AN ANALYSIS OF FACTORS RELATED TO TEXAS PUBLIC SCHOOL NURSES' DELIVERY OF HEALTH SERVICES TO HANDICAPPED CHILDREN

DISSERTATION

Presented to the Graduate Council of the North Texas State University in Partial Fulfillment of the Requirements

For the Degree of

DOCTOR OF PHILOSOPHY

By

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This study investigated the factors related to the delivery of health care services by school nurses. The purposes of the study were divided into three categories. The first was the nurses' identification of the handicapping conditions of children in their caseloads and their perceptions of the children's health problems. The second involved data about the nurses' educational background and preparation they felt as useful in their work with children with handicaps; data on barriers which limit or prevent nursing care of these children was also solicited. Third, information was sought about future plans of nurses for obtaining more education, barriers perceived which hindered their plans, and special considerations in program planning that would facilitate their educational goals. Institutional guidelines were written based on findings of the study and the review of literature.

A questionnaire was mailed to 500 school nurses randomly selected from the Texas Education Agency. A total of 332, 66 per cent, were returned. Responses were reported in percentage and relationships were examined using the chi square test. The Freeman-Tukey post hoc analysis was used to analyze
patterns in the data that contributed to significant chi square values.

Nurses were categorized according to highest educational preparation. There were 43 associate degrees, 142 diplomas, 117 baccalaureate degrees and 30 master's degree nurses involved in the study. Among the findings of the study were indications that as educational preparation increased, the nurses' feelings of competency and involvement in the health program of children with handicaps also increased. Nurses also indicated that they have not had enough preparation to work with handicapped children and this was noted as a barrier to providing care to these children. Barriers to education were identified but over 50 per cent of all the nurses indicated a desire to attend a university program. The most desirable courses, types of programs, and program timing were identified by the nurses.
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CHAPTER I

INTRODUCTION

The federal government passed legislation in 1975 entitled The Education for all Handicapped Children's Act (PL94-142) which has had far-reaching implications for the public school system. This law results from philosophical changes within our society during the past three decades. It mandates that school-aged children who are handicapped are to be mainstreamed into the regular classroom or into the least restrictive environment possible. Public schools are held accountable for insuring that even severely handicapped children will receive a free, appropriate education.

When school officials, parents, legislators, and various agencies have completed their part in carrying out the legal, financial, and placement ends of this law, the classroom teacher is the one to whom falls the bulk of the responsibility for its success. In our society, teachers have traditionally worked with children who represent the norm in ability and intellect. Since 1975, however, these teachers have had to develop sophisticated techniques to provide educational programs designed to meet the special needs of the children who are handicapped.
The school nurse has had much the same experience trying to provide health care for school children. Since passage of PL94-142 (11), the scope of public school nurses' duties has increased many times. As a member of the child's educational team, the nurse must assist by helping teachers understand childhood health problems in order that appropriate curriculum objectives and activities may be met. This begins with both the assessment and preparation of the regular classroom to accommodate these children. Behavioral management and emotional problems are a shared responsibility of the teacher and the nurse. Finally, selections are made of the methods and materials or special equipment that are needed to facilitate the child's educational progress. Very often the nurse's evaluation of the child's health problems has a direct bearing on this step.

It takes special skill and knowledge to work with children who are handicapped. These children are not necessarily ill because they have a disability, but they are prone to develop complications as a result of the particular disability. By effective health promotion and prevention of accidents and complications, these children can be assisted to have a more successful school experience. It is the nurse's role to provide a plan of care to meet the child's health needs, to prevent illness, and to assist the teacher in meeting the child's educational objectives in spite of the child's physical disability. It is a
challenge, at least, to provide a therapeutic milieu that is safe and stimulating.

The health needs of the handicapped child and the educational preparation of the nursing personnel should receive careful study. Future educational nursing programs that meet the needs of school nurses will also benefit the children for whom nurses are responsible.

Statement of the Problem

The problem addressed in this study is an analysis of the factors related to school nurses' participation in delivering health services to handicapped children in Texas public schools.

Purposes of the Study

The purposes of this study are as follows:

1. To determine the handicapping conditions of children who are served by the Texas public school nurses;

2. To determine the health problems of children who have handicaps as perceived by school nurses;

3. To determine the educational preparation and specialization of school nurses;

4. To identify factors, if any, that prevent or limit school-based nursing care of children who have handicaps;

5. To determine whether Texas school nurses meet the health needs of children who have handicaps;
6. To determine whether school nurses work with public school teachers in the preparation of individual education programs (IEP) for children who have handicaps;

7. To determine if school nurses work with the parents of handicapped school-aged children to meet their health needs;

8. To determine if nurses in Texas public schools want to receive more educational preparation that will better enable them to meet the health needs of children who have handicaps;

9. To determine the barriers encountered by school nurses in obtaining education about the management of the child who is handicapped;

10. To determine the coursework that school nurses feel would assist them to care more efficiently for children who have handicaps;

11. To determine the special considerations in program planning that would assist school nurses to seek additional educational preparation;

12. To develop institutional guidelines that would meet the professional educational needs of Texas school nurses and potentially impact the health needs of children who have handicaps and are in Texas public schools.
Research Questions

Based on the problem and purposes of this study, research questions are posed in three categories. Category I deals with handicapping conditions and the needs of children who are under the health care of Texas public school nurses. Category II is related to the perceptions of school nurses regarding (a) their educational preparation, (b) the skills needed in their work with children who are handicapped or retarded, and (c) the constraints in providing that care. Category III deals with (a) the nurses' desire for additional education that will prepare them to work with children who have handicaps, (b) the barriers that nurses feel prevent them from obtaining that education, (c) the courses and skills that nurses feel they need, and (d) the special considerations that might remove the barriers of attending a university.

Category I

1. What are the handicapping conditions of children who are served by the Texas public school nurses?

2. What are the school nurses' perceptions of handicapped children's health problems?

Category II

3. What preparation do school nurses have that enables them to work with children who have handicaps?
4. What factors prevent or limit school-based nursing care for children who have handicaps?

5. Do school nurses in Texas perceive that they meet the health needs of children who have handicaps?

6. Do school nurses collaborate with public school teachers in the preparation of individual education programs (IEP) for children who have handicaps?

7. Do school nurses work with parents to meet the health needs of school-aged children who are handicapped?

**Category III**

8. Do Texas public school nurses want to receive more educational preparation to enable them to meet the health needs of children who have handicaps?

9. What barriers do school nurses perceive as limiting them in obtaining more education?

10. What courses or special skills do school nurses think would assist them to provide more efficient health care for children who are handicapped?

11. What special considerations in program planning would make it possible for the school nurses to seek additional educational preparation?

12. Can institutional guidelines be developed from findings of this study?
Hypotheses

To carry out certain purposes of study, the following hypotheses were devised for testing.

1. There will be a relationship between nurses' stated feelings of competency to work with children who have handicaps and the number of types of health interventions they provide.

2. There will be a relationship between school nurses' educational backgrounds and their feelings of competency to work with children with handicaps.

3. There will be a relationship between school nurses' perceptions of barriers preventing school-based nursing care to children with handicaps and the presence or absence of support agencies or medical professionals in or near the community.

4. There will be a relationship between nurses' plans to acquire more educational preparation and barriers perceived by them in obtaining education.

5. There will be a relationship between special considerations in program planning by institutions of higher education and plans of nurses to seek additional educational preparation.

Background and Significance of the Study

Responding to the needs of children who have handicaps in the biological, sociological, and psychological spheres
of daily living is a significant change that has taken place in the last fifty years; perhaps the greatest era of change has been in the last thirty years. Children who previously lived in institutions that were custodial in nature are being mainstreamed into the school system. They are also still emerging from closets and back rooms of homes (5, 2).

Many problems still exist in certain geographical areas although great strides have been made in meeting the educational needs of these children. This involves helping them to achieve the rights and privileges that the general population, who are not handicapped, take for granted.

Best (3) states that naming a disability or labeling a child with a particular medical problem causes vast generalizations and expectations that are misleading for those within the school system. These generalizations do not give a true picture of what the student can do. The capabilities of the child should be stressed instead of the stigmatized category. However, state legislatures and departments of education are still providing for these students on a categorical basis (9).

As listed by "A Bill of Rights for the Disabled" (1), areas that need to be resolved are health, education, employment, housing, architectural barriers, transportation, income maintenance, institutional care, civil rights, training, and research. Of particular interest are the
items regarding health which state that all disabled persons should be offered the opportunity for full diagnostic, therapeutic, rehabilitative, and follow-up services in the nation's hospitals, clinics, and rehabilitation centers without regard to race, religion, economic status, ethnic origin, sex, age, or social condition. The bill of rights for the disabled also states that all disabled persons who require orthotic, prosthetic, or adaptive devices should be given and trained to use them so that they may become more mobile and live more comfortably. Under education, the rights state that all disabled persons should be given every opportunity for formal education to the level of which they are capable and to the degree to which they aspire (1).

In the mid 1970s as mandated by PL94-142, children were placed into regular classrooms with inadequately prepared general educators, administrators, support personnel, and without a clear definition for the children or their parents about realistic expectancies (7). It was a confusing era.

Placement is not the key issue; rather, the issue is the quality of the educational program. In some areas educators, both special and general, have not come to grips with quality as an issue, according to Cruickshank (7). Handicapped children who live in isolated rural areas continue to be an educational challenge.

In a nine-point series of selection policies for placement, Dunsdon (8) states that admission of children with
handicaps to schools and agencies should not be determined with purely medical criteria. However, he further states that there is evidence that children with handicaps have a lower degree of resistance to illness and reduced physical stamina, particularly those who have cerebral palsy. The last statement poses problems for the classroom teacher and causes school personnel to persist in giving importance to the medical model classifications.

Valletutti (12) describes the role of the teacher in diagnosis and management of the educational problems of children who have handicaps. The teacher must deal with problems such as diet, adaptive devices to promote the child's mobility, other students' attitudes about the handicapped child in the classroom, the effect of environmental stimuli, the care of the child who has behavioral or emotional problems, knowledge of the medications taken by the child, and the responsibility of the teacher in relationship to legal issues. The teacher must also recognize the child's needs for other professional interventions such as speech and hearing, occupational therapy, and physical therapy.

The role of the school nurse on this team of professionals will serve to relieve the teacher of some of the responsibility for the health problems of the child who has handicaps. The nurse may function best as a coordinator of all of such children's needs in relation to their
disabilities. Duties of the nurse may sometimes be that of team member or team leader. Steele (10) states that many professionals are capable of giving the same service to children who have developmental lag. The role of the nurse can be adapted to compliment other team members' work. According to Steele, the nurse who has preparation in the teaching-learning process will be a valuable member of this team. Blackwell (4) believes that the nurse can favorably affect the attitude of the teacher, other students, and the families of the students who have handicaps by providing information and education about those with developmental disorders. But before many school nurses can work effectively with the health care of children who have handicaps and function as team members, they need to avail themselves of university facilities that provide for additional education in the field.

School nurses who are prepared can play a major role in assisting teachers and other team members to meet the child's educational needs and work to solve related problems. In spite of decreased federal assistance, nurses are also in an important position to help communities develop an awareness of the commitment to start or continue programs for children who have handicaps. Nurses have long enjoyed the esteem of the public as respected professionals in the health field, and they are in a position to act as advocates
for the child, the family, the teacher, and the school within the community (4).

In order to assist the child and the family, the nurse should have knowledge of what resources are available in the community and state that serve children who have handicaps. As advocates, nurses should become involved in political processes; participation in groups where policies are being formulated is one way in which school nurses can become involved both as private citizens and as nurses. This may mean writing to legislators to give their opinions on laws that are being considered. It also requires that the nurse be active through membership in key organizations that affect professional or public policies (4).

School nurses, on the local level, are aware of community needs as examples of serious gaps in health care. Nurses can help the community by assuming leadership roles (6). Another way in which nurses can advocate for health causes in the community is to do public speaking for organizations, radio, and television. According to Brooten, Hayman, and Naylor (6), nurses can get their ideas across by writing. Nurses should utilize not only nursing journals but also journals in other areas in order to share ideas with other team members; there are related journals in all professional fields, and nurses who write about the health problems of handicapped children for such journals, open communication channels.
Writing for the lay public is another way for nurses to provide a service to the general public and reach a vast readership. Writing for children's magazines is an excellent resource to use for teaching about children who have handicaps. Helping to change the attitudes of others about the abilities and the worth of handicapped children is a needed service.

The factors that influence nurses' participation in the health care of children who have handicaps need to be studied. Findings should have an impact on colleges and universities that are interested in helping nurses to gain the education they need to better equip themselves in their work with children who are handicapped. If nurses are not able to meet the needs of these children, an analysis of the reasons should be made and the results made known for the benefit of the child, the parents, the nurse, and the school. The administrators of institutions of higher education may be interested in the responses.

Definition of Terms

For the purposes of this study, terms are defined as they relate to this study.

Handicapped will be used to describe children who have emotional, mental, or physical problems. It should be stated that the term handicapped is not the preferred terminology for persons who have disabling conditions.
Best (3) states that disability is the term of choice. However, for this work the term handicapped is used since it is the wording used in PL94-142, The Education of All Handicapped Children Act (11). Best, however, states that the importance is more on the placement of the word in relation to the person for whom it is the descriptor than whether one uses disability or handicapped. Therefore, the format "the child who has handicaps" will be followed in order to put the person first and the condition second.

Institutional guidelines are the goals and statements drawn from findings of the study, the review of literature, and suggestions of the panel.
CHAPTER BIBLIOGRAPHY


CHAPTER II

REVIEW OF THE LITERATURE

This chapter presents a review of the relevant literature on the nursing care of public-school children who have handicaps. According to four separate sources of information (58), the review is divided into sections that include (a) applications of Public Law 94-142 to the public schools, (b) the individual education program, (c) identification of handicapping conditions and related health problems, (d) levels of basic educational preparation for registered nurses, and (e) additional educational preparation for nurses.

Application of Public Law 94-142 to the Public Schools

As a result of the Education for all Handicapped Children's Act of 1975 (Public Law 94-142), handicapped children are afforded their right to a full and appropriate education (3, 12). These children must be educated with non-handicapped students to the extent appropriate and are entitled to attend school at the expense of the district through the school year in which they become twenty-one years old or have earned a high school diploma. Education
agencies must identify and locate all unserved handicapped children, and evaluation procedures are required to ensure appropriate classification and educational services with procedural safeguards clearly established (3).

If the child's physician, teacher, parent, or other professional member of the school believes that the person from five to twenty-one requires special-education services, an evaluation must be made with the consent of the parent. This free evaluation must take place within thirty days from the date the written request is made. It consists of an individual psychological examination, a physical examination, a social history, and testing for developmental skills as well as intelligence. If the child has motor, vision, or hearing problems, adjustments must be made in the regular testing in order to have a fair and unbiased result of the child's abilities (3).

An individualized education program is developed and implemented for the child at the time of entrance into the program. Children are evaluated according to the normal model for school-aged children and adolescents who are working through established developmental tasks. The developmental tasks for school-aged children are (a) developing use of logical thought, (b) defining sex role and self identity, (c) developing competencies, (d) developing peer groups, (e) expanding autonomy, (f) developing internal controls for moral codes, and (g) developing ability to
handle stress. The developmental tasks of adolescents are (a) utilizing abstract thought, (b) establishing self identity and sexual role, (c) establish independency and developing interdependent relationships, (d) choosing an occupation and preparing themselves, and (e) developing a personal value system (49).

The child who has disabilities is tested against these milestones in areas of reading skills, math skills, language development, motor development, and social development. Self care skills such as dressing, toileting, or specialized communication skills (lip reading or braille) are also evaluated.

The Individual Educational Program (IEP)

The individual educational program (IEP) plan identifies long-range goals for the child in each major skill area as well as the short-range goals for each step. For example, a long-range goal may be to master a certain level of mathematics; the short-term goals would include certain specific skills within that area such as learning a step in multiplication tables.

Within the IEP is a statement of specific educational services and instructional materials for each child for the extent to which the child is able to participate in the regular classroom program. The plan must give a target date for initiation, and duration of the services and objective criteria and evaluation procedures are listed. Also a part
of the program are schedules for a yearly determination of whether the objectives are being met.

Putting the plan into action is the next step. Special needed services are included in the child's program (e.g., speech and hearing therapy (56), recreation, physical and occupational therapy, psychological and medical services) that will aid in diagnosis, counseling, school health services, social services, and parent training. One of the responsibilities of the board of education is to determine both the methods of special education and the related services that are appropriate for the child (27, p. 234).

