u>n</u> = 3	d <u>n</u> = 2
1. handling to modify tone and facilitate movement	1. D/C planning*	1. Evaluation	1. Periodic Follow-Up Clinic
2. D/C evaluation and parent education	2. Inservices	2. NIC Follow-Up Clinic	2. Orientation of nurses to OT
3. Baseline development and treatment	3. Referral to IDP** when appropriate		
4. Assessment			
5. Infant program referral			
6. Occupational Therapy consult and recommendations			
7. Observations of parent-infant interaction during feeding			

*D/C = Discharge Planning

**IDP = Infant Development Program

Table 9

"Other" Interventions Indicated in Frequency of Request [n = # of responses]

a n = 7	b n = 5	c n = 5	d n = 2
1. NIDCAP*	1. IDP**	1. NICU F/U*** Clinic and Assessment	1. F/U Services
2. OT Consult and tx	2. Inservices	2. New nurses Orientation	2. Graduation Clinic; Home Health
3. OT Consult for all infants under 35 weeks	3. Bayley out-pt follow-up	3. General Inservices to nurses on positioning	
4. OT referral	4. Development of Support programs [e.g., rounds with nurses]	4. OT Consult	
5. OT referral	5. D/C planning	5. RN education	
6. Developmental Assessment			
7. D/C Brazelton evaluation for family education, or Gesell if older infant			

N.B. For tables 8 and 9, 6 out of 19 responses indicated general "OT consult"--
31.6% response rate

* NIDCAP = Neonatal Individualized Developmental Care and Assessment
Plan

** IDP = Infant Development Program

*** NICU/FU = Neonatal Intensive Care Follow-Up

referrals" for occupational therapy consultation/treatment since they are not aware of the specific interventions which occupational therapists are able to offer to the NIC population. Participants also stated that physicians tend to rely on their determination of appropriate treatment interventions once an occupational therapy evaluation is completed. Perhaps this contributed to the difficulty which some participants may have experienced when responding to this section of the survey/questionnaire form. This lack of knowledge of physicians regarding occupational therapy's role and purpose appears to be more of the norm as opposed to the exception for this population studied.

Specific information generated from the questions on occupational therapy treatment interventions and frequency revealed other interesting points as well. Tables 10 and 11 present the data into the highest and lowest ranked treatment interventions requested by physicians as well as their frequency of request. Table 10 presents information on the 5 highest interventions. Most interesting to note: 4 out of the 5, or 80% of the highest treatment interventions requested are direct interventions. All of the direct interventions listed (upper extremity splinting, oral-motor intervention, parent education, adaptive equipment assessment) are also interventions most traditionally recognized within the realm of occupational therapy practice. Upper extremity splinting was indicated by participants as the one treatment intervention indicated by physicians 96.4% of the time an occupational therapy consultation is requested; yet only 53.6% of the participants indicated this treatment

Table 10

Five Highest Occupational Therapy Interventions and their Frequency

[refer to Table 7 for legend]

Ranking	Intervention	Type	n_1	f_1	$\%_1$	Frequency	n_2	f_2	$\%_2$
1	UE Splinting	Direct	28	27	96.4%	Sometimes	28	15	53.6%
2	Oral-Motor Int.	Direct	29	26	89.7%	Frequently	24	14	58.3%
3	Follow-Up Services	Indirect	28	24	85.7%	Frequently	26	10	38.5%
4	Parent Ed.	Direct	29	24	82.8%	Always	25	9	36.0%
5	Adaptive Equip.	Direct	27	22	81.5%	Rarely/ Sometimes	21	8	77.7%

NOTE: 4/5, or 80%, of highest interventions are direct interventions

Table 11

Six Lowest Occupational Therapy Interventions Offered and their Frequency

[refer to Table 7 for legend]

Ranking	Intervention	Type	n_1	f_y	$\%_y$	Frequency	n_2	f_2	$\%_2$
1	Environ. Mod.	Direct	28	8	28.6%	Rarely	15	7	46.7%
2	SI	Direct	28	17	60.7%	Frequently	21	7	33.3%
3	Positioning	Direct	29	21	72.4%	Frequently	20	9	45.0%
4	Consult to Staff	Indirect	25	19	76.0%	Sometimes	20	10	50.0%
5	LE Splinting	Direct	26	20	76.9%	Sometimes	20	10	50.0%
6	ROM	Direct	28	22	78.6%	Frequently	22	9	40.9%

intervention was requested with a frequency of "sometimes." The only one of the five highest treatment interventions indicated by therapists as "always" requested was parent education--82.8% of participants indicated it was requested, with 36% indicating it was "always" requested by physicians when ordering occupational therapy treatment.

Table 11 reveals some interesting points regarding the lowest ranked occupational therapy interventions requested and their frequency of requests. The literature indicated that interventions such as environmental modification have not had as much acceptance as those more "traditional" occupational therapy treatment interventions listed above. The data appears to support this statement: for example, only 28.6% of participants indicated that environmental modification is specifically requested by physicians, and 46.7% of participants indicated it is "rarely" requested when occupational therapy is ordered. The other interventions listed (sensorimotor intervention, consultation to staff, positioning, range of motion, and lower extremity splinting) are either not as well known or traditionally accepted as falling within the realm of occupational therapy practice. The perceived non-traditional nature of these treatment interventions may have been a factor in their ranking by participants during completion of the survey/questionnaire.

Occupational Therapy Practice Issues in Neonatal Intensive Care

Participants were also given a list of statements pertaining to a number of issues dealing with occupational therapy NIC program development and practice. All participants were given the opportunity to indicate their opinion of each statement based upon their own experience with NIC program planning and implementation. Results have been recorded in the form of histograms, one per each statement listed in order to visually present and compare differences in the data obtained (see figures 4-12).

The majority of participants--28.8, or 96.6%--responded to each statement presented. This impressive response rate reflects the high caliber of professionals comprising the subject population analyzed in this study. Participants may have felt strongly about the issues raised in each statement to take the time and respond in a thoughtful and reflective manner.

There appears to be a wide spread of opinions on the statements presented to participants. Participants appeared evenly divided about the statements dealing with being unable to provide the entire scope of occupational therapy services in the NIC setting (see figure 7), as well as what they are allowed to do in the NIC setting not being the same as what they have the potential to offer as OTRs (see figure 8).

Over half of the participants, or 58.6%, indicated that achieving acceptance in the NIC setting has been difficult (see figure 4). The majority of participants agreed

that their role in the NIC setting is influenced by professionals already established there (see figure 10). In addition, political factors also appear to play a role in occupational therapy program planning and implementation in the NIC setting (see figure 9).

A greater majority of participants agreed that their experience with program development had been accomplished utilizing informal resources [86.2%] as opposed to formal resources [71.5%] (see figures 11 and 12).

Participants seemed to disagree with only two of the statements presented in this section of the NIC survey/questionnaire form. Figure 5 indicates that 65.5% of participants disagreed with the statement dealing with having to constantly educate professionals on the value of occupational therapy in the NIC setting.

The results obtained from this section of the NIC survey/questionnaire form appear to indicate that achieving acceptance has indeed been difficult for occupational therapists in the NIC setting; the difficulties appear to be related to political factors, as well as to professional groups already established there despite the disagreements noted in the preceding paragraph. In addition, more participants agreed that the majority of occupational therapy program development in the NIC setting has been accomplished utilizing informal resources. These trends appear to substantiate the literature reviewed which indicates that occupational therapists are constantly justifying the validity of their role in the NIC setting as health care technology continues to escalate in terms of cost and manpower.

Figure 4. Opinion: "Achieving acceptance in the NIC setting has been difficult."

[$n = 29$]

Figure 5. Opinion: "NIC Professionals question the value of Occupational Therapy in this setting."

[n = 29]

Figure 6. Opinion: "I find myself having to constantly educate NIC professionals on the value of occupational therapy in this setting."