As program options, the regular classroom teacher has the primary responsibility but may use other resources such as (a) regular class with no assistance needed, (b) regular class and consultive assistance from special education, (c) regular class and consultation plus special materials from special education, (d) regular class and itinerant teacher service from special education, (e) regular class and resource room, resource teacher service from special education, and (f) regular class (half-time) and special class (half-time). The special class teacher has the primary responsibility in (a) special class in separate special day school, (b) hospital and homebound services, and (c) residential or boarding school. In some cases in which there may be no educational provisions, the regular class teacher may also (a) assist the homebound or hospital
teacher, (b) teach by telephone hook-up or electronic equipment, and (c) not be involved at all (20, p. 22).

In areas where the school district has only a small number of children who require special education, arrangements can be made through boards of cooperative educational services where special materials, classes, and teachers are provided. If there are schools within neighboring school districts that can better provide for the child, arrangements may be made with them to provide services. If programs are not appropriate within a public school system, contracts may be made with privately operated programs that have the needed programs. All of this is subject to the approval of the commissioner of education. The goal of the program planning is to provide as much interaction for the child with non-handicapped peers as possible, but if there is a certainty that no appropriate program exists for a child, then a residential program may be suggested.

During the child’s classroom experience, one or more options may be decided upon based on the child’s need (57). The regular classroom is the least restrictive environment, but the child may receive help from a special education teacher. The child must receive at least one hour a day of instruction either in a small group (five or less) or individual sessions, but minimal time must be spent with the special education teacher.
Special classes, which are generally located in a public school building, are also an option. In this case, the teacher is a certified special education teacher. Limits are placed on the number of children and the range of ages of the students in the class. These classes may be provided by the school district or with Cooperative Educational Services.

State-operated schools for the blind, deaf, or severely physically handicapped are among the choices that are available to the school and the family. This requires the parent to contact the state offices for Education of Children with Handicaps.

If the school must place the child in a private school program, the cost for room and board is borne by the school district and not the parent. Certain standards also must be met by the private facilities that receive public funding; they must make periodic reports of progress for the child as does the public school to the committee on the handicapped, and the child may not be transferred or dismissed without notifying the school district. All information about the child must be kept confidential.

Home instruction is provided to these children if they are unable to attend school and the district must provide educational programs. The minimum requirements are one hour a day at the elementary level and two hours a day at the secondary level. Free transportation is to be provided
to and from school. For children below school age (from 0-3) who are deaf or blind, the availability of early childhood intervention is deemed necessary to help them learn to communicate with others.

Identification of Handicapping Conditions and Related Health Problems

According to the law, children are considered as handicapped if they are emotionally disturbed, mentally retarded, speech-language impaired, visually handicapped, hard of hearing, deaf, orthopedically impaired, physically handicapped, or learning disabled. The focus of mainstreaming is development of whatever abilities the child may have, not the child's disability. Since mainstreamed children do have more potential for health problems than their normal peers, however, these problems must be planned for in order to provide the greatest probability for success (15). Some related health problems of selected specific handicapping conditions are discussed in subsequent sections to illustrate the type of problems that may arise.

Cerebral Palsy

The school nurse can be a ready resource for the classroom teacher (18) for information in the prevention of health problems that may arise in relation to a child's handicapping condition. Children who have cerebral palsy, for instance, may bring to the classroom a combination of
disabilities that are often associated with diagnoses for mental retardation, speech and language defects, visual handicaps, auditory problems and, frequently, seizure disorders. These handicaps may cause learning problems for children who have cerebral palsy even though they may be of above average intelligence (15).

Social problems may result from the impaired relationship with others because of physical disorders (36). Stress and psychological problems may then arise. The child's type of cerebral palsy may also present many health problems that can endanger overall health and therefore needs monitoring. Spastic cerebral palsy, the most prevalent form, causes contractures and tense, difficult, inaccurate, though voluntary movement (6, p. 30). When this type of cerebral palsy is present in the lower extremities, children may tend to have legs that "scissor" because of muscle contraction, and in some cases the legs are drawn across each other and inwardly rotated (76). Pressure points may cause skin breakdown, and classroom positioning with padding or pillows is very important for relief of pressure points. When upper extremities are affected, there may be varying amounts of flexion. Skills that are related to normal hygiene—dressing, eating, and play—are either difficult or impossible depending on the severity of the spasticity.

Athetosis is characterized by involuntary muscular activity that causes a constant writhing motion which is
mostly in the extremities and face. With movement such as this, the client needs protection from injury; activities of daily living (ADL) skills, which are related to health and grooming, are very difficult to achieve.

Forms of ataxia, rigidity, and tremor make up a small percentage of the types of cerebral palsy that are not as frequently seen in the classroom. As part of parent training in the home for younger children or in special classroom, the teacher will see these conditions. Since one of the danger potentials for this type of cerebral palsy is a lack of coordination and sense of balance, falls are frequently the outcome.

Eating skills are a problem for the child, just in trying to get food from the plate to the mouth. Even the act of chewing and swallowing is a difficulty. Choking and aspiration are realities that are often faced by the child and teacher at snack or meal time. There are specific feeding techniques however, that can be taught to parents and adaptive devices that can assist children to become independent (73). For adolescent girls, feminine hygiene becomes a problem because of spasticity or the uncoordinated muscular activity that hinders dressing and other ADL skills. Toileting is also a problem area for persons who have cerebral palsy. Creative problem-solving by the health team has developed many useful, adaptive devices for those who have cerebral palsy (26).
Spina Bifida

Another type of physical disability is spina bifida. This condition can be as mild as a dimple in the spinal column, or it may result in a surgically correctable myelomeningocele in which the spinal cord and cerebro-spinal fluid are found in a pouch that protrudes from an opening in the spinal column. The child, in the latter case, will have no useful movement or sensation below the lesion. Early corrective surgery will lessen instances of infection and preserve some function, but the child will still have impaired use of the body below the lesion. Perhaps this handicapped child, who may or may not be retarded, presents the greatest problem for the teacher. Such children may have hydrocephalus and therefore have a shunt leading from the brain to the heart or peritoneal cavity. If this shunt becomes blocked, the child develops some neurological symptoms that require medical attention. The neurological deficit to the lower part of the body causes both skin breakdown at pressure points and bowel and bladder dysfunction. The skin breakdown can be caused from sitting less than two hours without changing position or from braces or other equipment that press against the skin; even the seams in clothing can create pressure points (17, 44).

Full bladders will ultimately cause a retrograde infection to the kidney and increase such children's health problems. They will be absent from school for long periods
of time if they develop decubitus ulcers on the skin or a retrograde infection in the kidney. Socially, the male who wears an external catheter and bag will suffer because of the strong urine odor and the limitation this device puts on his activities; external urine drainage bags and catheters are also the source of inflammation and infection on the penis. In females, diapering is often resorted to because of constant dribbling (68, p. 350), and body warmth plus wet diapers provide an excellent medium for bacteria to grow and excoriate the skin. If plastic pants are applied over the diaper to protect outer clothing, this increases the heat and, therefore, the potential for infection. For this reason a procedure called intermittent catherization may be ordered by the physician in which the child may be ordered to have catherization approximately every two hours or more. This prevents the bladder from overflowing, which results in retrograde infection and the constant dribbling. Intermitent catherization is not a sterile technique (such as that which people who do not have bladder infections must undergo prior to certain hospital procedures); intermittent catherization is a clean technique that can be safely done by a teacher, teacher's aid, family member, or ideally, the child.

Understandably, teachers are reluctant to be responsible for these children's health problems in the busy classroom. In the usual situation, neither the teacher nor
the school nurse will have time to do these important procedures. With instruction from the school nurse, however, a classroom aid can be taught to assist the child or the child can be taught to do the procedure.

Hearing and Vision Losses

Sensory losses such as hearing and vision present both educational and social problems for children if they are not diagnosed and dealt with. Children who have perceptual problems become learning disabled in reading, writing, and other academic skills (6, p. 40). Safety may be a problem for the child with any vision problem (9); inability to read pedestrian signs or other signs which direct such children through community living is a serious safety problem.

Seizures

Children who have seizures, either petit mal (absence) or grand mal (tonic-clonic), will present health problems if the teacher is not aware of certain aspects of the condition. These children need to be protected and learn to protect themselves from certain situations in the environment that may be harmful in the event of a seizure. Proper nutrition, sleep, medication, and emotional stability should be maintained. The teachers who understand how to deal with children who have seizures can prevent needless anxiety for themselves and provide such children with a great deal of confidence. When children have seizures often enough to
warrant protective headgear, very often their self esteem suffers even in a special classroom (45).

**Orthopedic Handicaps**

Orthopedic problems present a difficulty for the child, the teacher, and classroom peers. Some orthopedic devices are cumbersome to the child, and ambulatory aids are a problem to store. Prosthetic devices have certain mechanical parts with which teachers must familiarize themselves in order to assist the child. The emotional adjustment of such children must be observed as they progress through developmental stages; self image may become a problem during adolescence and adulthood. The child should have ample opportunity to practice needed fine motor skills (such as writing if the handicap is with a hand or arm) and use the recreational equipment in the gym (67).

**Muscular Dystrophy**

Perhaps the disability which is most difficult to deal with in the classroom is a progressive non-curable disease such as the genetic conditions of muscular dystrophy. With this condition, the family and child suffer the chronic grief of impending loss of independence and shortened life span. The child suffers social isolation, jealousy from and of siblings, and over protection. The parent, because of the genetic mechanism of transmission, often suffers from guilt and frequently reflects this emotional strain (55).
Retardation and Emotional Disturbances

Retarded and emotionally disturbed children are incorrectly linked by some. Samuels (63, p. 29) defines emotional disorders using Lambert and Bower's widely accepted five significant characteristics for emotional disturbance, one or more of which must be present in a serious degree within a time frame. These characteristics are (a) a learning disability that is not related to any definable cause such as intellect, sensory deficiencies, or health, (b) interpersonal relationships that cannot be developed or retained, (c) inappropriate behavioral feelings when conditions are normal, (d) unhappiness or depressive moods, and (e) personal problems that cause physical symptoms and fears. When these symptoms interfere with learning and social and psychological development that are not related to health factors, a thorough health and psychiatric assessment must be done.

Mental retardation, while it may also include emotional disturbances, is not easy to classify. It is not a specific disease nor is it caused by any one thing. It can be the result of genetic disease or acquired factors (10).

According to the American Association on Mental Deficiency, the definition for mental retardation that is generally accepted in the United States (40, p. 14) states that it is the "significantly subaverage general intellectual functioning existing concurrently with deficits in
adaptive behavior and manifested during the developmental period" (23, p. 5). Subaverage in this case means two standard deviations below the mean I.Q. score of 100; adaptive behavior means inability to adapt to the environment when compared to others of the same age in maturation, learning, and social skills; the developmental period is accepted as from birth to sixteen or eighteen years of age.

The definition is based on certain criteria that may change. Chinn, Drew, and Logan (11, p. 37) state that a person may change status as a result of changes in intellectual functioning, or adaptive behaviors, in expectations of the society, or for reasons unknown. Decisions are based on relationships to behavioral standards and norms within the person's own age group (64, 65). According to Menolascino, the number of retarded persons in the United States as published in 1972 by the President's Committee on Mental Retardation is 3 per cent of the population, or about 6.5 million persons. There are over 125,000 infants born each year who will at some time be labeled as retarded. One in ten Americans has a retarded person in their immediate family. This disorder accounts for twice as many children as the other handicaps of cerebral palsy, rheumatic heart disease, and blindness combined (43, p. 25).
Cystic Fibrosis

The hereditary disease of cystic fibrosis is another condition with which the school nurse must deal. These children have health needs related to many physical systems such as gastrointestinal and pulmonary as well as psychological and sociological areas. Families must be given information about the high-carbohydrate, high-protein, low-fat diet necessary for the child. They also need to know about vitamin therapy, how to mix the enzymes necessary for the child to take with meals, and how to avoid diarrhea by regulating the enzymes taken (14, p. 244). During school, control of the child's problem of tenacious body fluids and prevention of infection will become functions of the nurse. The child's body image and self esteem may become problematical and this should be an ongoing part of the child's individual health plan. Assessing the families' need for knowledge should become the nurse's function. In some cases the nurse may be the provider of needed information to parents as well as to the child's classroom health teacher.

General Problems and Treatments

Menolascino (43, p. 38) states that of those 6.5 million persons, 87 per cent are capable of entering the job market and 10 per cent (650,000) are capable of working in a sheltered environment with vocational training, assistance, and support. He estimates that only 3 per cent of those
6.5 million are incapable of some productive type of work with our present techniques.

When chemotherapy is used for a school-aged child, particularly those who have learning disorders, to alter behaviors from brain function, constitutional factors, or relationships at home (34, p. 96), it is done for three major functions. These functions are to cure or prevent consequences or symptoms, to minimize symptoms of physical disease, and to provide control. Assessment skills are vital.

An ongoing evaluation of such children's behavior is necessary while they are taking the medication. It is reasonable to state that the teacher should expect to see the child become more alert and able to participate better in the classroom. Feedback to the health care providers is an important function related to the child's medication program and its success.

Dietary management is another concern for the classroom teacher for conditions such as autism; the treatment of autistic children may include large doses of vitamins, food additives, and tranquilizers. Children who have cystic fibrosis, phenylketonuria (PKU), and diabetis mellitus will require special dietary attention (38). Teenage pregnancy often presents problems for the newborn which lead to handicaps because the mother does not practice proper nutrition;
school nurses are in an excellent position to assist with this aspect of prevention (1, 4).

Counseling is another form of treatment that resolves around the relationships among the parent, child, the doctor, and the educational team. Very often, communication between the school and the physician has been a problem (34, p. 53). The school nurse who is prepared to deal effectively with mainstreamed children can assist the teacher in this communication effort. The teacher needs pertinent information about the child's functioning not only in the medical field but also in areas related to psychological, social, and other consulting resources (21). These are needed to help the teacher and the family to plan which behavior modification techniques will be used to set adequate limits and expectations for the child.

In their dealings with handicapped children, teachers need to have as well as be an advocate, and advocacy is not without cost (7, 13, 32, 42). The school nurse can provide advocacy for teachers' needs in working with the problems that arise with these children in the classroom (18, p. 17). Del Campo and Josephson (16, p. 34) state that situations may relate to emergency care, education of staff for acute health problems, continuous preventive health care for children, teaching normal growth and development along with serious chronic problems, planning for health care needs,
and collaborative planning with other professionals for the management of the child's disability.

Levels of Basic Educational Preparation for Registered Nurses

The education of nurses in America today to enter the professional field is at three levels, and graduates of all programs must pass the same state board licensure examinations before practice. These three entry points are the two-year associate degree program offered by junior colleges, the three-year program offered by hospital schools of nursing, and the four-year program of universities that offer a baccalaureate degree in nursing. All of these programs stress somewhat different philosophies, entrance requirements, and exiting abilities.

Baccalaureate nursing education is based on a goal of preparing professionals, who have a wide base in liberal arts, to function as nurses in a variety of roles and in many different health care settings (37, p. 224). The five functions in various settings are (a) the caregiver (staff nurse) function of working within the setting of hospitals and community health agencies, (b) beginning managerial-leadership functions (team leader, assistant head nurse, head nurse) that are carried out in centralized settings, (c) health promotion and health supervision functions that are carried out in the community, schools, mental health clinics, hospitals, (d) client teaching or counseling
functions that are performed by all nurses everywhere, and
(e) health and illness screening as a function of primary
care in a variety of settings (37, p. 224).

Kramer (37) feels that although there are some
functions of nursing that are common to the various entry
levels, the three programs do not articulate. Kramer also
quotes Montag, the nurse-educator who conceptualized and
started the two-year associate degree nursing program in
the United States, as stating that the basic premises of
associate degree nursing (or technical nursing) should be
differentiated, and that along a continuum the technical
education is at one end while the professional education is
at the other end.

Baccalaureate nurses have the opportunity to practice
in a greater variety of settings in which they are able to
build upon the liberal arts background that is incorporated
into the curriculum (8). For this reason, according to
Kramer (37), they are better prepared to function in the
wider role descriptions.

Baccalaureate nurses have the ability to develop their
hospital roles more fully by the utilization of the nursing
process in which all of the steps are emphasized. Those
steps are assessment, planning, interventions, and eval-
uation (24). Associate degree nurses also are educated to
carry out all components of the process, but planning and
intervention are stressed. Baccalaureate nurses' skills in
assessment and evaluation are therefore more developed than those of associate degree nurses.

Registered nurses who have either associate degrees or nursing school diplomas and who return to school to acquire a baccalaureate degree, need the opportunity to practice interpretation and assessment of health and illness in their patients. According to Partridge (51), it is the nursing process that is so important in working with the educational team; one hears nurses complain of "lack of colleagueship between nurses and the other members of the health team" (51, p. 43). Partridge states that approximately 85 percent of registered nurses hold either an associate degree or diploma as their highest credential and are therefore the least educated member of the team. The current heated discussions among nurses that are concerned with entry levels of nursing and the relative titles of professional or technical nurse is not the concern of this study. This study is concerned with the depth of knowledge and skill acquired in these programs that will prepare nurses to work with children who have complicated health needs. Some nurses feel that educational preparation has nothing to do with the reality of nursing practice, and they ask why nurses are not taught the effective and acceptable ways of effecting change that other professionals use to their advantage (28, p. 82). After listing the problems of nurses in the work field, Holt (28) concludes that nurses must insist that educators teach
nursing students how to function in the health system as it actually exists. The author suggests that this can be done through the techniques of becoming change agents and "administrators of health care units and keepers of hospital records" (28, p. 84).

McCormack (39, p. 89) states that the functions of professional nursing are assessment and intervention of health problems of individuals and families, management and evaluation of care given, supervision of other non-professional care givers, application of nursing skills, and active research. She suggests that these functions should take place of the old values that made nurses dependent upon the physician for directing patient nursing care.

Habgood (25, pp. 74-75) states that their associate degree program planned an attack on the problem of reality shock that causes nurses to leave the field. She states that findings indicate that graduates are uncomfortable with their technical skills, lack organizational skills when caring for groups, and demonstrate a lack of knowledge of leadership in the field. Their program, therefore, formulated a plan to include on-campus lab skills, a course in organization of groups, more clinical experience during the last year that extended the program by three weeks, utilization of in-hospital learning opportunities with adjunct instructors, and use of students as peer tutors. It should be noted that most of the experience deals with
in-hospital patients who are ill; health education and prevention is not a major thrust of this program.

McGarth and Bacon (41, p. 41) state that one reason why baccalaureate degrees are pursued by registered nurses who are graduates of technical programs is that they are motivated to learn competencies which are more comprehensive than those learned in their basic programs. Some of the other reasons why nurses return to college are to learn high-level problem solving and decision making, which comes with a liberal arts foundation, more independent practice, and leadership roles. McGarth and Bacon warn, however, that some nurses who are motivated to obtain a baccalaureate degree, but who do not want to proceed through the often frustrating channels that registered nurses from other programs meet when trying to have past experiences evaluated and accepted, often settle for a bachelor's degree in another program; their aim is to have a degree. This degree, however, often allows these nurses to assume positions in which they have more responsibility for patient care but with no concomitant increase in nursing competencies. Many school nurses, who are responsible for direct patient care, choose this route, and it can have serious legal implications, especially in regard to health care for children who have handicaps. Nurses who choose to get a bachelor's degree in another field may not attain a master's degree in nursing.
The ethical, legal, and philosophical issues that accompany patient care demand that the nurse be accountable, independent, and interdependent in that role (22, 5). Greiner (22) argues that an education that meets the needs of nurses today and in the future must incorporate these concepts and have a broad foundation. Greiner further states that utilizing research findings in nursing practice is a current need. The skills that are related to physical assessment, data collection, interpersonal relations, and the biomedical area are the core of a good nursing education. A nursing education that follows the old traditional method, in which a staff of two or three nurses or nursing students could manage a unit and the care of up to forty-five patients, is no longer relevant. Nursing procedures used to be simple, revolving around housekeeping chores (bed baths and bed making), uncomplicated treatments (dressing changes and limited medications), and bedside care (taking temperatures and blood pressures and preparing diet supplements). New technology has changed educational needs of nurses, and diploma schools have endeavored to make those changes. Furthermore, mainstreaming has created demands on the school nurse that require more variations in clinical experience and more in-depth assessment skills than are offered by hospital schools of nursing and associate degree programs (52, 54).
The School Nurse Practitioner Program was developed in the mid-1960's to help school nurses who felt the need for additional skills in the field of school nursing (62). Following this preparation, the school nurse feels equipped to provide counseling, evaluations of student problems (such as long-term therapy and frustrations related to certain health problems such as scoliosis), antepartal and genetic counseling, physical examinations, and health guidance.

There are currently sixteen school nurse practitioner programs in the United States (62, p. 1,674). Standardization of these programs has been attempted using guidelines developed by the American Nursing Association and the American School Health Association. These program guidelines relate to educational preparation and competencies with the intention of preparing school nurses who will have an expanded role. Under the National School Health Project, the Robert Wood Johnson Foundation has placed school nurse practitioners in school clinics in four states to provide accessible health care for children. Following are the questions this program attempts to answer (62). Can the School Nurse Practitioner Program improve children's access to health care? Will children have fewer absences from school because of this health intervention? Will school health
clinics be financially feasible? Will families utilize these clinics because they are accessible?

Smith and Goodwin (67) report that in 1980 the United States Department of Education, Office of Special Education, provided funds for a pilot study for a school nurse achievement program (SNAP) to be conducted by the University of Colorado Health Sciences Center, School of Nursing. The study took place over three years and led to a national needs assessment and the establishment of a continuing education course for school nurses. This program is now available on a nationwide scale and is open to school nurses who want to improve their skills in caring for school children who have disabilities. Course content is designed to cover areas of disability that includes physical disabilities, mental retardation, chronic illness, learning disabilities, and emotional disorders.

Of the 4,000 school districts who were sent questionnaires for the needs assessment, 1,040 school nurses responded and 834 responses were used. The questionnaire sought to determine (a) the knowledge and skills that nurses feel they need to improve their work with children who have handicaps, and (b) the types of programs that would be useful to the nurses. The respondents indicated a definite need for more education, and they felt that continuing educational programs would be useful as well as self-study materials. The needs assessment found that the most-needed
study areas are (a) information about Public Law 94-142, 
(b) the Individual Educational Program (IEP), (c) prin-
ciples and techniques of team development, (d) teaching 
and counseling techniques for the child and the family, 
(e) how to prepare nursing care plans for these students, 
(f) information about specific disabling conditions, 
(g) treatment, and (h) medication procedures.

The needs assessment also sought information regarding 
(a) the types of disabilities that school nurses found 
within their caseloads, (b) the types of nursing inter-
vention provided to both the normal population and the 
children who are disabled, (c) the ratio between school 
nurses and students, and (d) the support (as perceived by 
the school nurse) from the school and community for school 
nurses. In this needs assessment study, the average school 
nurse pupil ratio is 1:2,137. Frequencies and handicaps 
noted in children in the nurses' caseloads are 3 per cent 
have visual-hearing impairments, 4 per cent have speech-
language deficiencies, 4 per cent have specific learning 
disabilities, 3 per cent have emotional-behavior problems, 
3 per cent are mentally retarded, and 2 per cent are 
physically disabled (67, p. 536).

Following the needs assessment, it was determined that 
self-instructional materials, workshops, lectures, seminars, 
and assignments would be most useful to school nurses' 
learning needs. Prior to beginning three all-day group
sessions, which were interspersed throughout an eight-week course, nurses completed independent work. The program is set up in the following manner.

1. Prerequisite materials were developed covering the nursing process and growth and development as independent studies.

2. Group session (week one) covers orientation to the program, information on Public Law 94-142, attitudes about children who have disabilities, and a case study.

3. Self instruction on physical handicaps, chronic illness, and mental retardation (weeks two, three, and four) are completed at home.

4. In group session (week five), areas completed include the school team, case studies, resource-room work, counseling and teaching techniques, behavior management, and information about the IEP.

5. For weeks six and seven, at home, self-instructional units cover emotional disorders, and learning disabilities.

6. The final group session (week eight) is concerned with writing an IEP, resource-room work, case studies, adaptation to disability, and evaluation (67, p. 537).

According to information packets regarding the program, by the completion of supplemental assignments following the eight-week program, the school nurse can earn three hours of graduate credit. The intention of this level is to enable the participant (a) to become familiar with current research
in areas of growth and development, mental retardation, learning disabilities, behavior management, and chronic and handicapping conditions in children, (b) to become familiar with theoretical frameworks, (c) to increase knowledge of the research process, and (d) to conduct a small research project. This is done through workshops, self-instructional units, and assignments of reading, written work, and formulation of research problems (71).

In 1983, all states may apply for the School Nurse Achievement Program in one of three delivery models. Regional groups of several states may share resources through state agencies or professional organizations, or by school districts or counties that have a large number of eligible school nurses. This program has been tested in twelve states with a total enrollment of more than 1,500 school nurses. The cost is $480 plus air fare and expenses for the two three-day training sessions for program coordinators at the University of Colorado. Individual school nurse participants may pay up to $120 within their homestate programs, of which $100 must be paid to the University of Colorado. Applications for starting such a program in new areas must follow an established time table (71).

At the University of Washington, the school of nursing's department of parent and child nursing offers a master's and post-master's program entitled Nursing of Children with Handicapping Conditions (72). The program is unique.
Required courses are related to three core areas of parent-child nursing that include the therapeutic nursing process, research methods, and family growth and development. Recommended courses in related fields are growth and development of children, human genetics for the parent-child specialist, and maternal-child nutrition. Specialty courses for nursing of children who have handicaps involve assessment and diagnosis, behavioral analysis and management strategies, concepts and processes, family adaptations, community programs and social issues, common health problems, and the interdisciplinary team process (72).

Oda (48, pp. 1,677-1,678) states that the school nursing practice role constitutes teaching, counseling, advocacy, coordinating, consulting, and care giving. Problems exist for some nurses who must both teach and nurse; they feel that priorities compete when the nurse has to be responsible for both health and education. Classroom teaching is not considered appropriate by those nurses who do not feel prepared to teach formally. Oda believes that school nursing is composed of three levels that include health supervision, health counseling, and health education. Supervision includes assessment, screening, emergency care, and identification of problem areas. Counseling includes knowing what to do with health information, guidance in health behavior, and recommendations and referrals for problems. Health education involves skills in planning,
promoting, implementing, and consulting in health related matters. For these tasks, Oda believes that additional preparation is needed to acquire these abilities and skills, and the better educated nurse displays observable differences in practice.

In 1980, a two-day workshop on Education in Genetics for Nurses and Social Workers was sponsored by the Office for Maternal and Child Health (53). During that workshop, the following basic assumptions were made about nursing.

1. Nurses have a significant contribution to make in delivery of genetic services.

2. Nurses provide a necessary service to families at risk for genetic disorders.

3. Nurses need additional educational preparation to develop expertise in genetics beyond the basic preparation as a professional nurse.

4. There is a need for nurses prepared at all levels (B.S., M.S., Ph.D.) and in all practice settings (education, administration, service) with knowledge and skill in genetics.

5. Concentration in genetics is necessary for clinical nurse specialists preparing for leadership roles in genetics.

6. Nurses in practice have a need for continuing education to update knowledge and skills in genetics (53).
The workshop participants made the following suggestions for nursing education in genetics.

1. In regard to continuing education programs for nurses, (a) continuing education programs in genetics should be developed for all nurses involved in maternal child health services, including school health, (b) continuing education programs for nurses should show evidence of nursing involvement in planning to insure the genetic content is appropriate to the level of the learner, and (c) clinical component in genetics is highly desirable in continuing education programs.

2. In regard to the baccalaureate program for nurses, (a) a course in human genetics is desirable at this level, (b) human development courses should include genetics in the content, (c) course content and clinical experience in areas such as family planning, maternity services, pediatrics, and school health programs should include appropriate genetic content, and (d) ethical, legal, and social issues in genetics should be a component part of course and clinical offerings.

3. In regard to a master's level program for nurses, (a) training should be in graduate programs of schools of nursing, (b) the candidate should meet academic criteria for admission to National League for Nursing accredited Maternal Child Nursing Program with a clinical nurse specialist option; the candidate will have, or obtain, current
knowledge in the areas of physiology, statistics, embryology, biochemistry, nutrition, assessment skills (physical/psycho-social), and interviewing-counseling skills, (c) the theoretical framework for advanced nursing practice will be provided by schools of nursing, (d) comprehensive courses in both human and medical genetics are required. Human genetics should include patterns of inheritance, cytogenetics, immunogenetics, biochemical genetics, developmental genetics, population genetics, and pharmacogenetics; clinical genetics should include chromosome disorders, Mendelian disorders, multifactorial disorders, congenital malformations, prenatal diagnosis, genetic counseling, and ethical, legal, and social issues (19). (e) there should be collaborative planning with other disciplines such as biology and medicine in order to utilize existing didactic courses and clinical programs, and (f) there should be a clinical component in a comprehensive genetic service program in order to achieve objectives.

Peppe (53, p. 9) states that if principles of genetic counseling were a part of nursing curricula, nurses everywhere would be better prepared to deal with the genetic problems of affected individuals and their families. The study of genetics is not a part of most programs.

As an example of skills needed by nurses who will work with children who have genetically related disabilities, syndromes such as Pierre-Robin and Treacher-Collins often
produce air-way obstruction, and tracheostomies are often needed. Nursing care of these children is built around three basic concepts that include (a) family-centered care in which families are invited to participate in the child's care and siblings are screened for infectious diseases, (b) working with the child who is handicapped within the various stages of normal growth and development and teaching the family in relation to this concept, and (c) development of a support team for the family through advocacy by assisting the family to receive the medical and social services needed by the child (53).

The nurse, in the example, must be prepared to do assessments of the learning needs of parents to develop and implement a plan featuring these needs. The nurse then proceeds to teach the parent when and how to suction the trach, about the equipment to be used and how to clean and maintain it, how to change the ties, skin care of the stoma, changing the tube, how to re-order supplies, moisture control, emergency care, and methods to prevent fear and anxiety within the family structure. This must begin in the hospital and continue anywhere from six months to five years, depending upon the situation, before decannulation is achieved.

During this five years, the school nurse will become involved with the child through his educational program. Children must be taught how to occlude the tubes in order to learn how to talk, and families must speak to such a
child in the same manner as for other children in order to stimulate speech. Nurses must teach the teacher and school principal regarding any precautions and instructions (35).

There are complex psycho-social aspects that nurses must be prepared to deal with in working with families. Tischler (70, p. 733) states that families often block the information given them. He discusses the psychological and sociological behaviors that families experience upon the birth of a child, and he suggests that some of the reasons why people have babies include (a) as an extension of the parent's own sense of pride, joy, and narcissism, (b) as a source of psychological fulfillment for the parent, (c) for the feeling of power a parent senses because of the ability to create life, (d) because the child becomes an "heir to the throne" within the family, and (e) for religious reasons (70, p. 733).

When the child is born with a disability, the family may need to work through difficult feelings which Tischler states are not unlike those described by Kubler-Ross's stages of death. The nurse's ability to counsel, teach, and make proper referrals are essential to nursing care of the family (70).

The scope of nursing practice for associate-degree nurses who are to be prepared in the 1980-1990 era will be limited. According to Huber (29), providers of client care in the associate degree program (ADN) will center on
individual clients rather than groups and families. This nurse will work closely with the baccalaureate nurse in the care of patients who have complex problems. As client teachers, the associate degree nurse will work on short-term goals in the patient's overall plan and will be assisted by the baccalaureate nurse to evaluate the client's learning and to revise the teaching approach as necessary.

As a planner and coordinator of client care, the ADN graduate will work under the guidance of the baccalaureate nurse in finding and providing resources for the client. The ADN graduate will not assign responsibilities to other team members. In the role as communicator, the ADN graduate will communicate therapeutically with individual clients and other health team members, but will not interpret covert communication patterns of the client. This interpretation is considered an advanced skill (29).

The investigative role of the ADN nurse will be to be aware of the significance of research, even to the point of assisting to collect data. The ADN will not, however, be asked to initiate research projects; this, too, requires advanced skill. ADN nurses will be held accountable for their activities within the scope of practice for that program. They will not initiate change as a member of policy making committees but will report problem areas and observations to baccalaureate nurses (29).
Based on the Western Interstate Commission on Higher Education's (WICHE) 1982 ADN employment projections, Huber (29) reports that certain trends are predicted. These trends are that (a) there will be an increased life span as a result of medical and technical advances, (b) more complex, episodic hospital care will be available, (c) there will be greater accessibility to health care services by the client, (d) greater emphasis will be placed on wellness, prevention, and maintenance of wellness by society, and (e) more use will be made of community health care services.

The need for nurses at AD and diploma educational levels will decrease, and the need for baccalaureate nurses and nurses who have more advanced preparation will increase during the 1980s. The greatest employment area for AD and diploma nurses will be in the newborn nursery and operating room. Hospital outpatient clinics, community health clinics, and home health care agencies will be the areas where there is the lowest need for employment of AD nurses. Associate degree and diploma nurses will not be recommended for expanded roles required in public health nursing, school nursing, and occupational nursing. No employment opportunities are expected for AD and diploma nurses in administrative roles or in education; this includes head nurses in hospitals and inservice coordinators (29).