[n = 29]

Figure 7. Opinion: "I feel unable to provide the entire scope of occupational therapy services available to the NIC population in this setting."

[$n = 29$]

Figure 8. Opinion: "What I am allowed to do in the NIC setting is not the same as what I have the potential to offer as an OTR."

[$n = 29$]

Figure 9. Opinion: "What I am allowed to do as an OTR in the NIC setting is influenced by political factors."

[n = 29]

Figure 10. Opinion: "What I am allowed to do as an OTR in the NIC setting is influenced by professionals already established there."

[$n = 29$]

Figure 11. Opinion: "The majority of occupational therapy program development in the NIC setting has been accomplished using formal resources."

[n = 28]

Figure 12. Opinion: "The majority of occupational therapy program development in the NIC setting has been accomplished using informal resources."

[n = 29]

The majority of participants also had definite opinions regarding the specific practice issues addressed: role delineation, scope of practice, and training and competency guidelines. Table 12 reveals that all 29 participants responded to this section of the survey/questionnaire form. When given the opportunity to indicate which standards should be established for nationwide NIC practice, 75.9% of participants believed that nationally recognized guidelines for training and competency should be established. Though a high percentage of participants also indicated that both role delineation [with 44.8% indicating "yes"] and scope of practice guidelines [with 62.1% indicating "yes"] should also be established, training and competency guidelines clearly take precedence in terms of overall importance. This result may indeed be reflective of what is really most important in this era of cost-consciousness and justification of treatment effectiveness in health care. In order to be accepted as valid members of the NIC treatment team, it appears that what is most immediately desired are occupational therapists who possess a strong clinical and theoretical practice base--"professionals" who can translate their particular knowledge base into quality patient care, thus earning the respect of other professional groups involved.

When asked if any of the above standards would have made a difference in their particular experience with program development and achieving acceptance in their NIC setting, surprising results were achieved in light of the responses previously given. Table 12 indicates that only 5, or 17.2%, of the participants agreed that their NIC experience would have been different if such nationwide standards of practice

Table 12

Occupational Therapy Intervention in the NIC Setting: Practice Issues

Practice Issue	<u>n</u>	Response					
		<u>f_y</u>	Yes %age	<u>f_n</u>	No %age	<u>f_u</u>	Undecided %age
Role Delineation	29	13	44.8%	11	37.9%	5	17.2%
Scope of Practice	29	18	62.1%	9	31.0%	2	6.9%
Guidelines for Training/ Competency	29	22	75.9%	2	6.9%	5	17.2%
Would any of the above have made a difference in participants' NIC experience?	29	5	17.2%	13	44.8%	11	37.9%

LEGEND.

n = 29 for all responses, thus %age = valid percent

f_y = frequency of "Yes" responses

f_n = frequency of "No" responses

f_u = frequency of "Undecided" responses

would have been in effect. This means that 24, or 82.7%, of the participants either did not agree or were undecided about whether such nationwide standards of practice would have made any difference in their NIC experience at all. Could this result be reflective of how territorial the practice area of neonatal intensive care has become? The literature reviewed also appears to indicate that politics in the hospital setting possibly plays an important role in how accepted occupational therapists are in such a specialized setting. The above results may indeed support this unfortunate reality for occupational therapists practicing in NIC settings today.

Qualitative Data Analysis

All qualitative data generated from the open-ended questions of the NIC survey/questionnaire were summarized into 5 areas without statistical analysis. The areas are: (1) reasons for perceived quality of care in the NIC setting; (2) professional and educational preparation of participants for NIC delivery of care; (3) perception of role; (4) what more should be developed and desired by occupational therapists in the practice area of neonatal intensive care; and (5) any advice offered for occupational therapists entering this specialty area of practice. The most common responses were grouped together and summarized for the following analysis and discussion.

Quality of Care in the NIC Setting

As previously mentioned, the majority of participants felt that their NIC setting provided a high quality of care to the NIC infant population. Many participants attributed the high quality of care to the high skill level of nursing and medical staffs, with 24.1% of participants indicating this in the open-ended response provided on the NIC survey/questionnaire form. Other participants felt that the highly sophisticated technology and state-of-the-art techniques contributed to the quality of care provided in their NIC settings, with 17.24% of the participants indicating this in their open-ended response.

Individual responses also indicated low nursing turnover and a perceived "excellence" regarding parent communication and education as important factors contributing to the overall quality of care in each NIC setting described. One participant attributed the high quality of care in her NIC setting to the willingness from NIC staff to "learn from and share with the occupational therapists."

Though the majority of participants provided favorable reasons for their perceived quality of care being offered in their NIC setting, some participants felt that certain factors prevented the highest quality of care from being offered in their NIC setting. One participant felt that due to the "acute" nature of the NIC setting, the environmental, behavioral, and developmental needs of the population are often overlooked or ignored given the "life or death" issues that obviously take precedence

on a routine basis.

Some participants voiced concerns opposite those who provided favorable responses for quality of care. These participants felt that more support from their neonatologist would improve their professional situation. Poor communication and follow-through with nursing reflect issues of territoriality for other participants which affect the overall quality of care that is provided in their NIC setting. Still others indicated that a high staff turnover given the stressful environment did indeed affect the quality of care provided in the NIC setting.

Participants' Professional and Educational Preparation

When asked about the professional and educational preparation completed by participants for practice in the NIC setting, a wide variety of responses were provided. Each participant indicated their own specific agenda that was completed before providing occupational therapy services to the NIC population--an important point reflecting the great need for nationwide standards of competency and training guidelines for NIC delivery of care.

Many participants indicated completion of the Neurodevelopmental Treatment [NDT] course as part of their specific preparation for NIC practice; participants who were NDT certified indicated completion of the NDT "baby course" as well. Many indicated completion of a wide range of continuing education courses ranging from

developmental and high-risk infant conferences, to the Brazelton infant developmental workshops. One participant indicated that 3 out of 5 staff members in her department were certified in administration of the Brazelton developmental assessment. The majority of participants also indicated attendance at oral-motor conferences.

Some participants indicated completion of specific training courses prior to professional practice in the NIC setting, including the Neonatal Individualized Developmental Care and Assessment Plan [NIDCAP] training with Als; still others completed a 2 and 1/2 day training in NIC/high-risk infant care with Wilburger.

Informal methods of educational and professional preparation by participants were also mentioned: some participants conducted literature searches in order to build upon their knowledge base prior to NIC practice; others mentioned networking, as well as developing a relationship with a mentor in order to obtain professional guidance and support.

Two participants also indicated actual "hands-on training" as part of their professional training for NIC practice. One indicated work in an "infant transitional unit" in order to increase her competency and skill level prior to working in an actual NIC setting. Another indicated having completed an optional clinical internship as part of her graduate educational program in occupational therapy.

As can be seen from the above descriptions, a wide variety of options exist for occupational therapists to prepare themselves for professional practice in the NIC setting. Not every option seems to be taken advantage of given the lack of a uniform

standard of competency and basic educational preparation for occupational therapists considering neonatal intensive care as a specialty area of practice.

Perception of Role

When participants were given the opportunity to indicate what the perception of their role as part of their NIC treatment team is, a wide variety of individualized responses was once again obtained. Most participants did indicate their role as occupational therapists in the NIC setting encompasses a myriad of functions: as "educator" to staff and parents on positioning, handling, orthotics, developmental issues, and oral-motor concerns; as "consultant" for the identification of developmental risk factors requiring intervention; as patient/parent "advocate" to provide caregivers with an understanding of the need for direct intervention to minimize problems later on.

Participants also perceive themselves as direct caregivers in the following areas: (1) oral-motor intervention to increase nipple skills for the enhancement of feeding; (2) splinting as indicated or needed; and (3) provision of environmental modification to decrease abnormal sensory stimulation in order to promote more efficient adaptive responses.