According to Huber (29), there will be many ADN graduates who will wish to have an expanded role and will
therefore seek educational opportunities in colleges and universities. By better planning, articulation can occur without undue expense, time, and repetition of courses and experiences. On the other hand, if baccalaureate nurses are to be the teachers and the more in-depth professionals, this recent study is of concern to the profession.

Ackerman, Partridge, and Kalmer (2) surveyed all 266 accredited baccalaureate programs of the National League for Nursing, of which 200 responded. The intent of the study was to identify content and methods being used to help nursing students develop the skills needed to teach health. It was found that most programs give only minimal attention to the teaching role of nurses. In another study by these researchers, only 53 per cent of 390 practicing nurses responded that their basic educations had included adequate health education content. Respondents to the latter survey suggested that curricula should include health teaching from a prevention aspect, offer more opportunity to practice health education skills and processes, and emphasize the problems that nurses face in implementing health education into practice (2).

The researchers feel that the nurse's role as a teacher of health education cannot be treated lightly in baccalaureate education today because of the trend toward clients' desire for more responsibility and control for their own
health. Curriculums should be re-evaluated to reflect this trend (2).

Registered nurses who return to colleges and universities for a baccalaureate degree are different from generic students and, as a result, may experience anxiety and alienation (50). The RN student brings to the classroom characteristics that require teaching strategies to meet their unique adult learner characteristics.

Many RN students have been educated in hospitals under a medical model that stresses diseases. Baccalaureate programs may use conceptual frameworks such as holism or a health-illness continuum in an integrated curriculum. These stress nursing models to teach nursing care, which are often unfamiliar approaches for the RN (50).

The graduate of a baccalaureate program is considered a generalist who is able to function in a variety of settings rather than a specialist in the hospital setting. Clinical specialties are pursued at the master's level. Parlocha and Hiroki (50) also state that priorities in education are different for the returning RN because families and work hours may interfere with planned school commitments.

Johnson (31) believes that rehabilitation nursing is a challenge that requires a highly skilled and sophisticated professional. Routine nursing measures must be modified to be effective for the rehabilitation patient, and patient
teaching methods must be adapted to meet the needs of children who have handicaps. In the case of the brain damaged child who has memory deficit or the child who has impaired communication ability, for instance, assessment skills previously learned for routine nursing care are inadequate for dealing with their complicated problems. "Patients with multiple, complex problems need nurses who can identify priorities and coordinate a therapeutic program that will be most beneficial for the patient" (31, p. 222).

Porter (59), describing her role as an independent community nurse practitioner who provides services to developmentally disabled children and their families, relates that services were lacking for ongoing developmental assessment of these children and management of their behavior patterns. An informal survey revealed that no one was providing such service in that community prior to the establishment of her practice.

Norris (47) describes the minimal content of the screening program that is designed to prevent illness and disability and detect physical and mental health problems. The program includes a history, physical growth assessment, developmental assessment, physical inspection of unclothed child, inspections of ears, nose, mouth, teeth, and throat, vision screening, hearing screening, screening and lab tests for hereditary or environmental conditions, nutritional status, and immunization status with boosters.
Other screenings include chest x-rays, throat cultures, pinworm slides, blood pressure, serologic tests, drug dependency screening, and stool specimens for parasites (ova and adults), and blood tests.

According to Norris (47), improved skills are vital if mass screening programs are to be efficient and effective. Even though payment for these services has been assured by the federal government, the availability of these services is not assured. Health professionals are urged by the government (60) to develop, expand, and improve the distribution of their clinical resources and facilities.

In a scathing report in Newsweek (61), Ream, who is a retired nursing teacher, describes the bumbling, inept nurses of today who annually kill 56,000 persons through hospital-contracted urinary tract infections from the use of bladder catheters. She cites the many skills that nursing schools are not teaching that would enable nurses to perform in hospitals. "The nurse was not trained to cope, organize or perform and will eventually leave nursing for something she can handle" (61, p. 17). She feels that the cure for this problem is skill training that includes returning to the basic 3,500 to 5,000 hours of patient care. National health needs today demand a nurse who is a generalist or one who can work in any setting rather than one trained as a specialist in one area (50, p. 24).
The initial education that nurses receive will not sustain them forever during their nursing careers. Registered nurses recognize the changing needs of patient health requirements and seek to develop new skills and new competencies. Educators are responsible for meeting the needs of these adult learners, and strategies must be developed to teach them as well as the traditional young generic student (68). The nurse educators must also look at the trends and prepare courses to meet the demands of registered nurses who return to the university for such help (69).

Summary

Public Law 94-142, The Education of All Handicapped Children Act of 1975, mandates that children who have handicaps must receive an appropriate education in the least restrictive environment possible. This does not mean that all children will be placed in the regular classroom, but it does mean that a great many will be and that some children will be placed there only for certain periods during the day.

These children may have handicaps that affect mobility, speech, hearing, learning, vision, and emotion-behavior. The teacher is the person who is responsible for the child's success or failure in the classroom. Although such children are not ill because they have physical or mental disabilities, many disabilities may cause the
affected children to be prone to accidents and other complications and thereby adversely affect classroom experiences (30).

School nurses should be able to assist the teacher in the planning of a successful educational outcome within the ability of the child who is handicapped (66). School nurses are responsible for the health of all school children, and most nurses are well prepared to care for children who are essentially following normal growth and development patterns. Other factors, however, may affect nurses' ability to function well with this added responsibility.

Nurses are prepared at three levels in basic education. Those levels are the associate two-year degree program (usually in a community college), the hospital-based school of nursing diploma program that lasts approximately two and one-half to three years, and the four to four and one-half year university baccalaureate program. Graduates of these programs exit having different levels of nursing skills. Trends for the future are to change these levels even more drastically, making the baccalaureate nurse the professional who is educated to have more extensive role capabilities which includes school nursing. In general, the literature suggests that even baccalaureate nurses may need more background and study in order to work with children who are handicapped.
Nurses are returning to school to gain needed knowledge and clinical expertise (46). Universities are trying to meet the needs of these students who are different from the generic students in baccalaureate programs. In order to meet the needs of public school teachers, children who have handicaps and their families, and the school nurse who is responsible for such children's health care, programs should be offered to fulfill this need area (33).

Such programs may include courses on human genetics, physical assessment of the able-bodied child, physical assessment of the child who has handicaps, and other assessment parameters for nutrition, skills, and environment. The nurse will also need to be able to recognize needs, work with children and families in psychological and sociological stress areas, and care for children who have or need adaptive equipment.

Management of auxiliary personnel is another facet of education that should be presented as well as effective methods for working with administrators to affect changes in health care delivery. Courses in writing and public speaking are essential for present day nurses, and these are rarely included in curriculum planning.
CHAPTER BIBLIOGRAPHY


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76. When You Care for Handicapped Children, Austin, Texas Department of Human Resources, 1979.
CHAPTER III

RESEARCH METHODS AND PROCEDURES
OF THE STUDY

This study is designed to obtain data on factors associated with school nurses' participation in delivering health services in Texas public schools to children with handicaps. The sections into which this study is divided are (a) subjects of the study, (b) development of the research instrument, (c) procedures for the collection of data, and (d) methods of data analysis.

Subjects of the Study

The population studied is public school nurses who are employed in the state of Texas. The nurses were identified from a list of school nurses supplied by the Texas Education Agency (6); the total number of school nurses in the state was approximately 2,600 at the time of the study. It was felt that a random sample of 500 nurses from that number would be representative of the whole. Roscoe (5, p. 184) states that there are few occasions in behavioral research where a sample size larger than 500 can be justified. A randomly selected sample size of 500 increases the likelihood that the investigator's sampling error will not exceed $\sigma/10$ about 98 per cent of the time.
The suggested sample size is one-tenth of the parent population and the selection of 500 exceeds that number.

The acceptable return rate for the questionnaires for this study was arbitrarily set at 300 or 60 per cent. Polit and Hungler (4, p. 348) state that 50 per cent is probably sufficient for most purposes. According to Kerlinger (3, p. 414), returns of 40 to 60 per cent are common and the researcher can regard 60 per cent as acceptable although higher rates are desirable.

Development of the Research Instrument

A self-report questionnaire was designed by the researcher since the survey of the literature did not reveal the existence of an appropriate tool for this study. The questions were designed to provide answers for the study's research questions. The first form of the questionnaire (see Appendix A) was submitted to a panel of experts (see Appendix B) to establish the face validity of the instrument. Face validity consists essentially of *prima facie* judgments concerning whether the instrument appears to measure what it claims to measure; "competent judges should judge the content of the items" (3, p. 459).

The questionnaire, the purpose of the study, the research questions, and a cover letter (see Appendix C) were mailed to seven panel members. Three of the members are from Texas. The other four are from New York, Pennsylvania,
Washington, and Ohio. Panel members were selected on the basis of their publications in the field, experience, and present position. The panel members have had prior experience with children who are handicapped and some are or have been school nurses. Earned doctorates are held by four members and three have master's degrees.

Panel members were asked to examine the research questions for their ability to elicit accurate responses to research questions. Inappropriate questions were discarded and additional items were added as necessary. The panel was also asked to clarify ambiguous wording or phrases in the questionnaire. Following return of the questionnaire from the panel, the final form of the questionnaire was written (see Appendix D).

The research instrument contains forty questions. The first four questions are concerned with demographic data that includes basic nursing educational preparation, date of graduation from basic program, highest degree earned and the type of degree held at present, years of experience in school nursing, and days worked per week.

The remaining questions relate specifically to the research questions. In Category I, the research questions are as follows.

1. What are the handicapping conditions of children who are served by the Texas public school nurses? (This question is answered by questionnaire item 12.)
2. What are the school nurses' perceptions of handicapped children's health problems? (This question is answered by questionnaire items 14, 19, and 21.)

Research questions in Category II are as follows.

3. What preparation do school nurses have that enables them to work with children who have handicaps? (Answered by questionnaire items 1, 2, 3, 13, 22, 23, 24, and 34.)

4. What factors prevent or limit school-based nursing care for children who have handicaps? (Answered by questionnaire items 4, 5, 6, 7, 8, 9, 10, 11, 15, and 16.)

5. Do school nurses in Texas perceive that they meet the health needs of children who have handicaps? (Answered by questionnaire items 17, 18, 25, 26, 27, 28, 29, and 30.)

6. Do school nurses collaborate with public school teachers in preparation of individual education programs (IEP) for children with handicaps? (Answered by questionnaire items 31 and 32.)

7. Do school nurses work with parents to meet the health needs of school-aged children who are handicapped? (Answered by questionnaire item 20.)

Research questions in Category III are as follows.

8. Do Texas public school nurses want to receive more educational preparation to enable them to meet the health needs of children who have handicaps? (Answered by questionnaire items 36, 37, and 38.)
9. What barriers do school nurses perceive as limiting them in obtaining more education? (Answered by item 39.)

10. What courses or special skills do school nurses think would assist them to provide more efficient health care for children who are handicapped? (Answered by questionnaire items 33 and 35.)

11. What special considerations in program planning would make it possible for the school nurses to seek additional educational preparation? (This question was answered by questionnaire item number 40.)

Items in the instrument are designed to be answered with a minimum of difficulty, and it was believed that this factor would increase the percentage of responses. All of the questions, except those designated as "other," require a check mark in the space beside the question. One question (item 10) requires rating eleven items.

Procedures for the Collection of Data

Data for this study were collected during the fall of 1982. A random sample was obtained of school nurses throughout the state by computer from the Texas Education Agency (6). The research questionnaires were mailed on November 16, 1982, to 500 school nurses. A cover letter (see Appendix E) contains an explanation of the purposes of the study and directions for returning the questionnaire. Confidentiality of information was assured to the nurses,
and the rationale for the code number on the questionnaire was explained. Respondents were told a summary of the study would be sent to them upon request. A stamped, preaddressed envelope was enclosed. Code numbers were placed at the top of each questionnaire to designate the names of the respondents as they appeared by school district on the computer print-out; this was used only for the purpose of determining non-respondents for follow-up letters. A response date of November 30, 1982, was requested.

By December 6, 1982, 248 returns had been received (approximately 50 per cent of the sample selected). On December 11, the questionnaire was mailed for the second time to 250 school nurses who had not returned the questionnaires with a second cover letter (see Appendix F) which stresses the importance of responding to the study by December 31, 1982. Another stamped, self-addressed envelope was enclosed. On January 8, 1983, data collection was concluded. At this time, 351 returns were received and because of school nurse retirement, death, or relocation, 332 (66 per cent) of the returned questionnaires were determined to be usable.

Methods of Data Analysis

The analysis of the data was completed and reported using frequency distribution and percentages. Since nominal data with independent samples lend itself to the use of the
chi square test (2), eleven tests were performed to find relationships between selected data acquired from the questionnaire. The relationships tested were (a) the barriers to school-based nursing care of children who have handicaps and the absence of supporting agencies, (b) six relationships between nurses' feelings of competency to work with children who have handicaps and nursing interventions provided, (c) the relationship between nurses' feelings of competence for working with children who are handicapped and nurses' educational background, (d) the relationship between school nurses' plans to acquire more educational preparation and barriers perceived by them for obtaining education, and (e) the relationship between special considerations in program planning of universities and the plans of nurses to seek educational preparation.

The specified level of significance is .05. Four significant relationships were found, and the Freeman-Tukey non-parametric post hoc analysis was done using a two-tailed test with 1.96 significance at the .05 level. The Freeman-Tukey test standardizes residuals between the observed and expected so that the score can be observed in the normal curve and are treated as $z$ scores. A two-tailed test was selected because findings that are both expected and unexpected are of interest in this research study.

The chi squares and the Freeman-Tukey tests were obtained from selected computer programs BMDP 4F two-way
frequency tables (1). Responses to all questions were
examined to identify research content material. The data
were then categorized and frequencies reported.
CHAPTER BIBLIOGRAPHY


CHAPTER IV

PRESENTATION AND ANALYSES OF DATA

Introduction

Survey research was conducted to solicit data from public-school nurses related to their educational backgrounds, the types of handicapping conditions of the children they serve, perceived educational barriers, and their future education plans. A research questionnaire designed specifically for the study was used to gather the data in the fall of 1982. The sample consists of 332 Texas school nurses who were randomly selected by computer, of whom 43 have associate degrees, 142 have diplomas, 117 have baccalaureate degrees, and 30 have master's degrees.

This chapter details the statistical treatment and analyses of data collected for the study. The data are presented and analyzed according to the research questions and hypotheses designed for the purpose of the study.

Data Analyses by Research Questions

Research question one asks, "What are the handicapping conditions of children served by the Texas public school nurses?" Table I data show the number and percentage of nurses within each educational level who identified specific handicapping conditions (from a list of seventeen
TABLE I
IDENTIFICATION BY NURSES OF SPECIFIC HANDICAPPING CONDITIONS
OF CHILDREN WITHIN THEIR CASE LOAD

<table>
<thead>
<tr>
<th>Handicapping Conditions of School Children</th>
<th>Preparation of Nurses by Highest Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Associate N* = 43</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Blindness</td>
<td>14</td>
</tr>
<tr>
<td>Deafness</td>
<td>16</td>
</tr>
<tr>
<td>Hard of hearing</td>
<td>37</td>
</tr>
<tr>
<td>Speech disorders</td>
<td>31</td>
</tr>
<tr>
<td>Cerebral palsy</td>
<td>20</td>
</tr>
<tr>
<td>Spina bifida</td>
<td>13</td>
</tr>
<tr>
<td>Cystic fibrosis</td>
<td>11</td>
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<tr>
<td>Emotional problems</td>
<td>38</td>
</tr>
<tr>
<td>Muscular dystrophy</td>
<td>15</td>
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<tr>
<td>Arthritis</td>
<td>14</td>
</tr>
<tr>
<td>Skeletal disorders</td>
<td>19</td>
</tr>
<tr>
<td>Loss or deformity of extremities</td>
<td>16</td>
</tr>
<tr>
<td>Mental retardation</td>
<td>25</td>
</tr>
<tr>
<td>Learning disabilities</td>
<td>38</td>
</tr>
<tr>
<td>Heart disease</td>
<td>31</td>
</tr>
<tr>
<td>Epilepsy or convulsions</td>
<td>37</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
</tr>
</tbody>
</table>

*N = Number of respondents.
conditions) in children within pupil caseloads. All of the seventeen handicapping conditions were found in the caseloads of some of the nurses in all four educational levels. There are, however, six conditions that were identified by 60 per cent or more of all nurses; these conditions are hearing problems, speech disorders, emotional conditions, learning disorders, heart conditions, and epilepsy or convulsive disorders. Furthermore, at least 60 per cent of the diploma, baccalaureate, and master's degree nurses included mental retardation; baccalaureate nurses included loss or deformity of extremities; master's degree nurses included cerebral palsy.