Unfortunately not all of participants' responses regarding perception of role are favorable in nature. Some participants do not yet consider themselves part of a

"team" given the "medical" nature of the NIC setting. Others consider themselves "respected by some" (e.g., nurses, program directors) and "not understood by others" (e.g., neonatologists, residents, housestaff).

What More Should Be Developed/Desired?

Participants provided very detailed responses when asked what they would like to see developed by the profession to make program development and practice in the NIC setting more accepted and respected by fellow NIC professionals. The fact that every participant responded in some fashion to the question posed attributed to the importance of occupational therapists achieving acceptance in the NIC setting if occupational therapy is to be considered a valid and important component of NIC delivery of care.

Many participants indicated in their own fashion that research on efficacy issues is desperately needed; three areas targeted were (a) research studies geared to physicians and those who do not "understand" the purpose of occupational therapy, (b) research studies with exposure not only in journals dedicated to occupational therapy but in physician-oriented journals as well, and (c) research dedicated to justifying the role of occupational therapy quantitatively for physicians and health professionals alike to better understand.

Many participants emphatically stressed the importance of having previous

experience with general pediatrics as an established prerequisite for NIC practice by the profession. In addition, increased educational preparation in neonatal intensive care as a specialty area of occupational therapy practice in school is also believed as necessary and should be mandated by the profession. For therapists already working in this specialty area of practice, participants indicated increasing the variety of continuing education opportunities to keep specialists abreast of the latest trends in treatment intervention. One participant indicated she would like to see the establishment of a yearly symposium in neonatal intensive care in order to increase networking between professionals involved in this specialty area of practice.

A number of participants also indicated their desire to see a special interest group established by AOTA specifically geared to neonatal intensive care practice, perhaps as a subdivision of the developmental disabilities special interest group already in existence. Had a special interest group already been available to occupational therapists at the time of this study, tracking of potential participants could most likely have been more successful for the principle investigator.

Although the majority of the participants indicated a desire for the development of practice and training and competency standards to assure uniform quality service provision in the NIC setting, many indicated that standards are not necessarily enough. Many participants believe that occupational therapy is viewed as a "low priority" in the NIC setting. With the astronomical costs characteristic of the sophisticated technology involved in NIC delivery of care, the problem of lack of

acceptance is actually economic in nature. What is therefore desired by participants who hold this view is research geared towards justification of occupational therapy services and cost-effectiveness issues for all NIC professionals to be exposed to.

Advice For Therapists Entering This Specialty Area?

Participants were also extremely opinionated regarding advice for occupational therapists considering program development in the NIC setting. The majority of therapists emphasized attitude as well as approach with fellow NIC professionals. Participants indicated that future specialists should look at their potential role and their contribution within the context of the pre-existing structure and politics of the NIC setting in order to be perceived as less threatening and not "taking away from others' roles." Many also believed that starting in non-threatening areas, such as working on parent education in conjunction with nursing, and expanding slowly would foster gradual acceptance and support from fellow NIC professionals as well. Yet the majority stressed that an unending supply of PATIENCE is required given the fact that occupational therapists will have to constantly justify their role as they proceed with NIC program development and delivery of care.

Many participants also provided valuable advice regarding concrete actions for future NIC specialists to take prior to program planning and implementation:

(a) becoming knowledgeable regarding all the sophisticated technology involved;

(b) conducting a thorough literature review for research studies to support occupational therapy intervention in the NIC setting, specifically targeting cost-effectiveness issues and referral criteria; (c) visiting other NIC settings and networking with other occupational therapists for support; (d) having a mentor as a role model to aspire to; (e) developing a library of standardized evaluations for reference and utilization; and (f) developing strong communication skills as well as self-confidence in interactions with fellow NIC professionals.

Participants also indicated having a solid educational foundation before providing occupational therapy services in the NIC setting. The majority stressed having a strong pediatric base, as well as developing competencies in the "basics"--the Brazelton states, administration of the NIDCAP assessment, premature development, oral-motor development, as well as normal and abnormal infant and toddler development.

Most importantly, many participants stressed the importance of being open-minded, adaptable, and aware of one's own limitations when considering occupational therapy program planning and implementation in the NIC setting. Each NIC setting is individualized in terms of structure, politics, and roles, and change will not happen as quickly as desired. As one participant so eloquently stated: "leave your ego at the door and be willing to work with other professionals in an open fashion, and adapt as needed." This may not be so difficult given that the roots of the profession lie in fostering adaptation in patients and clients.

Research Questions Answered

1. What is the perception of the role of occupational therapy in Neonatal Intensive Care [NIC] settings as identified by occupational therapists currently involved in NIC program planning and implementation?

The majority of participants view their role in the NIC setting as one of "general consultant" in a variety of areas: parent education and advocacy, developmental issues, and staff education regarding developmental risk factors. Participants viewed themselves as most often providing direct intervention in the following areas: upper extremity splinting, oral-motor/feeding, follow-up services, and adaptive equipment and orthotic assessment. Some participants also stated that they do not yet consider themselves part of a "team" in the NIC setting given the medical nature of the service and the life-and-death issues that predominate over delivery of care to this high-risk infant population. Others feel respected for their contribution by nursing and program directors, while not being understood by neonatologists, house staff, and residents.

2. What specific direct and indirect services are currently provided by occupational therapists working in NIC settings?

The following list indicates those direct and indirect occupational therapy interventions provided by participants in their NIC settings; it incorporates

those specific interventions presented to participants in questions 17 and 18 of the NIC survey/questionnaire form (Appendix D):

DIRECT SERVICES

- A. Positioning
- B. Range of Motion [ROM]
- C. Environmental Modification
- D. Sensory Integration [SI]
- E. Splinting
 - Upper Extremity Splinting
 - Lower Extremity Splinting
- F. Oral-Motor Intervention
- G. Parent Education
- H. Adaptive Equipment Needs

INDIRECT SERVICE

- A. Consultation to NIC staff
- B. Follow-up services

3. What specific direct and indirect services do occupational therapists working in Neonatal Intensive Care [NIC] settings believe they have the skills to offer, in addition to those currently provided?

Participants believe they have the skills to offer all of the interventions presented in questions 17 and 18 of the NIC survey/questionnaire form. In addition, they were given the opportunity to provide information on "other" direct and indirect interventions not covered in these questions. The following list incorporates these "other" interventions obtained from Tables 8 and 9; it is presented as a profile of the potential repertoire of participants' comprehensive occupational therapy practice in

their NIC settings:

"OTHER" DIRECT SERVICES

- A. Handling to modify tone and facilitate movement
- B. Occupational therapy consultation/referral
 - for all infants under 35 weeks
- C. Baseline developmental assessment and treatment
- D. Discharge evaluation for parent education
 - Brazelton or Gesell, depending on age of infant at discharge
- E. Administration of NIDCAP during parent-infant feeding sessions

"OTHER" INDIRECT SERVICES

- A. Provide inservices to NIC staff
- B. Assist with discharge planning
- C. Refer to Infant Development Programs [IDP] when appropriate
- D. Bayley out-patient follow-up
- E. Development of NIC support programs
 - e.g., team rounds/discussions

"OTHER" SERVICES

- A. Consultation to NIC follow-up clinic
- B. Inservices to nursing, other NIC staff on occupational therapy interventions
- C. New staff orientation on occupational therapy intervention
- D. Consultation to home health programs

4. Do any discrepancies exist between those direct and indirect services currently provided by occupational therapists in Neonatal Intensive Care [NIC] settings and those perceived as potential areas of service delivery?

Discrepancies do exist between those direct and indirect services currently provided as well as potential areas of service delivery to the NIC population as

indicated by their individual frequencies of requests by NIC physicians. Certain interventions such as parent education and oral-motor intervention are "always" or "frequently" provided as requested; others such as environmental modification and adaptive equipment assessment are rarely specifically requested and not provided with similar frequency. It is interesting to note that participants indicated NIC physicians in their settings tended to write "blanket referrals" for occupational therapy intervention, thus leaving the assessment and determination of appropriate treatment as the responsibility of the occupational therapist. This tendency may be contributing to the differences noted between NIC occupational therapy program development and implementation in individual settings.