Research question two asks, "What are the school nurses' perceptions of handicapped children's health problems?" Table II data show the distribution of the sample according to school nurses' level of highest preparation and their identification of the health problems found in their caseload of children who have handicaps.

Twenty seven health problems were presented and all were identified by some of the nurses, but at least 60 per cent of each educational level identified eight common areas. These areas are problems with respiratory function, nutrition, medications, seizures, short attention span, poor social interaction, visual problems, and kidney and bladder disorders. Sixty per cent of the nurses at the diploma, baccalaureate, and master's degree level identified skin
<table>
<thead>
<tr>
<th>Health Conditions of Handicapped Children</th>
<th>Preparation of Nurses by Highest Degree</th>
<th>Associate N* = 43</th>
<th>Diploma N* = 142</th>
<th>Baccalaureate N* = 117</th>
<th>Master's N* = 30</th>
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<tr>
<td>Fearfulness</td>
<td>24</td>
<td>56</td>
<td>77</td>
<td>54</td>
<td>58</td>
</tr>
<tr>
<td>Short attention span</td>
<td>32</td>
<td>74</td>
<td>114</td>
<td>80</td>
<td>96</td>
</tr>
<tr>
<td>Poor social interaction</td>
<td>28</td>
<td>65</td>
<td>97</td>
<td>68</td>
<td>85</td>
</tr>
<tr>
<td>Visual</td>
<td>35</td>
<td>81</td>
<td>87</td>
<td>61</td>
<td>82</td>
</tr>
</tbody>
</table>

*N = Number of respondents.
problems in addition to the other eight problems. Sixty per cent of the master's degree nurses also noted heart disease and fearfulness. Table III data show the areas that school nurses in all four levels of education identified in common at the 60 per cent level and the additional problems identified at the 60 per cent level by school nurses in each of their educational areas.

Research question three asks, "What preparation do school nurses have that enables them to work with children who have handicaps?" The distribution of the respondents according to level of preparation by highest degree is illustrated in Figure 1, which indicates that there are forty-three associate degree nurses, or 13 per cent, of the sample at that level. The diploma nurses represent 43 per cent of the sample with 142 responding. Baccalaureate

![Figure 1](image-url)

Figure 1--Distribution of school nurses by percentage in highest levels of nursing education presently held.
TABLE III

HANDICAPPING CONDITIONS AND HEALTH PROBLEMS IDENTIFIED
BY 60 PER CENT OR MORE OF NURSES WITHIN
EACH EDUCATIONAL LEVEL

<table>
<thead>
<tr>
<th>Identification</th>
<th>Associate</th>
<th>Diploma</th>
<th>Baccalaureate</th>
<th>Master's</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handicapping conditions:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hard of hearing</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Speech disorders</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Cerebral palsy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional problems</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Skeletal disorders</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loss or deformity of extremities</td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Mental retardation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning disabilities</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Heart disease</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Epilepsy or convulsions</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Health problems:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Nutrition</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Medication</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Skin</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Seizures</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Heart disease</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Kidney &amp; bladder</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fearfulness</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Short attention span</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor social interaction</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Visual problems</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>8</td>
<td>9</td>
<td>9</td>
<td>11</td>
</tr>
</tbody>
</table>
nurses (35%) are the next largest group of 117 nurses. Thirty master's degree nurses make up 9 per cent of the sample.

Data revealed that of the 117 baccalaureate nurses who responded, 98 (84%) have degrees in nursing. Of those who have master's degrees, 14 (47%) have degrees in nursing.

Table IV data depicts the number of school nurses who have knowledge of special tests, screening devices, and therapies or who have taken courses which were described in the literature as helpful in working with handicapped children. The data indicate that a higher percentage of master's degree nurses have taken such courses. Physical assessment of the ablebodied child is a skill held by more than 60 per cent of nurses in all educational levels—97 per cent of master's level nurses and 82 per cent of baccalaureate nurses. All percentage levels drop considerably, however, for skills or courses other than physical assessment of the ablebodied child.

Length of time as a school nurse may not prepare nurses to work with children who have handicaps, but it is an important factor. Figures 2, 3, 4, and 5 show distributions of the respondents by years of employment as school nurses for each of the four educational levels. Associate degree nurses (Figure 2) have the highest (67%) distribution in the years between 0-5. Length of employment for diploma nurses
TABLE IV

PREPARATION OF SCHOOL NURSES FOR WORK WITH CHILDREN WHO HAVE HANDICAPS

<table>
<thead>
<tr>
<th>Types of Preparation Enabling Nurses to Work with Handicapped Children</th>
<th>Preparation of Nurses by Highest Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Associate N* = 43</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Courses in human genetics</td>
<td>13</td>
</tr>
<tr>
<td>Physical assessment</td>
<td></td>
</tr>
<tr>
<td>Able bodied child</td>
<td>30</td>
</tr>
<tr>
<td>Physical assessment</td>
<td></td>
</tr>
<tr>
<td>Child with Disability</td>
<td>8</td>
</tr>
<tr>
<td>Assessment of child for anomalies or common syndromes</td>
<td>19</td>
</tr>
<tr>
<td>Knowledge of ten or more tests, screening devices, or therapies</td>
<td>1</td>
</tr>
</tbody>
</table>

*N = Number of respondents.
Figure 2—Distribution of sample by years of employment as school nurse; associate degree level preparation.

(Figure 3) appears to be evenly divided in all time periods. Forty-one per cent of the baccalaureate nurses (Figure 4) have been employed between 0-5 years. Thirty per cent of master's degree nurses (Figure 5) have been school nurses for each period from 0-5 and 6-11 years.

Figure 3—Distribution of sample by years of employment as school nurse; diploma level preparation.
Research question four asks, "What factors prevent or limit school-based nursing care for children who have handicaps?" To determine if nurses who have different levels of education identify different types of responsibilities for nursing care of school children and which nursing functions absorb most of their time, questionnaire item 10 asks nurses to rate a list of jobs.

Figure 4--Distribution of sample by years of employment as school nurse; baccalaureate degree level preparation.

Figure 5--Distribution of sample by years of employment as school nurse; master's degree level preparation.
These data are not presented in tabular form because of the similarity of responses. Nurses at all educational levels listed the same three areas in order of (a) vision and hearing screening, (b) managing children who are hurt or ill, and (c) keeping records. The jobs at which they spend the least time are (a) assisting the physician with school physical examinations, (b) home visits, and (c) immunization clinics. This information is assurance that all nurses have approximately the same responsibilities regardless of school district location and level of education.

Data in Table V cover the factors that limit or prevent school-based nursing care for children who have handicaps. The referral sources that may be a limiting factor because of distance from schools are birth defects centers, Cystic Fibrosis Foundation, outreach teams, Muscular Dystrophy Foundation, Commission for the Blind, speech and hearing clinics, Juvenile Diabetic Foundation, genetic counseling centers, Epilepsy Foundation, Association for Retarded Citizens, services for the blind, United Cerebral Palsy Association, and state schools for the mentally retarded. Medical specialty resources listed whose lack may be a limiting factor are neurologists, neonatologists, pediatricians, genetic counselors and medical geneticists, obstetricians, plastic surgeons, orthopedists, opthalmologists, ear, nose, and throat specialists, and psychiatrists.
### TABLE V

**FACTORS THAT LIMIT OR PREVENT SCHOOL-BASED NURSING CARE FOR CHILDREN WHO HAVE HANDICAPS**

<table>
<thead>
<tr>
<th>Limiting Factors</th>
<th>Preparation of Nurses by Highest Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Associate N* = 43</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Distance to referral sources over 100 miles</td>
<td>3</td>
</tr>
<tr>
<td>Lack of medical specialists</td>
<td>15</td>
</tr>
<tr>
<td>No assistants</td>
<td>31</td>
</tr>
<tr>
<td>Heavy pupil load &gt; 2000</td>
<td>9</td>
</tr>
<tr>
<td>Nurse part-time</td>
<td>3</td>
</tr>
<tr>
<td>School levels responsibility</td>
<td>17</td>
</tr>
<tr>
<td>Stated feelings of inadequacy of preparation in caring for children with handicaps</td>
<td>26</td>
</tr>
<tr>
<td>Lack of assessment course for children with handicaps</td>
<td>35</td>
</tr>
</tbody>
</table>

*N = Number of respondents.*
Associate degree- and diploma-level nurses noted the highest percentages of limiting factors in the areas that relate to pupil care and personal inadequacies. Master's- and baccalaureate-level nurses noted the highest percentages of limiting factors in areas that relate to administrative duties. All levels, however, feel that lack of assistants is an important factor that limits their health-care responsibilities.

The data in Table VI show an examination of the relationships between the limiting factors (barriers) of availability or lack thereof of community support services and nurses' perceptions of (a) feelings of inadequacy in working with handicapped children and (b) their lack of assessment skills. Responses are tabulated without regard to educational preparation. Chi square tests show no statistically significant relationship for either comparison.

Demographic data in Table VII reveal that 42 per cent of the associate degree nurses practice without one or more of the supporting resources within a specified area, 61 per cent feel inadequately prepared to deal with problems of handicapped children, and 79 per cent do not feel qualified to assess handicapped children. Twenty-two per cent of the diploma nurses live in communities in which agencies or medical resources are not readily available, 51 per cent do not feel adequately prepared to care for the health
TABLE VI

RELATIONSHIP BETWEEN BARRIERS TO SCHOOL-BASED NURSING CARE OF CHILDREN WHO HAVE HANDICAPS AND THE ABSENCE OF SUPPORTING AGENCIES

<table>
<thead>
<tr>
<th>Agency and Medical Specialty Resources</th>
<th>Sample Size</th>
<th>Perceptions of Nurses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Available within specified distance of community</td>
<td>254</td>
<td>Inadequate Preparation to Work with Handicapped Children</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Not available within specified distance of community</td>
<td>78</td>
<td>Lack of Assessment Skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N</td>
</tr>
</tbody>
</table>

*N = Number of respondents.

problems of these children, and 79 per cent feel unqualified to complete physical assessments on handicapped children. Of the baccalaureate nurses, 19 per cent lack one or both resources within their communities, 48 per cent do not feel prepared to care for handicapped children, and 82 per cent do not feel qualified to assess handicapped children. Only 7 per cent of the master's degree nurses live in towns without the resources of agencies or medical specialty groups, 27 per cent do not feel prepared to care for handicapped children, and 63 per cent do not feel qualified to assess handicapped children.
TABLE VII

NURSES' IDENTIFICATION OF BARRIERS TO THEIR PROVIDING
HEALTH CARE TO CHILDREN WHO HAVE HANDICAPS

<table>
<thead>
<tr>
<th>Barriers to Providing Nursing Care for Handicapped Children</th>
<th>Preparation of Nurses by Highest Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Associate N*= 43</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Lack agency or medical specialty resources within specific area</td>
<td>18</td>
</tr>
<tr>
<td>Nurses feel inadequately prepared to deal with problems of handicapped children</td>
<td>26</td>
</tr>
<tr>
<td>Nurses do not feel qualified to perform physical assessments on handicapped children</td>
<td>34</td>
</tr>
</tbody>
</table>

*N = Number of respondents.
Research question five asks, "Do school nurses in Texas perceive that they meet the health needs of children with handicaps?" Table VIII data show the types of interventions in the health care of public-school handicapped children by educational level of nurses. Areas of intervention include assisting the teacher, assisting the parents, making referrals, and completing assessments. Data indicate that at least 80 per cent of all nurses assist teachers and make referrals. More master's degree nurses assist parents (53%) and assess children (37%) than do nurses in other educational levels.

Table IX data show the relationships between the nurses' stated feelings of competency to work with handicapped children and specified interventions provided for these children. Use of the chi square test revealed no significant relationship between nurses' feelings of adequate preparation to care for handicapped children and the interventions of assisting the teacher, making referrals, completing assessments, and completing individual education plans. Statistically significant relationships were found at the .0001 level in nurses' interventions with parents and at the .0027 level for feelings of being a part of the educational team.

The Freeman-Tukey post hoc analysis shown in Table X (R: \(z < -1.96, z > +1.96\)) reveals that four areas are significant for a two-tailed test for nurses intervening.
**TABLE VIII**

INTERVENTION BY NURSES IN THE HEALTH CARE OF HANDICAPPED CHILDREN

<table>
<thead>
<tr>
<th>Nursing Interventions for Health Care of Handicapped Children</th>
<th>Preparation of Nurses by Highest Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Associate N* = 43</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Assist teacher with health problems of handicapped children</td>
<td>35</td>
</tr>
<tr>
<td>Assist parents with health problems of handicapped children</td>
<td>15</td>
</tr>
<tr>
<td>Make referrals to agencies serving the handicapped children</td>
<td>37</td>
</tr>
<tr>
<td>Complete assessments of children who have handicaps</td>
<td>5</td>
</tr>
</tbody>
</table>

*N = Number of respondents.
TABLE IX

RELATIONSHIP BETWEEN NURSES' FEELINGS OF COMPETENCY TO WORK WITH CHILDREN WHO HAVE HANDICAPS AND NURSING INTERVENTIONS PROVIDED

<table>
<thead>
<tr>
<th>Nurses' Perceptions</th>
<th>Sample N</th>
<th>Assist Teacher</th>
<th>Assist Parents</th>
<th>Referral</th>
<th>Complete Assessments of Children with Handicaps</th>
<th>Complete Individual Education Program</th>
<th>Part of Educational Planning Team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not feel adequately prepared to work with children who have handicaps</td>
<td>162</td>
<td>127 78</td>
<td>44 27</td>
<td>131 81</td>
<td>24 15</td>
<td>37 23</td>
<td>99 61</td>
</tr>
<tr>
<td>Feel adequately prepared to work with children who have handicaps</td>
<td>162</td>
<td>131 81</td>
<td>107 66</td>
<td>139 86</td>
<td>35 22</td>
<td>39 24</td>
<td>124 77</td>
</tr>
</tbody>
</table>

*Chi square value = 49.277; level of significance = .0001.

**Chi square value = 8.991; level of significance = .0027.
TABLE X

FREEMAN-TUKEY DEVIATES (F-T) POST HOC ANALYSIS FOR CHI SQUARE FOR TABLE IX DATA

<table>
<thead>
<tr>
<th>Nurses' Perceptions</th>
<th>Nurses Assist Parents</th>
<th>Nurses Do Not Assist Parents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feel prepared to work with children who have handicaps</td>
<td>EXP 75.5</td>
<td>EXP 86.5</td>
</tr>
<tr>
<td></td>
<td>OB 107</td>
<td>OB 55</td>
</tr>
<tr>
<td></td>
<td>F-T 3.3*</td>
<td>F-T -3.7*</td>
</tr>
<tr>
<td>Do not feel prepared to work with children who have handicaps</td>
<td>EXP 75.5</td>
<td>EXP 86.5</td>
</tr>
<tr>
<td></td>
<td>OB 44</td>
<td>OB 118</td>
</tr>
<tr>
<td></td>
<td>F-T -4.1*</td>
<td>F-T 3.1*</td>
</tr>
</tbody>
</table>

*Significant

with parents. The F-T deviates are 3.3 for nurses who feel prepared and assist parents and -3.7 for those who do not assist parents, each of which is significant at the .001 level. For those who do not feel prepared yet assist parents, the F-T is -4.1, and the F-T is 3.1 for those who do not assist parents, which are significant at .001 and .01 levels, respectively.

The Freeman-Tukey post hoc analysis (Table XI) was completed to determine the cell differences in nurses' feelings of competence and whether or not nurses are considered a part of the educational team. The Freeman-Tukey (R:z ≤ - 1.96, z ≥ + 1.96) shows no significances at the .05 level.
TABLE XI

FREEMAN-TUKEY DEVIATES (F-T) POST HOC ANALYSIS FOR CHI SQUARE FOR TABLE IX DATA

<table>
<thead>
<tr>
<th>Nurses' Perceptions</th>
<th>Nurses Considered Part of Educational Team</th>
<th>Nurses Not Considered Part of Team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feel prepared to work with children who have handicaps</td>
<td>EXP 111.5</td>
<td>EXP 50.5</td>
</tr>
<tr>
<td></td>
<td>OB 124</td>
<td>OB 38</td>
</tr>
<tr>
<td></td>
<td>F-T -1.2</td>
<td>F-T -1.8</td>
</tr>
<tr>
<td>Do not feel prepared to work with children who have handicaps</td>
<td>EXP 111.5</td>
<td>EXP 50.5</td>
</tr>
<tr>
<td></td>
<td>OB 99</td>
<td>OB 63</td>
</tr>
<tr>
<td></td>
<td>F-T -1.2</td>
<td>F-T 1.7</td>
</tr>
</tbody>
</table>

The relationships between feelings of inadequate preparation to work with handicapped children and nurses' educational background are shown in Table XII. Of the associate degree nurses 61 per cent do not feel adequately prepared to work with handicapped children; by contrast, 73 per cent of the master's degree nurses feel adequately prepared.