5. What are the obstacles identified by occupational therapists working in Neonatal Intensive Care [NIC] settings which are perceived to contribute to discrepancies between potential and actual areas of service delivery?

The majority of participants indicated that there are 3 major factors responsible for the discrepancies between potential and actual areas of service delivery in neonatal intensive care. The factors responsible for affecting the role of the occupational therapist in this setting appear to be (a) hospital politics/administration, or those who question the cost-effectiveness of such service provision to this patient population, (b) professional groups already established in the NIC health delivery model who question the validity of occupational therapy intervention, and (c) the lack of

formalized resources for occupational therapists to utilize as guides for NIC program planning and implementation.

CHAPTER 5

DISCUSSION AND IMPLICATIONS FOR THE PROFESSION

Generalization of this study to a wider professional population is limited primarily due to methodology and size of sample. A survey/questionnaire format was used to gather information on delivery of care in the neonatal intensive care setting. The national sample was comprised of 29 occupational therapists who specialize in NIC program planning and implementation. This low response rate was, in part, due to the lack of a formal tracking system for these specialized clinicians by the American Occupational Therapy Association, Inc. [AOTA]. Data obtained, however, appeared to reflect the recent literature describing the current status of occupational therapy practice in neonatal intensive care.

Occupational therapy in neonatal intensive care has been targeted as a preeminent specialty area of practice for the current decade (Fox, 1991). As medical technology grows increasingly capable of sustaining the lives of smaller and sicker newborns who are significantly medically and neurologically compromised, occupational therapists have become increasingly visible in NIC settings across the country. Since neonatal intensive care is a relatively recent specialty area of practice for occupational therapy, it appears to have been individualized in each setting without the benefit of role delineation, training guidelines, or standards of practice for

the occupational therapist to refer to. In light of this lack of formal support, the occupational therapy professional who currently specializes in NIC delivery of care must possess a keen sense of self-confidence given the obstacles which they must constantly face in their work. These professionals are considered "pioneers" in their field; as Fox (1991) stated: "therapists who pioneer the provision of OT services on a neonatal unit shoulder a weighty responsibility." Gorga (in Fox, 1991) has indicated that the future of occupational therapy in the NIC setting will depend largely on the way these "pioneers" implement their services and interact with other health care professionals there.

All of the 29 participants in the final sample were women. None of the literature reviewed regarding practice trends in NIC delivery of care discussed men as being involved to any degree. It would be inaccurate to assume that women occupational therapists are exclusively involved in NIC practice based on such a small sample, but it seems apparent from the data collected that, like most practice areas in occupational therapy, women comprise the majority of clinicians in the NIC setting.

When all of the demographic information is taken into consideration, the sample obtained appears to be a highly skilled and experienced group of clinicians dedicated to the provision of quality occupational therapy services in the NIC setting. Though small in number, this sample confirmed the literature that reported the need for occupational therapists involved in NIC practice to possess a broad and extensive knowledge base and a highly specialized competency level in order to deliver care of

the highest quality possible to such a medically fragile patient population. Yet this sample also reflected the isolation which occupational therapists in this area of practice have encountered without the benefit of formal resources to guide NIC program development or a specialized mechanism to identify and communicate with fellow professionals nationwide.

Recent attempts by the AOTA to address this issue by development of a task force designed to determine specific roles and functions of occupational therapy in neonatal care could begin addressing such tracking issues as well. Fox (1991) reported that the AOTA Task Force on Neonatal Care met for the first time in July, 1991 to begin its work in determining roles and functions on a national scale. A position paper addressing knowledge and skill level for occupational therapists who specialize in neonatal intensive care is due to be drafted by the five-member task force by June 30, 1992, with presentation to the Representative Assembly for adoption targeted for 1993. It would be of great benefit to all professionals specializing in neonatal care if the task force can also provide an effective system to identify and track the occupational therapists who are practicing in this emerging specialty area, one which occupational therapists could utilize to share their valuable input and clinical experiences with one another.

The issue of role delineation and scope of practice and training is both an education and practice consideration. The occupational therapists who participated in this study appear to possess a keen awareness of the true nature of health care today.

The issue appears more related to one of cost-efficiency. How could occupational therapy intervention in the NIC setting contribute to decreased hospitalization times, as well as serve to minimize the developmental implications that result from neurological insults and/or the cost of specialized interventions designed to maintain the viability of premature infants? It appears to be the consensus of the participants in this study that if the occupational therapy profession could justify its contribution to the neonatal intensive care population from a cost-effectiveness perspective, then occupational therapy would have the potential to earn a position on the neonatal intensive care delivery team with great admiration and respect.

This study revealed that discrepancies exist between the current role of occupational therapists in neonatal intensive care practice and the potential care that they can offer to a medically fragile infant population. The discrepancies appear to be a result of three major issues identified through this study: (a) political factors, (b) lack of more formal resources for occupational therapists to take advantage of during NIC program planning and implementation, and (c) professional groups already established on the NIC treatment team who question the purpose and validity of occupational therapy intervention.

Political Factors

Political factors appear to be the major issue related to cost-effectiveness and justification of service provision for occupational therapists on the NIC treatment

team. Participants in this study have reiterated in numerous ways that an acceptance of occupational therapy as an important component of NIC delivery of care cannot occur without the support of the hospital setting's administration. Yet participants appear to be realistic in their view that hospital administrators' agendas and long term concerns are historically embedded, as well as economically and financially driven. This cannot be expected to change overnight. Occupational therapists who dedicate themselves to the specialty area of neonatal intensive care need to possess an inordinate amount of diligence in order to begin to make gradual changes in the perceptions of hospital administrators. Administrators need to know that occupational therapists can have a positive financial effect related to decreasing the cost of NIC hospitalization by contributing to decreased length of stay before full support can be achieved. This can occur via quantitative research.

Lack of Formal Resources

A lack of formal resources appears to be yet another factor which has contributed to a discrepancy between the potential role and actual role of occupational therapists who specialize in neonatal intensive care practice. This study revealed that occupational therapists have primarily taken advantage of informal resources in terms of available literature, continuing education opportunities, as well as professional networking in order to develop their particular services and programs in the NIC setting.

Professionals Questioning Occupational Therapy's

Purpose and Treatment Validity

Occupational therapists in NIC practice today have not established specific standards of practice from which to develop consistent and uniform service provision across the country. When such a standard of practice is available to occupational therapists nationwide, as should occur from the work of the AOTA Task Force on Neonatal Care, those specializing in NIC practice can begin to "bridge the gap" between potential and actual role and scope of practice. Occupational therapists who specialize in neonatal intensive care would have sound and appropriate guides for clinical practice, and an outline of the areas of knowledge which would serve as prerequisites for new therapists entering this specialty area. Care of the highest quality possible could be provided to the NIC population and ensured. Occupational therapists could perhaps take their place among the other members of the NIC treatment team who already are established, recognized, and accepted.

The issue of professionals questioning occupational therapy's purpose and treatment validity appears to be historically rooted. Most clearly visible from the data obtained is the notion that those professionals who have been traditionally perceived to be at the forefront of NIC delivery of care [NIC MDs, neonatologists, residents, NIC nurses, administrators] were thought of as most "often" open and supportive of occupational therapy in this setting. In contrast, the other professional groups

considered to be "allied health professionals" [i.e., other therapists, NIC social workers, "others"] were perceived to be "always" open or supportive. Several possibilities exist regarding the reasons why this tendency was suggested in the data. Other allied health professionals may also have experienced resistance in gaining acceptance from the traditional professional groups in the NIC setting. Such groups may, therefore, be able to relate to the experiences of occupational therapy, and thus offer a level of supportiveness through identification of their own particular experiences. Further, in this era of cost-consciousness in the health care industry, traditional professional groups have already justified the validity of their particular contributions and gained acceptance as valued components of the NIC health delivery model. The emergence of a new professional contribution, such as occupational therapy, might be perceived as a "lower priority" when compared to those professional groups already established in the forefront of NIC delivery of care who address more pertinent "life or death" issues every minute. Occupational therapy may not be perceived as a valued and important adjunct of the NIC infant's comprehensive program of direct care.