A chi square test shows a significant relationship at the .0338 level between nurses' level of educational preparation and their feelings of being adequately prepared to work with children who are handicapped. A Freeman-Tukey post hoc analysis (Table XIII) shows a significance at the .05 level for master's level nurses who did not feel
TABLE XII

RELATIONSHIP BETWEEN NURSES' FEELINGS OF COMPETENCE FOR WORKING WITH CHILDREN WHO HAVE HANDICAPS AND NURSES' EDUCATIONAL BACKGROUND

<table>
<thead>
<tr>
<th>Nurses' Perceptions</th>
<th>Sample Size</th>
<th>Preparation of Nurses by Highest Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N* = 162</td>
<td>Associate N* = 43</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diploma N* = 142</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Baccalaureate N* = 117</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Master's N* = 30</td>
</tr>
<tr>
<td>Do not feel adequately prepared to work with children who have handicaps</td>
<td>162</td>
<td>26 61 72 51 56 49 8 27</td>
</tr>
<tr>
<td>Feel adequately prepared to work with children who have handicaps</td>
<td>162</td>
<td>17 40 66 47 57 49 22 73</td>
</tr>
</tbody>
</table>

*N = Number of respondents.

Chi square value = 8.687; level of significance = .0338.
<table>
<thead>
<tr>
<th>Nurses' Perceptions</th>
<th>Levels of Education</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Associate</td>
<td>Diploma</td>
</tr>
<tr>
<td>Do not feel prepared</td>
<td>EXP 21.5</td>
<td>EXP 69</td>
</tr>
<tr>
<td></td>
<td>OB 26</td>
<td>OB 72</td>
</tr>
<tr>
<td></td>
<td>F-T 1</td>
<td>F-T 0.4</td>
</tr>
<tr>
<td>Feel prepared</td>
<td>EXP 21.5</td>
<td>EXP 69</td>
</tr>
<tr>
<td></td>
<td>OB 17</td>
<td>OB 66</td>
</tr>
<tr>
<td></td>
<td>F-T -1</td>
<td>F-T -0.3</td>
</tr>
</tbody>
</table>

*Significant

prepared (-2.0). This indicates that fewer master's level nurses feel unprepared than one would expect by chance.

Research question six asks, "Do school nurses collaborate with public school teachers in the preparation of individual education programs (IEP) for children with handicaps?" Table XIV data show incidence of nurses who have completed IEPs for school children who have handicaps and who are considered part of the educational planning team. Over 60 per cent of all nurses report being considered part of the educational team with the highest percentage being master's degree nurses (83%) and baccalaureate nurses (74%). However, the highest percentage of collaboration in the IEP process is by the master's degree nurses at 43 per cent as compared to 14 per cent for the associate degree nurses,
TABLE XIV

NURSES' COLLABORATION IN INDIVIDUAL EDUCATION PROGRAM (IEP) PROCESS

<table>
<thead>
<tr>
<th>Activities of Collaboration in IEP Process</th>
<th>Preparation of Nurses by Highest Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Associate N* = 43</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Complete IEP process</td>
<td>6</td>
</tr>
<tr>
<td>Part of educational planning team</td>
<td>28</td>
</tr>
</tbody>
</table>

*N = Number of respondents.
16 per cent for diploma nurses, and 29 per cent for baccalaureate nurses.

Research question seven asks, "Do school nurses work with parents to meet the health needs of school aged children who are handicapped?" The frequency of requests to nurses by parents for assistance with the health problems of their handicapped children is not presented in tabular form because the data are limited. The greatest incidence (53%) of requests for assistance is reported by the master's degree nurses (N = 16). Forty-one per cent of the baccalaureate nurses (N = 48), 39 per cent of the diploma nurses (N = 55), and 35 per cent of the associate degree nurses (N = 15) assist parents in this health care area.

Research question eight asks, "Do public school nurses want to receive more educational preparation to enable them to meet the health needs of children with handicaps?" Table XV data reflects the responses of nurses who feel a need for more education to work with handicapped children. Of the associate degree school nurses, 84 per cent feel a need for more education; 93 per cent would attend educational workshops in the area but only 70 per cent would attend a university program. Seventy-eight per cent of the diploma nurses feel the need for more education; 87 per cent would attend educational workshops, and 52 per cent would attend a university program. Eighty-four per cent of the baccalaureate nurses report a need to acquire more education
### TABLE XV

**NURSES' EDUCATIONAL NEEDS AND GOALS**

<table>
<thead>
<tr>
<th>Educational Needs and Goals</th>
<th>Preparation of Nurses by Highest Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Associate N* = 43</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Need more education to work with handicapped children</td>
<td>36</td>
</tr>
<tr>
<td>Would attend educational workshops</td>
<td>40</td>
</tr>
<tr>
<td>Would attend university program</td>
<td>30</td>
</tr>
</tbody>
</table>

* N = Number of respondents.
to work with handicapped children; 92 per cent would attend educational workshops, and 63 per cent would attend university programs. Of the master's degree nurses, 57 per cent feel a need for more education in this field; 77 per cent would attend educational workshops, and 57 per cent indicate a desire to attend a university program. These data show that nurses in all of the educational levels feel less inclined to attend university programs than continuing education programs. Master's prepared nurses feel the least of the respondent group's need for more education to work with handicapped children; they are more inclined to attend continuing education programs than university programs. Diploma nurses also express less interest in a university program than the associate degree and baccalaureate nurses.

Research question nine asks, "What barriers do school nurses perceive as limiting them in obtaining more education?" The data for number of nurses who reported barriers to educational plans are shown in Table XVI. The listed barriers are repeating courses, lack of prerequisite courses, commuting distance to the university, course offerings incompatible with work hours, living arrangements (such as the presence of family responsibilities or financial obligations), and others which include age, lack of initiative, and no financial incentive to get more education. In general, nurses at the associate degree and diploma educational levels perceive the most barriers.
### TABLE XVI

NURSES' PERCEPTIONS OF BARRIERS TO EDUCATIONAL PLANS

<table>
<thead>
<tr>
<th>Educational Barriers</th>
<th>Preparation of Nurses by Highest Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Associate N* = 43</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Repeat courses</td>
<td>5</td>
</tr>
<tr>
<td>Lack of prerequisites</td>
<td>3</td>
</tr>
<tr>
<td>Distance to university</td>
<td>20</td>
</tr>
<tr>
<td>Hours courses offered</td>
<td>25</td>
</tr>
<tr>
<td>Living arrangements</td>
<td>31</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
</tr>
</tbody>
</table>

*N = Number of respondents.*
Associate prepared nurses feel that family and finances interfere the most (72%) and hours of course offerings (88%) are also incompatible with their schedules. Diploma nurses feel that they would have to repeat too many courses. Many master's prepared nurses feel that they have achieved the educational level required for their jobs. Associate degree nurses, who have been school nurses for the least amount of time, state that family obligations hinder their university attendance at this time. Associate degree nurses, who have a background in college work, do not lack as many prerequisite courses as registered nurses who are prepared in hospital schools of nursing. This is shown by 46 per cent of the diploma level nurses who list it as a barrier compared to 12 per cent of the associate degree level, 9 per cent of baccalaureate nurses, and 10 per cent of the master's degree nurses. Barriers are listed whether or not the nurse answered yes or no to the questionnaire item that asked them if they would like to attend a degree program.

Table XVII data show the relationship between the desire of nurses to attend a degree program and perceived barriers. A chi square test shows significant relationship at the .00001 level between the need expressed by nurses for more education and barriers they reported for obtaining that education.

A Freeman-Tukey post hoc analysis was performed (R:z \leq -1.96, z \geq +1.96) for a two-tailed test, the data
TABLE XVII

RELATIONSHIP BETWEEN SCHOOL NURSES' PERCEPTIONS
OF EDUCATIONAL GOALS AND BARRIERS

<table>
<thead>
<tr>
<th>Barriers</th>
<th>Preparation of Nurses by Highest Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Associate N = 43</td>
</tr>
<tr>
<td>Repeat courses</td>
<td>5</td>
</tr>
<tr>
<td>Lack of prerequisites</td>
<td>3</td>
</tr>
<tr>
<td>Distance to university</td>
<td>20</td>
</tr>
<tr>
<td>Hours courses are offered</td>
<td>3</td>
</tr>
<tr>
<td>Living arrangements</td>
<td>31</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
</tr>
</tbody>
</table>

Chi square value = 66.027; level of significance = .00001.
findings for which are shown in Table XVIII. Associate
degree nurses feel that the hours at which courses are
offered is less of a problem (-3.7) than would be expected
by chance (significant at the .001 level); living arrange-
ments, however, is significant at the .01 level (2.6) and
indicates that more of these nurses find this to be a
problem than would be expected by chance alone. At the
diploma level, the Freeman-Tukey deviate (3.2) is signifi-
cant at the .01 level, which indicates that more diploma
nurses find that repeating courses is more of a problem than
would be expected by chance; living arrangements for this
group of nurses is less of a problem (-2.6) than expected by
change (significant at the .02 level). Baccalaureate nurses'
indicate by their responses that repeating courses is less
of a problem than would be expected by chance (significant
at the .001 level). No significant differences are found at
the master's degree level.

In Figures 6 through 9, demographic data are shown that
should be examined with question 9 since some of the school
nurses indicate that age and imminent retirement are reasons
for seeking no further education. These figures show the
distribution of the total respondents by years since
graduation from basic nursing. These data indicate that
associate degree nurses have a higher rate (44%) at the six-
to-ten year period since graduation; 56 per cent is dis-
persed over the other time areas. For the diploma nurses,
<table>
<thead>
<tr>
<th>Barriers to Education</th>
<th>Levels of Education</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Associate</td>
</tr>
<tr>
<td>Repeat courses</td>
<td>EXP 10.4</td>
</tr>
<tr>
<td></td>
<td>OB 5</td>
</tr>
<tr>
<td></td>
<td>F-T -1.8</td>
</tr>
<tr>
<td>Lack of prerequisites</td>
<td>EXP 5.2</td>
</tr>
<tr>
<td></td>
<td>OB 3</td>
</tr>
<tr>
<td></td>
<td>F-T -0.9</td>
</tr>
<tr>
<td>Distance to university</td>
<td>EXP 13.8</td>
</tr>
<tr>
<td></td>
<td>OB 20</td>
</tr>
<tr>
<td></td>
<td>F-T 1.6</td>
</tr>
<tr>
<td>Hours courses are offered</td>
<td>EXP 13.5</td>
</tr>
<tr>
<td></td>
<td>OB 3</td>
</tr>
<tr>
<td></td>
<td>F-T -3.7*</td>
</tr>
<tr>
<td>Living arrangements</td>
<td>EXP 18.5</td>
</tr>
<tr>
<td></td>
<td>OB 31</td>
</tr>
<tr>
<td></td>
<td>F-T 2.6*</td>
</tr>
<tr>
<td>Other</td>
<td>EXP 6.7</td>
</tr>
<tr>
<td></td>
<td>OB 6</td>
</tr>
<tr>
<td></td>
<td>F-T 0.2</td>
</tr>
</tbody>
</table>

*Significant.
79 per cent have been nurses for over twenty years since graduation; 20 per cent is in the other time divisions. For the baccalaureate nurses, 44 per cent have been nurses for over twenty years since graduation; 56 per cent is in the other time periods. For the master's degree nurses, 46 per cent graduated from their basic nursing program twenty years ago; 50 per cent is dispersed over the other time periods.

Figure 6--Distribution of sample by years since graduation from basic nursing program; associate degree nurses.
Figure 7—Distribution of sample by years since graduation from basic nursing program; diploma nurses.

Figure 8—Distribution of sample by years since graduation from basic nursing program; baccalaureate nurses.
Research question ten asks, "What courses or special skills do school nurses think would assist them more efficiently to provide for the health needs of children who are handicapped?" Based on the review of literature and the suggestions of the panel of experts, a list of courses was drawn up that would be helpful to nurses who work with children who have handicaps.

Nurses were asked to identify the courses that they feel would be most useful to them; the results are shown in Table XIX. The courses that 50 per cent or more of all respondent nurses feel would be most helpful are human genetics, physical assessment of the child with disability, nursing care of the child with neuro-sensory loss, and courses that would inform them about tests, screening
## TABLE XIX

NURSES' PERCEPTIONS OF NEED FOR ADDITIONAL COURSEWORK OR SKILLS FOR PROVISION OF BETTER HEALTH CARE FOR HANDICAPPED CHILDREN

<table>
<thead>
<tr>
<th>Courses and Skills</th>
<th>Preparation of Nurses by Highest Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Associate N* = 43</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Human genetics</td>
<td>26</td>
</tr>
<tr>
<td>Motor deficits</td>
<td>22</td>
</tr>
<tr>
<td>Assessment parameters:</td>
<td></td>
</tr>
<tr>
<td>Physical-abled bodied child</td>
<td>29</td>
</tr>
<tr>
<td>Physical-child with disabilities</td>
<td>32</td>
</tr>
<tr>
<td>Environmental</td>
<td>19</td>
</tr>
<tr>
<td>Skills</td>
<td>18</td>
</tr>
<tr>
<td>Nutritional</td>
<td>25</td>
</tr>
<tr>
<td>Adaptive devices</td>
<td>23</td>
</tr>
<tr>
<td>Nursing Procedures-</td>
<td></td>
</tr>
<tr>
<td>neuro-sensory loss</td>
<td>26</td>
</tr>
<tr>
<td>Mental retardation</td>
<td>23</td>
</tr>
<tr>
<td>IEP process</td>
<td>22</td>
</tr>
<tr>
<td>Social relations</td>
<td>25</td>
</tr>
<tr>
<td>Screening, tests, therapies</td>
<td>35</td>
</tr>
</tbody>
</table>

*N = Number of respondents.
devices, and therapies which are used frequently by professionals who work with children who are handicapped. Associate degree nurses checked useful eleven courses; diploma nurses checked useful eight courses; baccalaureate nurses checked ten useful courses; master's degree nurses checked four useful courses, which are the same listed courses (as above) that all nurses checked in common at the 50 per cent level.

Research question eleven asks, "What special consideration in program planning would make it possible for the school nurse to seek additional educational preparation?" Table XX data show the responses of nurses in the four educational levels to special considerations which universities could provide that would induce nurses to seek more education. These inducements are evening classes, weekend classes, summer classes, weekdays, overnight dorms, continuing education, independent studies, teleconferences, and videotaped or correspondence courses.