It appears that this questioning of occupational therapy's purpose and treatment validity from other professional groups is clearly related to a lack of knowledge of occupational therapy's basic tenets and principles as applied to the NIC patient population. A vague understanding of occupational therapy's purpose and treatment validity may perhaps be as prevalent as indicated in the literature reviewed (Hyde,

1987). It may have also contributed to the pattern of responses in the data collected in this study. The lack of clear understanding of the role and purpose of occupational therapy is one which can be easily rectified. It would be in the profession's best interest to make education of other NIC specialists regarding occupational therapy's purpose and contribution a top priority. It is only via education that established NIC professional groups will be able to shed their preconceptions of occupational therapists as a lower priority in NIC delivery of care, and begin to view occupational therapy as having its own unique contribution to make in the neonatal intensive care setting.

Implications for the Profession

Given the discrepancies found between occupational therapists' actual role and potential role in the neonatal intensive care setting, it becomes apparent that the role of the occupational therapist is more of a "generalist," or consultant in nature when working with the NIC patient population. Opportunities for direct service provision exist, but in light of the obstacles encountered by participants in this study, it appears that occupational therapists need to educate themselves in a vast number of treatment areas in order to be considered valuable and productive members of the NIC treatment team. Occupational therapists who specialized in neonatal intensive care identified the need to possess a highly competent educational background and thorough clinical skills. It appeared that current educational preparation offered in entry-level occupational therapy academic programs may not be sufficient to provide

occupational therapists with the knowledge base to provide competent services of the highest skill level to the NIC patient population. Occupational therapists need to possess a solid theoretical as well as clinical base in pediatric practice, with an emphasis on normal and abnormal development, prior to attempting service provision in the NIC setting. Specialist preparation in pediatrics with specific emphasis in neonatology coupled with appropriate fieldwork experience may be needed to gain the respect of fellow NIC colleagues in practice.

This emphasis on training and education is substantiated by participants' opinions obtained in this study. Although participants indicate that nationwide standards of practice as well as role delineation are needed to ensure the continued viability of occupational therapy's contribution to the NIC patient population, they tended to place more emphasis on uniform guidelines for training and competency. Given the importance placed on cost-consciousness in the health care industry today, guidelines for training and competency levels may serve the profession more invaluablely in terms of justifying its contribution to other professional groups as well as to hospital administrators. The AOTA Task Force on Neonatal Care (Fox, 1991; Saltz, 1991a) will hopefully address this issue by formally determining the knowledge base and training required for occupational therapists considering specialization in the NIC setting in the future.

Perhaps the most important concern when considering parameters related to role delineation and scope of practice guidelines for occupational therapy in the NIC

setting is related to determining appropriateness of initiating service provision to this fragile patient population. Uniform standards of practice should incorporate guidelines for appropriate time and gestational age for occupational therapy intervention to begin. Establishment of these guidelines could be addressed via quantitative research. This is an issue of significant importance which should be addressed by the AOTA task force if a comprehensive position paper outlining role delineation, scope of practice, as well as training and competency guidelines is to be accepted and implemented by the occupational therapy profession in neonatal intensive care practice.

Summary

This study has investigated the perceived role and scope of occupational therapy practice in neonatal intensive care as compared to the role and scope of practice as it currently exists. It has also identified obstacles which have prevented occupational therapists from being accepted as valid members of the NIC treatment team. Participants who have made this study's completion a reality have provided invaluable information through their professional perspective regarding what would be needed for occupational therapy to become considered a truly valuable and respected component of neonatal intensive care service delivery. With the advances being made by the AOTA Task Force on neonatal care (Fox, 1991), intervention of the highest quality possible for the NIC patient population could become a reality by dedicated

occupational therapy clinicians nationwide. Yet more research is needed in order to substantiate the belief that a thorough delineation of role, scope of practice, and training and competency levels can indeed make a difference in the lives of those fragile infants which occupational therapists serve in neonatal intensive care.

Recommendations for further research include an in-depth study of the role of occupational therapy in neonatal intensive care practice with a greater sample than obtained in this study in order to gain a more unified and accurate perception of clinicians' opinions in practice. Quantitative studies geared at examining the effectiveness of specific treatment interventions could, as stated by the participants in this study, begin to change the perceptions of those established NIC professional groups at the forefront of NIC delivery of care. Qualitative research designed to investigate elements essential to formulation of a comprehensive program of education for other professional groups might also benefit occupational therapists who are involved in program development and implementation. Once such a nationwide program of education was made available to therapists who specialize in NIC delivery of care, it would be of great interest to assess its degree of effectiveness in measureable terms via comparing occupational therapists who utilize such a resource in their practice versus those who do not. In addition, survey-designed research studies geared towards obtaining opinions on elements crucial to a comprehensive scope of practice, as well as specific standards for appropriate training and competency levels, could also serve the AOTA Task Force in accomplishing its goals

of developing national guidelines for the profession vital to comprehensive and respected occupational therapy practice in neonatal intensive care.

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APPENDICES

Appendix A

Introductory Letter for Potential Participants

**CHILDREN'S HOSPITAL
OF SAN FRANCISCO**
A subsidiary of Northern California Health Center

SANDRA CICUTTIN, O.T.R.
*Occupational Therapist
Department of Occupational Therapy
(415) 750-6485*

3326 Divisadero Street
San Francisco, CA 94123-1906
January 31, 1990

1700 CALIFORNIA ST • SAN FRANCISCO, CA 94118 • 415/387-8700

Dear Occupational Therapy Colleague:

My name is Sandra Cicuttin. I am an occupational therapist at Children's Hospital of San Francisco, as well as a graduate student enrolled in the Department of Occupational Therapy at San Jose State University, San Jose, CA. To partially fulfill requirements for the Master's degree, I am conducting a study of the perceived role of occupational therapists practicing in the neonatal intensive care (NIC) setting, as compared to their actual practice in this setting.

An additional purpose of this study will be to determine the obstacles, if any, that occupational therapists believe are preventing them from being able to provide the variety of services they perceive as integral to their role in this specialty area of practice.

Given your dedication to this specialized practice area I am certain you feel as I do. Occupational therapists need to take action and explore the status of their role in the NIC setting if we are to be considered a valid component of NIC practice. But it can only begin with small steps, and clinical investigative minds...together!

As a member of AOTA in pediatric practice I would like to invite you to consider being a part of this study. If you would like to participate you will be mailed a consent form to sign, and a questionnaire to complete. Information will be requested on (A) your experiences with NIC program planning and implementation, as well as (B) your opinions on various practice issues pertinent to occupational therapy in this setting. The questionnaire should take no longer than 20 minutes to complete, and all information obtained will be strictly confidential.

Enclosed you will find a response form, along with a self-addressed, stamped envelope which you can use to indicate your willingness to participate in this study. If you would like to receive additional information on this study, I will be more than happy to contact you at your convenience. I can be reached at 3326 Divisadero Street, San Francisco, CA, 94123-1906. My phone number is (415) 922-4692. My business card is also provided should you desire to contact me during normal business hours. Your time and consideration are greatly appreciated.

I look forward to hearing from you soon.