The relationships between these special considerations and the desire of nurses to seek more educational preparation are presented in Table XXI. The chi square test indicates no significant relationships for special considerations of universities' program planning and nurses' plans to seek further educational preparation.
TABLE XX
SPECIAL CONSIDERATIONS OF SCHOOL NURSES REGARDING EDUCATIONAL PROGRAMS

<table>
<thead>
<tr>
<th>Special Considerations</th>
<th>Preparation of Nurses by Highest Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Associate N* = 43</td>
</tr>
<tr>
<td></td>
<td>Diploma N* = 142</td>
</tr>
<tr>
<td></td>
<td>Baccalaureate N* = 117</td>
</tr>
<tr>
<td></td>
<td>Master's N* = 30</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Evening classes</td>
<td>19</td>
</tr>
<tr>
<td>Weekend classes</td>
<td>17</td>
</tr>
<tr>
<td>Summer classes</td>
<td>27</td>
</tr>
<tr>
<td>Week days</td>
<td>5</td>
</tr>
<tr>
<td>Over-night dorms</td>
<td>14</td>
</tr>
<tr>
<td>Continuing education</td>
<td>26</td>
</tr>
<tr>
<td>Independent studies</td>
<td>13</td>
</tr>
<tr>
<td>Teleconference</td>
<td>6</td>
</tr>
<tr>
<td>Videotaped or correspondence courses</td>
<td>10</td>
</tr>
</tbody>
</table>

N* = Number of respondents.
TABLE XXI

RELATIONSHIP BETWEEN SPECIAL CONSIDERATIONS IN PROGRAM PLANNING OF UNIVERSITIES AND THE PLANS OF NURSES TO SEEK EDUCATIONAL PREPARATION

<table>
<thead>
<tr>
<th>Special Considerations</th>
<th>Preparation of Nurses by Highest Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Associate N* = 43</td>
</tr>
<tr>
<td>Evenings</td>
<td>15</td>
</tr>
<tr>
<td>Weekends</td>
<td>14</td>
</tr>
<tr>
<td>Summers</td>
<td>23</td>
</tr>
<tr>
<td>Week days</td>
<td>3</td>
</tr>
<tr>
<td>Over-night dorms</td>
<td>12</td>
</tr>
<tr>
<td>Continuing education</td>
<td>23</td>
</tr>
<tr>
<td>Independent studies</td>
<td>10</td>
</tr>
<tr>
<td>Teleconference</td>
<td>6</td>
</tr>
<tr>
<td>Videotaped or correspondence courses</td>
<td>8</td>
</tr>
</tbody>
</table>

N* = Number of respondents.
CHAPTER V

SUMMARY, CONCLUSIONS, RECOMMENDATIONS, AND GUIDELINES

Summary

This study examines the factors that are related to the participation of Texas public school nurses in the delivery of health care services to children who have handicaps. Information was obtained for three research categories. The first category is the identification of handicaps in some of the school children in the nurses' caseload and the nurses' perceptions of such children's health problems. The second category is the nurses' identification of their own educational preparation in nursing, skills they identify as helpful in giving care to children who have handicaps, and problems or barriers that might prevent or limit nursing care of school children who have handicaps. The third category is concerned with the future plans of nurses for obtaining education in a university program or workshops, identification of barriers they perceive as hindering their attendance of university programs, and identification of special program planning that would make university attendance more feasible.
Summary of Data Findings

An analysis and interpretation of the data obtained for this study reveals the following major findings:

1. From a list of seventeen handicapping conditions the respondent nurses identified those conditions of children within their caseload. A condition is counted when 60 per cent or more of the nurses in each of the educational levels identified a particular condition. Six handicapping conditions were identified by all respondents. As educational preparation increases, the number of identified conditions also increases; master's degree nurses noted nine areas.

2. Of the twenty-seven health problems listed, 60 per cent of the nurses identified eight common areas; master's degree nurses noted eleven health problems.

3. A diploma is held as the highest level of nursing preparation by 43 per cent of the responding nurses; baccalaureate degrees are held by 35 per cent; associate degree nurses comprise 13 per cent, master's degree prepared nurses comprise 9 per cent of the respondents.

An analysis of educational level data reveals that 38 diploma nurses have received baccalaureate degrees; 17 of which are not in nursing. Four associate degree nurses have received baccalaureate degrees, two of which are not in nursing. Eleven diploma nurses have received master's degrees, 9 of which are not in nursing, and 1 associate
degree nurse has acquired a master's in another field. Fifteen generic baccalaureate nurses have acquired master's degrees, 6 of which are in another field. In total, 98 (84%) nurses have baccalaureate degrees in nursing; 16 (53%) nurses have master's degrees in nursing.

Of the courses that experts view as good preparation for the nurse who must provide health care to children who have handicaps, only "physical assessment of the able bodied child" has been studied by more than 60 per cent of the respondents; 97 per cent of master's degree prepared nurses have taken this course compared to a low of 63 per cent by diploma nurses. All other post-graduate courses were taken by less than 60 per cent of the sample.

In regard to number of years worked as public school nurses, the highest percentage (67%) of associate degree nurses have worked 0-5 years, and 25 per cent of the diploma nurses have worked 0-5 years, but the percentages are very similar for all years thereafter. Forty-one per cent of the baccalaureate nurses have been school nurses for 0-5 years, and 30 per cent of the master's degree nurses have been school nurses each for 0-5 and 6-11 years.

4. To determine factors which limit the school nurse in caring for children who have handicaps, several aspects of school nursing were considered. One purpose for rating the activities commonly associated with school nursing was to determine if school nurses who have different levels
of education would identify different types of responsi-

bilities for nursing care of school children; another

purpose was to determine which nursing functions claim most

of their attention. Nurses at all four levels of educa-
tional preparation identified three areas in common that
demand most of their attention; these are vision and hearing
screening, managing children who are hurt or ill, and
keeping records. The activities that require the least
amount of time are assisting the physician with school
physical examinations, home visits, and immunization
clinics.

In regard to the availability of agencies that serve
handicapped children and their families, if the agency is
more than 100 miles from the school nurse's purview, it was
considered a factor that limits or prevents school-based
nursing care for children with handicaps. Other suggested
limiting factors were lack of medical specialists within the
community, no nursing assistants, heavy pupil load of 2,000
or more students, part-time employment of nurses, responsi-
bility for more than one educational level (elementary,
junior high, or high school), nurses' feelings of inadequacy,
and nurses' lack of preparatory education for doing physical
assessments on children. Of the listed limiting factors,
the only two checked by 60 per cent or more of the sample
are (a) no available assistants provided by the school
district, and (b) inadequate educational preparation in the
physical assessment of children who have handicaps. Statistical analyses, using chi square and the Freeman-Tukey non-parametric post hoc analysis, reveals no significant relationships between feelings of inadequate preparation or lacking assessment skills and distance from agencies or doctors.

Nurses in all educational levels were found to feel unqualified to perform physical assessments on children with handicaps at over the 60 per cent level. More associate degree nurses (42%) are found in areas without supporting agencies and medical specialty resources. More associate degree nurses (61%) also feel inadequately prepared to care for children with handicaps.

5. Eighty per cent or more of all respondent nurses intervene in the care of handicapped children by assisting the teacher with health problems and making referrals to agencies serving the handicapped. In regard to the relationships between six areas of intervention and the nurses' stated feelings of adequate or inadequate preparation to work with children with handicaps, the statistically significant areas are assisting parents of children who have handicaps and being considered a part of the educational team.

Further analysis using the Freeman-Tukey test indicates that more of those nurses who feel prepared to do so assist parents than could be accounted for by chance, and fewer of
those nurses who feel unprepared assist parents than could be accounted for by chance. Nurses who feel prepared to work with handicapped children but do not assist parents are fewer in number than would be expected by chance; in contrast, those nurses who do not feel prepared to care for this special population of children did not assist the parents in greater numbers than could be expected by chance.

The significant chi square shows that nurses who feel prepared are considered by their school districts to be part of the educational team; some nurses who do not feel prepared to work with children who are handicapped are also considered a part of the team. There are, however, fewer nurses who feel prepared and are not considered part of the team than there are those who feel unprepared and are not considered a part of the team. Although the Freeman–Tukey post hoc analysis fails to show the difference or contrast, there is probably some difference or contrast other than that of the one-cell-at-a-time test. Another relationship between the nurses' stated feelings of adequate preparation for working with children who have handicaps and the nurses' educational levels indicates that fewer master's degree nurses, than could be accounted for by chance alone, feel unprepared to work with children who have handicaps.

6. Of the nurses who collaborate on the individual education plans (IEP) and who are considered a part of the educational planning team, fewer than half (43%) of the
master's degree nurses complete the IEP and even fewer of the nurses at other levels complete these plans. More than 60 per cent of the nurses at all levels of education, however, collaborate on the educational team in some way. A larger percentage (83%) of master's degree nurses collaborate than the other nurses.

7. Fifty-three per cent of the nurses who hold master's degrees are called for assistance by parents of children who have handicaps. As educational level declines, the percentage drops to a low of 35 per cent for associate degree nurses.

8. Seventy-eight per cent of the diploma nurses, 84 per cent of both associate degree and baccalaureate nurses, and 57 per cent of the master's degree nurses feel that they need more education to work with children who have handicaps. Over 70 per cent of nurses at all four educational levels would attend educational workshops. Over 60 per cent each of the associate and baccalaureate degree nurses have educational goals of attending a university. Over 50 per cent each of the diploma and master's degree nurses would attend a university program if offered, but the diploma nurses feel the least inclined to attend.

9. The relationships were examined among six possible barriers to furthering their education in a university and the educational level of nurses. The Freeman-Tukey post hoc analysis of significant relationships reveals that the two
areas at the associate degree level are the hours at which courses were offered (less of a barrier than expected by chance) and living arrangements (greater than would be expected by chance alone). For diploma nurses, the barrier of repeating courses is greater than expected, but living arrangements is less of a problem than would be expected by chance. For baccalaureate nurses, fewer nurses identified repeating courses as a barrier than would be expected by chance. There were no barriers noted at the master's degree level.

Since imminent retirement could be a factor related to nurses not wanting to return to school, an analysis was made of the years that nurses graduated from their basic nursing program. Sixty per cent of the associate degree nurses had been practicing nursing for less than 10 years, and 79 per cent of the diploma prepared nurses had been practicing over 20 years. Fifty-four per cent of all respondents had been nurses for over 20 years.

10. Sixty per cent or more of all respondent nurses believe that courses in human genetics would be helpful to them in providing nursing care for children who have handicaps. Sixty per cent of the baccalaureate nurses would take courses in nursing care of the child with motor deficits. Sixty-seven per cent of associate degree nurses would take courses in physical assessment of the able-bodied child. Although 70 per cent of the respondents have had such a
course, 67 per cent would take physical assessment of the able-bodied child if offered. Sixty per cent or more of the associate degree, diploma, and baccalaureate nurses would like courses in physical assessment of the child who has handicaps. Sixty-one per cent of associate degree nurses would take courses in nursing procedures to use with children who have neuro-sensory loss.

Sixty per cent of baccalaureate nurses would take courses in the preparation of the Individual Education Program (IEP). Even though nurses feel prepared to work with children who have handicaps, this does not indicate participation in the IEP process; only 31 per cent of the school nurses perform this function. Seventy per cent or more of the respondent nurses want to know more about specific tests, screening devices, and therapies used by the health and educational teams that work with children who have handicaps; 77 per cent or more of all nurses would attend workshops to prepare them to work with these children. Sixty-three per cent of the baccalaureate degree nurses and 70 per cent of the associate degree nurses would attend such a university program.

11. Of the nurses who state an interest in special considerations for educational programs, 63 per cent of the associate degree nurses are interested in summer programs. Over 60 per cent of the associate, baccalaureate, and master's degree nurses are interested in continuing
education studies. Nurses who would be able to attend a university program were asked to identify the areas of special consideration in which they would be interested. A chi square test was used to discover any relationships between plans of nurses at the various educational levels for more education and the special program considerations of universities. No statistically significant differences were found.

Conclusions

The following conclusions are based on the findings of this study:

1. All of the conditions determined by the federal government as handicapping conditions are noted in the case-loads of school nurses throughout Texas; the most prevalent conditions are hearing, speech, emotional, and learning disabilities, heart disease, and epilepsy or convulsive disorders. As educational preparation increases, however, nurses' identification of handicapping conditions also increases. This may indicate that the higher the nurses' educational level, the greater the involvement with handicapped children or the greater the ability to identify handicapping conditions. Master's level nurses identified the most handicapping conditions.

2. Health problems of children with handicaps as perceived by school nurses also increases as the school nurses'
educational preparation increases. Master's level nurses identified more health problems than nurses in the other three levels.

3. Preparation that enables nurses to work with children who have handicaps was examined in terms of level of highest preparation and specifically related individual courses. A nursing diploma is the highest preparation held by the majority of the respondent Texas public school nurses. Most of the diploma, baccalaureate, and master's degree nurses have been registered nurses for 20 years or more and have had several prior years' experience in other fields. Associate degree nurses have been school nurses for the least amount of time and they appear to have had the least experience in other fields of nursing prior to becoming school nurses.

The only specific skill or course that the majority of the nurses have taken is physical assessment of the able-bodied child. Most nurses have neither learned skills nor taken courses that help them provide health care for the handicapped child. Ability to assess the child is the first step in this nursing process, and correct interventions are the direct result of a nursing assessment.

There appears to be no difference in nursing activities based on educational preparation when providing health care to children within the nurses' caseload. A majority of the school nurses across the educational levels identified the
same areas where they spend the most and the least of their time with children's health care.

4. Factors that limit or prevent school-based nursing care for children who have handicaps are complex and involve many analytical considerations. To some extent, how nurses feel about their own abilities will limit or increase their involvement with these children. However, many nurses must work with these children who do not feel qualified to do so. Since the literature suggests that specialized agencies and medical resources can assist nurses to gain needed skills in this area, the lack of these agencies within a 100-mile radius is considered a barrier; not having pursued courses that prepare nurses to assess children with handicaps is considered a barrier as are heavy caseloads, working with children at many developmental levels, and part-time employment. The greatest problem areas (barriers to nursing interventions) are feeling inadequately prepared to work with children who have handicaps, not having assistants to help with children's cases, and lack of education in the area of assessing children who have handicaps.

At least 50 per cent of the school nurses do not feel adequately prepared to work with children who have handicaps, but nurses who have associate degrees feel less prepared than those at other levels. The availability within the community of agencies that serve the handicapped and specialized medical professionals apparently does not
help to provide nurses with the needed assessment skills to make them feel more adequate to work with handicapped children. Apparently, skills needed to work with the disabled and feelings of adequacy are related to other modes of learning (professional schools of nursing, workshops, or nursing inservice).

5. Nurses who feel adequately prepared are more apt to be considered resource persons by parents and the child's educational team. These areas appear to be correlated with the nurses' abilities and self confidence, and a feeling of competence is apparently a function of the nurse's educational level. More master's degree nurses feel prepared to work with these children.

In many cases, nurses provide assessments and other forms of care for the child who has handicaps when they do not feel prepared or qualified to work with these children. This could present a legal liability for both the school nurse and the school district. The reason school nurses work with these children when they feel unprepared to do so may be because the job and the law requires them to do so. The law, however, also holds nurses accountable for their actions if they do not give the type of care that is correct for the situation.

6. Less than half of the respondent master's prepared nurses contribute to individual educational plans of these children, and the number of nurses in other educational
levels who do not perform this necessary task is even more pronounced. Nurses in all educational levels perceive themselves as being considered a part of such children's educational planning team although master's and baccalaureate nurses reported more positive responses than diploma and associate degree nurses.

7. Less than half of the respondent nurses who are prepared at the associate degree, diploma, and baccalaureate levels are utilized as a resource. Slightly over half of the master's degree nurses are called on by parents for assistance with their handicapped children's health problems.

8. Nurses feel that they need more education to work with children who have handicaps. A greater percentage of associate and baccalaureate degree nurses appear to feel the need for more education. Most diploma nurses have been practicing for over twenty years and may not want to seek further education for the future. Since master's degree nurses have attained the highest level of preparation for school nurses, the fact that there is little or no financial incentive in further education may be a factor in their decision to take no more coursework. Those nurses who feel a need for more education may be those who have degrees in fields other than nursing.

9. A major barrier that diploma nurses encounter when considering returning to school is having to repeat too many
courses. Baccalaureate programs do not articulate directly with other entry-level programs; step-ladder programs or bridge courses are not well developed in baccalaureate programs. Associate degree nurses are constrained by their living arrangements when they consider returning to school. Most of these nurses have been out of school less than ten years and have young families to care for.

10. The courses that school nurses feel would be most helpful are human genetics and physical assessment of the child with handicaps. They also recognize that part of being able to understand a child's educational and medical records is having a knowledge of the testing and screening devices which have been used for case finding and diagnosis. Most of the nurses feel that courses would be beneficial and should provide them with information about why and when to use these testing and screening procedures. Nurses apparently do not want or need other areas of assessment such as nutritional, skill and environmental assessments of the child with handicaps. This may be the result of not understanding how this information could be used in screening devices and for care plans for such children's health care. It may also be a result of not having had courses that would prepare the nurse to assess the child who has handicaps. Nurses may also feel that they do not have time to do in-depth assessments on handicapped children.
11. Summer courses and continuing education programs are the two special educational considerations that nurses like the most. There are several factors to consider in planning program alternatives. Associate degree nurses, who are the youngest school nurses, have to plan around family responsibilities; many diploma nurses list age and imminent retirement as a factor; master's degree nurses feel they have enough education. Administrators in higher education, therefore, should consider the educational needs of the nurses who will replace 54 per cent of these school nurses within the next five to ten years. Recruiting efforts should be concerned with child care for nurses who are seeking advanced degrees, continuing education programs for those who have degrees, and summer master's degree programs in nursing that will encourage more nurses to seek nursing degrees.

Recommendations

Based on the findings and conclusions of this study, the following recommendations are made:

1. A follow-up study should be conducted on this same group of nurses within the next five years to determine if they have carried out their educational plans and what, if any, program planning options were taken.
2. A similar study should be conducted in five years to determine the number of new nurses who have replaced those retiring and what their educational needs are in this field.

3. A study should be conducted to determine the schools and colleges of nursing in Texas that provide courses and workshops related to the health care of individuals who are handicapped. This information should be published and disseminated to Texas school nurses.