Sincerely,

Sandra A. Cicuttin, OTR

SC/enc

Appendix B

Response Form for Neonatal Intensive Care Study*

*** (Adapted from Leedy, 1974, p.84.)**

H11-L12-6-176

NIC STUDY RESPONSE FORM

DATE _____

CHECK ONE:

Miss Cicuttin:

☐ I am interested in participating in the NIC study you have described.
Please send me the appropriate consent form I am required to sign
as well as the questionnaire.

☐ I would like some additional information prior to considering taking
part in the study.

Please call ☐ me at (Area Code) _____ (Number) _____
(Hours to call) _____

Contact me ☐ by mail:
(Address) _____

☐ No, I do not wish to participate at this time.
(Please give your reasons in the section below.)

☐ I am not involved in this specialty area of practice.

COMMENTS OR QUESTIONS_____
Signature

Your response is greatly appreciated.

Sandra A. Cicuttin, OTR

Appendix C

Neonatal Intensive Care Study Consent Form*

*** (Modeled after Sample Consent Form distributed in Course Packet 1, Health Professions 295, "Research Design and Methodology," Fall Semester, 1986, San Jose State University.)**

A campus of The California State University

School of Applied Arts and Sciences • Department of Occupational Therapy
One Washington Square • San José, California 95192-0059 • Main Office 408/924-3070 • Fieldwork Office: 408/924-3078

H11-L12-6-176

NEONATAL INTENSIVE CARE STUDY CONSENT FORM

You are invited to participate in a study of the role and scope of occupational therapy practice in the Neonatal Intensive Care (NIC) setting.

As a graduate student in occupational therapy at San Jose State University, San Jose, CA, I am conducting a research study to examine the perceived role of registered occupational therapists (OTRs) in the NIC setting, versus their actual role and extent of involvement. This study will also investigate possible obstacles which may be preventing OTRs from being able to provide the variety of services they are qualified to offer in such a relatively recent specialty area of pediatric practice. Your name has been obtained from the Direct Mail Service of the American Occupational Therapy Association, Inc. (AOTA); you have been selected as a possible participant in this study since you have been involved with NIC program planning and/or implementation in your occupational therapy career.

If you do decide to participate, you will be required to complete a written questionnaire designed to provide a detailed description of your experience with NIC program development and clinical practice. The questionnaire will contain both close-ended questions as well as open-ended questions, and should take no longer than 20 minutes to complete. No identified discomforts should result from your participation aside from any inconvenience in taking the time to complete the questionnaire, as well as any discomfort with what might be perceived as a sensitive issue -- your experience with NIC program development. Possible benefits might include gaining a deeper understanding of obstacles preventing you from offering comprehensive services in the NIC setting, and encouraging you to consider networking with OTRs in other NIC settings. I cannot and do not guarantee that you will receive any benefits from this study.

Any information that is obtained in connection with this study that can be traced to or identified with you will remain confidential and will be disclosed only with your permission or as required by law. If your permission is given by your signature on this document, data you will be able to provide will be utilized in the preparation of a Master's Thesis on the study which will be presented to the faculty of the Department of Occupational Therapy, San Jose State University, in partial fulfillment of the MS degree program in which I am currently enrolled.

A campus of The California State University

School of Applied Arts and Sciences • Department of Occupational Therapy
One Washington Square • San José, California 95192-0059 • Main Office 408/924-3070 • Fieldwork Office 408/924-3078

Your decision whether or not to participate in this study will not jeopardize any future relationship you may have with San Jose State University. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without penalty.

If you have questions at any time, I will be most happy to contact you personally. I can be reached care of the Occupational Therapy Department of Children's Hospital of San Francisco, 3700 California Street, San Francisco, CA, 94118; phone (415) 750-6485, or (415) 387-8700, beeper 419 (8:00am - 4:30pm, Pacific Standard Time). I can also be reached at 3326 Divisadero Street, San Francisco, CA, 94123; phone (415) 922-4692 (after 6:00pm, PST).

Should you have any additional questions regarding the nature of this study, you are free to contact my major advisor in the Department of Occupational Therapy at San Jose State University: Lela A. Llorens, Ph.D., OTR/L, FAOTA; daytime phone (408) 924-3072, or Serena Stanford, Ph.D., Associate Academic Vice President for Graduate Studies at (408) 924-2480.

Although you will not receive any financial compensation from your participation in this study you will be provided with a copy of the results of this study at your request.

You will also be provided with a copy of this document to keep for your records at your request.

CHECK THE BOX IF YOU WOULD LIKE A COPY OF THIS CONSENT FORM: (☐)

YOU ARE MAKING A DECISION WHETHER OR NOT TO PARTICIPATE IN THIS STUDY. YOUR SIGNATURE INDICATES THAT YOU HAVE DECIDED TO PARTICIPATE HAVING REVIEWED THE INFORMATION PROVIDED ABOVE.

DATE

Signature of Participant

Signature of Witness/
Relation to Participant

Signature of Investigator/DATE

Appendix D

NIC Survey/Questionnaire Form*

*** (Consulted Adams & Schvaneveldt, 1985; Andrews & Hildebrand, 1976; Babbie, 1973; and Leedy, 1974 for construction of this survey/questionnaire.)**

SANDRA CICCUTTIN, O.T.R.
Occupational Therapist
Department of Occupational Therapy
(415) 750-6485

3700 CALIFORNIA ST • SAN FRANCISCO, CA 94118 • 415 387-8700

3326 Divisadero Street
San Francisco, CA 94123-1906
March 15, 1990

Dear Occupational Therapy Colleague:

Enclosed you will find copies of the Neonatal Intensive Care [NIC] study consent form and questionnaire sent in response to an introductory letter mailed to you on January 31, 1990 outlining the nature of this graduate study and requesting your participation.

Your "Yes" response received by mail has indicated your willingness to participate in this study by completing both informed consent and questionnaire forms.

Once completed, please return the questionnaire and the accompanying consent form with your signature in addition to that of a witness. The enclosed self-addressed, stamped envelope has been provided for your convenience.

Should you desire copies of either the informed consent form or the results of this study once completed, please check the boxes as indicated on the appropriate forms.

I am available in order to answer any questions or clarify any issues you may have prior to your completion of this questionnaire. My business card is enclosed once again for your convenience.

Thank you for your time and consideration of this important matter.

Sincerely,

Sandra A. Cicuttin, OTR

SC/enc

H11-L12-6-17

NEONATAL INTENSIVE CARE STUDY QUESTIONNAIRE

DATE _____

This questionnaire has been designed to obtain information about your professional experience as an occupational therapist working in the Neonatal Intensive Care (NIC) setting. The questionnaire forms the basis of a research study being conducted in partial fulfillment of the requirements for the Master of Science Degree program in Occupational Therapy at San Jose State University, San Jose, CA.

This questionnaire contains 31 items, divided into four major sections. It is comprised of a combination of "close-ended" questions as well as "open-ended" questions. There is also a fifth section which is optional; it is designed to obtain your opinion of the questionnaire. NOTE: Your response to the FIRST question in this section (page 6) would be appreciated even if you choose not to respond to the remaining questions; it will indicate whether or not you would like to receive a copy of the study's results for your records.

The questionnaire should be completed alone at your convenience. It is preferred that you use a pen to record your responses. Completion of the questionnaire should take no longer than 20 minutes. Your participation is, of course, voluntary, and all data collected in this questionnaire will be held strictly confidential and could only be disclosed as required by law.

Many thanks for the courtesy of your participation. It is indeed greatly appreciated.

To begin the questionnaire, please turn to the next page.

NEONATAL INTENSIVE CARE STUDY QUESTIONNAIRE

I. PERSONAL INFORMATION

1. Your sex: AND Your age:
☐ Male	☐ 20-29 years
☐ Female	☐ 30-39 years
	☐ 40-49 years
	☐ 50-59 years
	☐ 60 and above
2. How many COMPLETE years have you been practicing in the field of occupational therapy?
- ☐ 0-2 years
☐ 2-4 years
☐ 4-8 years
☐ 8-10 years
☐ over 10 years
3. What is the highest educational level you've completed IN the field of occupational therapy?
- ☐ Completed BA or BS degree (OTR program)
☐ Graduate School (Please Specify:)
 _____ Basic MA or MS degree in Occupational Therapy,
 with a BA or BS degree in another field
 _____ Advanced MA or MS degree in Occupational Therapy,
 with a BA or BS degree in Occupational Therapy
☐ Other (e.g., PhD program)
 (Please specify:)

4. How many COMPLETE years have you been associated with the institution where you are currently employed?
- ☐ 0-2 years
☐ 3-6 years
☐ 7-10 years
☐ over 10 years
5. Type of institution (Check ALL that apply):
- ☐ General Acute Care Hospital
☐ University-Affiliated Institution
☐ Private For-Profit Institution
☐ Private Non-Profit Institution
☐ County-Affiliated Institution
☐ Specialized (Please Specify:)
☐ Other (Please Specify:)

6. What is the size of the occupational therapy department in your institution? (NOTE: Use full-time equivalents, or FTEs)

☐ 1 FTE
☐ 2-5 FTEs
☐ 6-10 FTEs
☐ over 10 FTEs

7. Please indicate your position in your occupational therapy department's organizational structure:
 (NOTE: Check one box in each column)

<u>Position</u>	<u>Employment Status</u>
☐ Director	☐ Full-time
☐ Senior OTR (i.e., with <u>greater</u> than 3 yrs experience)	(over 20 hrs/week)
☐ Staff OTR (i.e., with <u>less</u> than 3 yrs experience)	☐ Part-time
☐ Per-Diem/Registry OTR	(under 20 hrs/week)
☐ Other (Please Specify:)	

II. NEONATAL INTENSIVE CARE UNIT (NICU) BACKGROUND INFORMATION

8. How long has your institution's NICU been in existence?
 (Please estimate)

_____ Year(s), _____ Month(s)

9. What is the bed capacity of the NICU in your institution?

☐ under 5 beds
☐ 5-9 beds
☐ 10-14 beds
☐ 15-19 beds
☐ over 20 beds

10. Estimate the number of newborns cared for in the NICU per year:

☐ Under 50 newborns per year
☐ Between 50-99 newborns per year
☐ Between 100-199 newborns per year
☐ Over 200 newborns per year

11. Is your institution's NICU recognized as a Level II (secondary care) facility, or as a Level III (tertiary care) facility?
- ☐ The NICU is a Level II (secondary care) facility
- ☐ The NICU is a Level III (tertiary care) facility
- ☐ I am not sure/ I don't know
12. What is the staff ratio of nursing care to newborns in your institution's NICU? (**NOTE:** Check any that apply, indicating level of acuity corresponding to each ratio checked)
- ☐ 1:1 nurse/newborn ratio; ACUITY: _____
- ☐ 1:2 nurse/newborn ratio; ACUITY: _____
- ☐ Other (Please Specify:)
- _____
13. What is your opinion of the overall quality of care provided by the medical and nursing staffs in your institution's NICU? Place a mark in the appropriate space representing your opinion along the scale:

1	2	3	4	5	6	7
Low Quality				High Quality		

- 13a. Briefly explain the reason(s) for your response to question 13 in your own words:

III. OCCUPATIONAL THERAPY PROGRAM DEVELOPMENT IN THE NICU

14. How long has your department offered occupational therapy services to your institution's NICU population?
- ☐ Just started service delivery to the NICU (0-6 months)
- ☐ Between 6-12 months
- ☐ Between 1-3 years
- ☐ Between 3-5 years
- ☐ Between 5-10 years
- ☐ Over 10 years

15. Of all staff members involved in providing OT services to the NICU (yourself included), did anyone complete any specialized clinical and/or educational preparation prior to becoming involved in NICU program development and implementation? (e.g., continuing education; additional academic coursework)

[] Yes
[] No

NOTE: If your response to question 15 was "No," please skip to question 16.

- 15a. If your response to question 15 was "Yes," briefly describe the type(s) of clinical/educational preparation in the space provided below:

16. Below is a list of professionals who are traditionally involved in NICU delivery of care. Please indicate how open and supportive each of the following groups of professionals have been with you about the idea of developing and providing OT services in the NICU by circling the number corresponding to your personal opinion:

		<i>Does Not Apply</i>	<i>Never Open/Supportive</i>	<i>Seldom Open/Supportive</i>	<i>Often Open/Supportive</i>	<i>Always Open/Supportive</i>
A. NICU Medical Director	0	1	2	3	4	
B. Other Neonatologists	0	1	2	3	4	
C. Residents/House Staff	0	1	2	3	4	
D. NICU Nurses	0	1	2	3	4	
E. Other NICU Therapists	0	1	2	3	4	
F. NICU Social Workers	0	1	2	3	4	
G. NICU Administration	0	1	2	3	4	
H. Other	0	1	2	3	4	

(Please Specify below:)

17. What types of interventions do NICU physicians indicate when requesting occupational therapy treatment by written or verbal orders? Check the box corresponding to the appropriate response for each intervention listed:

	<u>Yes</u>	<u>No</u>
<u>Direct Service</u>		
A. Positioning	[]	[]
B. Range of Motion	[]	[]
C. Environmental Modification	[]	[]
D. Sensorimotor Intervention	[]	[]
E. Splinting	[]	[]
1. Upper extremity	[]	[]
2. Lower extremity	[]	[]
F. Oral/Motor Intervention (e.g., nipping, suck/swallow, feeding)	[]	[]
G. Parent Education (e.g., developmental issues)	[]	[]
H. Adaptive Equipment Needs	[]	[]
I. Other (Please Specify:)		
_____	[]	[]
<u>Indirect Service</u>		
A. Consultation to NICU staff, etc.	[]	[]
B. Follow-up services (e.g., NICU transfer, discharge)	[]	[]
C. Other (Please Specify:)		
_____	[]	[]
<u>Other</u> (Please Specify:)		
A. _____	[]	[]
B. _____	[]	[]

18. For those activities marked "yes" in question 17, how often are these interventions requested by NICU physicians when ordering occupational therapy treatment? Check the box corresponding to the appropriate response for those interventions ordered:

	<u>Does Not Apply</u>	<u>Rarely</u>	<u>Sometimes</u>	<u>Frequently</u>	<u>Always</u>
<u>Direct Service</u>					
A. Positioning	[]	[]	[]	[]	[]
B. Range of Motion	[]	[]	[]	[]	[]
C. Environmental Modification	[]	[]	[]	[]	[]
D. Sensorimotor Intervention	[]	[]	[]	[]	[]
E. Splinting	[]	[]	[]	[]	[]
1. Upper extremity	[]	[]	[]	[]	[]
2. Lower extremity	[]	[]	[]	[]	[]
F. Oral/Motor Intervention	[]	[]	[]	[]	[]
G. Parent Education	[]	[]	[]	[]	[]
H. Adaptive Equipment Needs	[]	[]	[]	[]	[]
I. Other (Please Specify:)	[]	[]	[]	[]	[]
_____	[]	[]	[]	[]	[]
<u>Indirect Service</u>					
A. Consultation to staff	[]	[]	[]	[]	[]
B. Follow-up services	[]	[]	[]	[]	[]
C. Other (Please Specify:)	[]	[]	[]	[]	[]
_____	[]	[]	[]	[]	[]
<u>Other</u> (Please Specify:)					
A. _____	[]	[]	[]	[]	[]
B. _____	[]	[]	[]	[]	[]

19. What is your perception of your role as an occupational therapist and fellow member of the NICU treatment team? Briefly describe in the space provided below:

IV. OT PRACTICE ISSUES IN NEONATAL INTENSIVE CARE

Below is a list of statements pertaining to a number of issues dealing with OT neonatal intensive care program development and practice. Given your personal experience indicate your opinion of the following statements by placing a mark in the appropriate column:

	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Undecided</i>	<i>Agree</i>	<i>Strongly Agree</i>
20. Achieving acceptance in the NICU has been difficult.	[]	[]	[]	[]	[]
21. NICU professionals question the value of OT in this setting.	[]	[]	[]	[]	[]
22. I find myself having to constantly educate NICU professionals on the value of OT in this setting.	[]	[]	[]	[]	[]
23. I feel unable to provide the entire scope of OT services available to the NICU population in this setting.	[]	[]	[]	[]	[]
24. What I am allowed to do in the NICU is not the same as what I have the potential to offer as an OTR.	[]	[]	[]	[]	[]
25. What I am allowed to do as an OTR in the NICU is influenced by political factors (e.g., hospital or NICU administration).	[]	[]	[]	[]	[]
26. What I am allowed to do as an OTR in the NICU is influenced by professionals already established there.	[]	[]	[]	[]	[]
27. The majority of OT program development in the NICU has been accomplished utilizing:					
a. formal resources; (e.g., AOTA, literature)	[]	[]	[]	[]	[]
b. informal resources. (e.g., other therapists)	[]	[]	[]	[]	[]

It has been identified in the literature that in order for occupational therapy to be accepted as a valid component of the NICU service delivery model, nationwide standards of practice are needed, incorporating the following: (A) role delineation, (B) scope of practice, and (C) nationally recognized guidelines for training and competency (Hyde, 1987).¹

28. Do you believe the profession should establish such nationwide standards for NICU practice? Place a mark in the box corresponding to your opinion below:

	<i>Yes</i>	<i>No</i>	<i>Undecided</i>
A. Uniform role delineation for OT NICU practice on a national level	[]	[]	[]
B. Uniform scope of practice for Occupational Therapy in the NICU setting	[]	[]	[]
C. Nationally recognized guidelines for training and competency for OTRs practicing in the NICU setting	[]	[]	[]

29. Do you believe that if there were such nationwide standards of practice it would have made a difference in your experience with program development and achieving acceptance in your institution's NICU?

[] Yes
[] No
[] Uncertain
[] No Opinion

¹Hyde, A. (1987, November). Occupational therapists in NICU: issues of practice. Presentation given at the 11th annual Occupational Therapy Association of California conference, San Jose, CA.

30. What more would you like to see developed by the profession to make program development and practice in the NICU setting more accepted and respected by fellow NICU professionals? Briefly describe in the space below:

31. Do you have any advice for occupational therapists considering program development in the NICU setting in the future? If so, briefly describe in the space provided below:

NOTE: Completion of the following section is optional WITH THE EXCEPTION OF QUESTION 1. Your response to question 1 will indicate whether or not you would like a copy of the results of this study for your records.

V. COMMENTS/FEEDBACK -- OPTIONAL

This section is provided to obtain your opinion of this questionnaire. Any feedback you provide is optional, yet your decision to answer the remaining questions will be greatly appreciated.

Should you decide not to complete this final portion of the questionnaire, your response to question 1 [the first question] will indicate whether or not you would like a copy of the results of this study for your records. Please take the time to answer this question. Thank you.

PLEASE ANSWER THIS QUESTION:

***1. Would you like a copy of the results of this study once completed?**

- ☐ Yes, I would like a copy of the results upon completion; please send them to me
 - ☐ No, I am not interested in a copy of the results
 - ☐ I am not sure at the present time -- please contact me once the study is completed to see if I am interested
 - ☐ I am not sure at the present time -- but do not contact me
-

2. Indicate how much time it took you to complete this questionnaire:

_____ Minute(s)

3. What is your opinion of the combination of question styles presented in this questionnaire?

- ☐ I liked the variety of question styles
- ☐ I did not like the variety of question styles
- ☐ Uncertain
- ☐ No opinion

4. Did you feel that this combination of question styles gave you the opportunity to express your personal opinions about occupational therapy practice in the NIC setting?

- ☐ Yes
- ☐ No
- ☐ Uncertain
- ☐ No opinion

5. Overall did you feel that this questionnaire was helpful in clarifying your understanding of issues pertinent to occupational therapy practice in the NIC setting?

☐ Yes
☐ No
☐ Uncertain
☐ No opinion

6. Are there any other comments you would like to make, or any feedback/suggestions for improvement of this questionnaire you would like to give?

PLEASE TURN TO THE NEXT PAGE

This completes the NICU questionnaire. Your participation in this study has been most appreciated.

This research study is being conducted in partial fulfillment of the requirements for the Master of Science Degree program in the Department of Occupational Therapy at San Jose State University, San Jose, CA. Any and all information you have provided in this questionnaire is, of course, voluntary, and the information that is collected will be held in the strictest confidence.

Once again, many thanks. Your contribution has been greatly appreciated.

Best wishes for the continued success of your occupational therapy NIC program.

Sandra A. Cicuttin, OTR

Appendix E

Follow-Up Letter for Neonatal Intensive Care Study*

* (Adapted from Leedy, 1974, p. 85.)

B11-C1-14-147

SANDRA CICUTTIN, O.T.R.
Occupational Therapist
Department of Occupational Therapy
(415) 750-4485

3700 CALIFORNIA ST • SAN FRANCISCO, CA 94118 • 415.387-8700

20 Caulfield Court
Petaluma, CA 94954-4672
October 1, 1990

Dear Occupational Therapy Colleague:

All of us are busier these days than we should be, and most of us have a difficult time managing professional as well as personal obligations which are essential and inevitable. No doubt these extra obligations and requests require thoughtful consideration, and I am well aware that in reality none of us have the time or the energy which we would desire to fulfill them.

From my letter of introduction extending my invitation for your participation in a research study I am conducting on the role and scope of practice of occupational therapy in the Neonatal Intensive Care [NIC] setting dated January 31, 1990, I have not yet received a reply. Perhaps the response form and self-addressed, stamped envelope provided for your convenience was misplaced, or your response may have been lost in the mail.

In any event, I strongly encourage your reconsideration to participate in this study. I am certain that given your dedication to this specialized practice area you feel as I do. Occupational therapists need to take action and explore the status of their role in the NIC setting if we are to be considered a valid component of NIC practice. But it can only begin with small steps, and clinical investigative minds...together!

Enclosed with this letter you will find a response form, along with a self-addressed, stamped envelope by which you may again indicate your willingness to participate in this study. If you would like to receive any additional information on this study prior to giving your written consent, then I will be most happy to contact you at your convenience. I can now be reached at a new address: 20 Caulfield Court, Petaluma, CA, 94954-4672. My new phone number is (707) 765-4660. My business card is also provided should you desire to contact me during business hours. I look most forward to hearing from you very soon.

Thank you once again for the courtesy for your reconsideration.

Sincerely,

Sandra A. Cicuttin, OTR

SC/enc

Appendix F

Reminder Postcard for NIC Study Participants

J4-T1-49-201

June 30, 1990

Dear Occupational Therapy Colleague:

On January 31, 1990 you were invited to participate in a research study about the role of occupational therapy practice in the neonatal intensive care [NIC] setting. Your "yes" response indicated your willingness to participate, and you were sent an informed consent form and short questionnaire to complete and return via stamped, self-addressed envelope. My records indicate that your copies of the NIC study consent form and questionnaire have not yet been received. [If you have recently returned your completed forms, disregard this notice.]

If you have not yet completed the forms or have misplaced the stamped, self-addressed envelope, please call me at (415) 750-6485, M-F, 8:00am-4:00pm [PST], or at home at (707) 765-4660, 6:00pm-9:00pm [PST]. Your time and sharing of your experiences with NIC program planning and implementation would be greatly appreciated and add to the richness of the data already accumulated. Thank you.

Sandra A. Cicuttin, OTR

Sincerely,
Sandra A. Cicuttin, OTR