4. A study should be conducted to determine which nurses in the state of Texas have the skills and knowledge necessary to nurse children and adults who have handicaps in order to form a network of nursing resources.

5. A limitation of this study is that the respondent nurses' stated feelings of adequate preparation in the field had to be accepted. A new study should be initiated that uses a method to evaluate prior clinical experience with children who are handicapped. This would evaluate more fully nurses who had received preparation by working in a specialized center, for instance, but who has not had special courses to prepare them to work in this area.

6. More programs should be developed with bridge courses to introduce the registered nurse to the philosophy of the baccalaureate program and challenge courses which will place these nurses out of courses in which are taught knowledge and skills they already have.
7. A study should be done among public school administrators to determine their understanding of nursing education provided by the baccalaureate degree and the master's degree compared to the nursing education components of degrees in other fields.

8. A study should be done to determine the level of skill required in public schools of the nurses who have higher degrees to determine legal responsibility incurred by that degree.

Guidelines

The following guidelines are developed from the data of this study, suggestions made by the panel of experts who reviewed the questionnaire, and from a review of the literature. These guidelines are generalized statements which could be used in the future as a basis for planning a curriculum framework for a two-track approach to the education of school nurses to provide health care to public school children who are handicapped.

Two educational alternatives are outlined that should be provided to serve the needs of school nurses who want to increase skills and knowledge but, because of their diverse educational backgrounds, will choose different options for obtaining it. The option for credit or non-credit courses should be available.
Continuing Education Programs

The overall goal of such continuing education is to prepare the school nurse with knowledge and skills needed to work with children who have a variety of handicapping conditions. A continuing education program should include the following components:

1. Flexible offerings, such as summer or school holiday programs or a program that spaces campus coursework with independent work at home so that work schedules or family responsibility can be met (2);

2. Learning experiences that consider the needs of the adult learner, who in this case is already a licensed professional (1). Desirable methods include the use of self-learning modules, teleconferences, independent studies, correspondence courses, and clinical facilities in the student's home town to meet certain objectives of the course (7);

3. Provision of dormitory rooms for those who need accommodations;

4. Courses that are organized, conducted, and evaluated by the university following approval by the state;

5. Collaboration with the Texas Education Agency to recruit individual school nurses to participate in the program;
6. Use of continuing education credits (CEARP) for nurses;

7. Nursing faculty who are employed by the university wherein the continuing education program originates;

8. Use of appropriate objectives which will insure that school nurses (a) understand Public Law 94-142 and Section 504 of the Rehabilitation Act, (b) function as a team member in providing an individual education plan that includes the child's individual health care plan, (c) use appropriate screening procedures to determine those children who may need referrals for physical or emotional problems, (d) understand the use of certain tests and therapies given by other professionals, (e) can work with adaptive devices, special equipment, or procedures required by handicapped children, (f) can identify the work of an advocate for the child with handicaps, (g) develop advanced skills in physical assessment including identification of minor anomalies;

9. Courses that are appropriately leveled in human genetics, assessment parameters, nursing care of children with motor deficits, adaptive devices for children with handicaps, nursing procedures for children with neurosensory loss, mental retardation, the IEP process, promotion of peer relationships for children with handicaps, the nurse as an advocate, information about screening instruments, tests, and therapies, and communication skills;
10. Sponsorship of outreach training programs for nurses who live in rural areas that have shortages of educational facilities (9);

11. Use of student evaluations of the program, courses and instructor.

**Degree Program**

**Baccalaureate level**—The overall goal of the baccalaureate program should be to prepare nurses to work in hospitals and community health agencies, to advance readily to positions of increasing responsibility, and to advance to graduate study in nursing (6).

A baccalaureate program that accommodates the regular generic student should accommodate graduates of diploma and associate degree nursing programs who hold current United States licensure to practice professional nursing (3). Program options that would enhance the school nurse's career goals within the core courses are as follows:

1. Evening and summer school course offerings that allow the registered nurse time to continue working;

2. Credit by examination for certain nursing courses to reflect the registered nurse's previously acquired skill or knowledge (5);

3. Learning experiences that would provide practice and theoretical orientation in specific clinical areas in
addition to the regularly required baccalaureate nursing core curriculum;

4. Courses that provide more in-depth experiences with the normal school-aged child as well as with the child who has disabilities, such as (a) physical assessment of the able-bodied child, (b) physical assessment of the child who has handicaps (including use of screening, testing, and diagnostic tools), (c) assessment parameters to use with nutrition, environment, and skills of daily living, (d) legal and ethical responsibilities of the school nurse, (e) preparation of individual nursing care plans for the school child who has handicaps, (f) communication skills for use with medical professionals, teachers, parents, and groups, (g) genetics courses that include human genetics (ideally, these should be included in developmental courses such as pediatrics, but if the nurse has received credit by examination for this course, she may elect to take a genetic course), and (h) nursing care of the child who has disabilities of the neuro-sensory system, musculo-skeletal system, cardio-vascular system, respiratory system, genito-urinary system, and gastrointestinal system, which will include management of health problems related to each area and adaptive devices and referral sources (6).

Masters level—Graduate study at this level should offer in-depth application of knowledge and skills in a
clinical area and the study of theoretical formulations which serve as the basis for nursing actions appropriate for individuals, families, groups, and the community (10). Four areas of specialization should be offered under the broad headings of community health nursing, maternal-child health nursing, medical-surgical nursing, and psychiatric-mental health nursing.

A basic assumption of this program should be that the study of individuals, families, groups, and the community provides the foundation for more specialized content. Core content of the program should focus on the basics of this level. Electives, choice of specialization area, and role area will facilitate the specialty courses related to nursing care of the child who has handicaps, the child's family, groups that serve the handicapped, and the community. Courses that would meet the needs of school nurses who wish to learn more about handicapped children's health problems are the following:

1. Assessment and diagnosis of the health problems of children who have handicaps;
2. Behavior analysis and nursing management strategies of children who have handicaps;
3. Issues and concepts related to nursing care of the child who has handicaps;
4. Nursing care of the family with a child who is handicapped;
5. Community problems related to the social, legal, and ethical issues of caring for handicapped citizens;

6. Nursing care for the common health problems of children who are handicapped;

7. Development of the role of the nurse as an advocate for the child and family in (a) public awareness, (b) community accessibility, (c) the nurse as a resource person, (d) membership on the educational-health team, and (e) writing and public speaking;

8. Genetics courses presented as a second science in two semesters covering (semester one) human genetics including patterns of inheritance, cytogenetics, immunogenetics, biochemical genetics, developmental genetics, mathematical genetics, and pharmacogenetics; and (semester two) clinical medical genetics including chromosome disorders, Mendelian disorders, multifactorial inheritance, congenital malformations, prenatal diagnosis, genetic counseling, and ethical, legal, and social issues in clinical genetics.
CHAPTER BIBLIOGRAPHY


6. "Texas Woman's University General Catalog," Denton, Texas, Texas Woman's University, April, 1981.


APPENDIX A
QUESTIONNAIRE VALIDATION

Geographic No.________________
Size No ________________________

Directions:

The number in the upper right corner identifies your geographic locale and the approximate size of the city in which your school district is located. You will not be identified individually.

Please respond to the following questions by checking the appropriate information. In case "other" is selected for your answer, please write in your response. Where it is indicated that there may be more than one response, check all items that apply. Unless instructed to do so however, mark only one response.

1. What is your basic nursing preparation? __________________________________________________________________________
   Year of Graduation:________________________
   Most Appropriate ____________  Appropriate _______  Inappropriate ______

2. What is your highest degree?
   BS____ Major________________________
   BA____
   MS____
   MA____
   Ph.D. in Nursing____ Graduation________
   Ph.D. in____ (Year)
   Other____
   Most Appropriate ____________  Appropriate _______  Inappropriate ______

3. I have been a school nurse ______ years.
   Most Appropriate ____________  Appropriate _______  Inappropriate ______
4. My residence is located within a distance from a college or university which is:
   a. Less than 20 miles____
   b. More than 20 miles, less than 50____
   c. More than 50 miles, less than 75____
   d. More than 75 miles, less than 100____
   e. Over 100 miles____

5. The pupil ratio for which I am responsible is:
   Up to 500____  2000-3000____
   500-1000____  3000-4000____
   1000-2000____ 4000 or more____

Please answer the following questions with yes or no:

   Yes  No

   ___ ___ 6. I share responsibility for a group of pupils with another registered nurse.  
   ___ ___ 7. There is a licensed vocational nurse to assist me.  
   ___ ___ 8. There is a health aide to assist me.
Please rank the response that indicates the area that absorbs the greatest amount of your school day. (1-8) 1=greatest 8=lowest

9. The ranking score of my work activity involves:
   a. Teaching health in the regular classroom____
   b. Home visits_____  
   c. Vision and hearing screenings____
   d. Seeing children who are hurt or ill____
   e. Keeping records____
   f. Immunization clinics____
   g. Assisting the physician with school physicals____
   h. Completing nursing assessments____

Please answer yes or no.

Yes No____

10. There are handicapped children within the pupil load which I am responsible.____

11. The handicapping conditions of children in my area of responsibility are: (Please check those that apply)____

Blindness_____  Muscular Dystrophy____
Deafness_____  Arthritis____
Hard of Hearing____  Skeletal disorders____
Speech disorders____  Loss or deformity of limbs____
Cerebral palsy____  Mental retardation____
Spina bifida____  Learning disabled____
Cystic fibrosis____  Heart disease____
Emotional problems____  Epilepsy & convulsive disorders____

Other________________________

143
12. These agencies serving the handicapped and their families are located near my school district within 50-100 miles. (Please check those that apply or write DK if you do not know)

<table>
<thead>
<tr>
<th>Birth Defects Centers</th>
<th>Genetic Counseling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cystic Fibrosis</td>
<td>Epilepsy Foundation</td>
</tr>
<tr>
<td>Outreach Teams</td>
<td>Association for Retarded Citizens</td>
</tr>
<tr>
<td>Muscular Dystrophy or other degenerative disease agencies</td>
<td>State School for the Mentally Retarded</td>
</tr>
<tr>
<td>Commission for the Blind</td>
<td>Services for the Blind</td>
</tr>
<tr>
<td>Speech &amp; Hearing Clinics</td>
<td>United Cerebral Palsy Association</td>
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<tr>
<td>Juvenile Diabetic Foundation</td>
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</tbody>
</table>

13. Our school district is located in a city in which there are services of physicians specialized in: (Please check those that apply)

<table>
<thead>
<tr>
<th>Neurology</th>
<th>Plastic Surgery</th>
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<tbody>
<tr>
<td>Neonatology</td>
<td>Orthopedics</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>Ophthalmology</td>
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<tr>
<td>Genetics</td>
<td>Otorhinolaryngology</td>
</tr>
<tr>
<td>Obstetrics</td>
<td>Psychiatry</td>
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</table>
14. These are the health problems that I recognize in the handicapped children that are in my case load: (Please check those that apply)

- Respiratory problems (such as asthma, etc.)
- Nutrition problems (swallowing, etc.)
- Feeding problems
- Toileting problems
- Medication needs
- Skin problems
- Seizure disorders
- Heart disease
- Blood dyscrasias
- Malnutrition
- Brittle bones
- Clumsiness
- Fearful
- Short attention span
- Inability to relate socially
- Visual-motor problems (Strabismus, nystagmus, etc.)
- Obesity
- Kidney & bladder problems
- Pica (eating non-food)
- Infections
- Tuberculosis
- Special treatment needs
- Motor impairments
- Immobility
- Sensory loss
- Contractures
- Pain
- Poor Body image
- Withdrawn
- Overly sensitive to touch
- Condition with prognosis of early impending death

Please answer yes or no.

Yes  No

15. I regularly am called upon to assist the teacher with some health problems related to the handicapped population in our school.
<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Most Appropriate</th>
<th>Appropriately</th>
<th>Inappropriate</th>
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<tr>
<td></td>
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<td>16. I often feel inadequate to deal with these problems.</td>
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<td>17. Handicapped children often miss school because of health problems.</td>
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<td>18. Parents of handicapped children frequently call me for assistance with their child's health problems.</td>
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<td></td>
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<td>19. I have had courses in human genetics.</td>
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<td>20. I have taken courses on physical assessment.</td>
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<td>21. I have taken courses on physical assessment of the handicapped child.</td>
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<td>22. I am able to assess the child for genetic defects.</td>
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<td>23. I make referrals to agencies which serve the handicapped.</td>
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<td>24. I am competent in performing a physical assessment on the &quot;normal child&quot;.</td>
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<td>25. I regularly complete nursing assessments including physical assessments on normal children.</td>
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<tr>
<td>Yes</td>
<td>No</td>
<td>Subject</td>
<td>Most Appropriate</td>
<td>Appropriate</td>
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<td>26. I am competent in performing a physical assessment on a child with handicaps.</td>
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<td>27. I regularly complete nursing assessments including physical assessments on children with handicaps.</td>
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<td>28. I want to take a course in physical assessment of the normal child.</td>
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<td>29. I want to take a course in physical assessment of the handicapped child.</td>
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<td>30. I can regulate my work hours to do physical assessments for children's health records.</td>
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<td>31. I do not have time to do physical assessments for health records.</td>
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<td>32. I prepare individual health care plans for handicapped children to assist the school evaluation team.</td>
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<td>33. The school nurse is a part of the evaluation team working with handicapped children in my district.</td>
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</table>
Please check the appropriate response.

34. These are areas I feel I need to learn more about:
   a. Genetics  
   b. Working with children with motor deficits  
   c. Assessment:
      Physical  
      Environmental  
      Skill  
   d. Adaptive devices for children with motor deficiency  
   e. Nursing procedures to use with children who have neuro-sensory loss  

35. I understand the following: (Does not imply you administer these tests or screening devices. Check those that apply)

   _____ Bayley Scale of Infant Development  
   _____ Denver Developmental Screening Test  
   _____ Gesell Developmental Scale  
   _____ Infant Intelligence Test  
   _____ Kuhlman-Binet Infant Scale  
   _____ Weschler Intelligence Scale for Children (WISC)  
   _____ Weschler Adult Intelligence Scale (WAIS)  
   _____ Parents Attitude Scale  
   _____ Parental Attitude Research Instruction  
   _____ Brazelton Psychophysiological/Neurological Maturity  
   _____ Vineland Social Maturity Test  
   _____ Peabody Picture Vocabulary Test  
   _____ Goodenough-Harris Draw a Person  
(continued on next page)
Minneapolis Preschool Test  
Stanford-Binet Intelligence Test  
The Purdue Perceptual-Motor Survey  
The Frostig Developmental Test of Visual Perception  
Bobath and Ayers Physical Therapy  
Bliss Symbolics

Please check yes or no.

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<th>Yes</th>
<th>No</th>
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<th>36.</th>
<th>I want to learn more about the areas above that I have not had experience with.</th>
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<th>37.</th>
<th>I would attend educational workshops or seminars about handicapped children if offered in an area near my home.</th>
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<th>38.</th>
<th>I believe I need more education to work with handicapped children.</th>
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<th>39.</th>
<th>I am interested in a university program to upgrade my abilities in this area.</th>
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<th>40.</th>
<th>The following problems present a barrier to my continuing education. (Answer yes or no)</th>
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<thead>
<tr>
<th>a.</th>
<th>I would have to repeat too many courses in order to be accepted.</th>
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<th>b.</th>
<th>Distance to a college or university is a factor.</th>
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Yes  No

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d. Living arrangements are a factor.

---  ---

41. I would be able to attend a university for nursing courses

Yes  No

---  ---
a. Nights

---  ---
b. Weekends

---  ---
c. Summers only

---  ---
d. Some week days

---  ---
e. It would be helpful to have dormitory rooms available for overnight stays.
PANEL MEMBERS FOR VALIDATION
OF QUESTIONNAIRE ITEMS

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San Antonio, Texas 78284

Dr. McKevitt has previously been involved with school nursing in Texas.

Shelly Tholcken, R.N., M.S.  
Clinical Nurse Specialist  
Moody State School  
Galveston, Texas 77550

Has experience working with children with physical disability and mental retardation.
COVER LETTER TO PANEL MEMBERS

Dear

In partial fulfillment of the requirements for the Doctor of Philosophy Degree at North Texas State University, I am writing a dissertation concerning the factors related to school nurses' participation in delivering health service to handicapped children in Texas public schools. The study is designed to solicit data that will be useful to nurse educators and to assist in constructing an educational model that will meet educational needs of school nurses and, ultimately the health needs of handicapped children.

As part of the dissertation preparation, I am seeking validation of the survey questionnaire. One method of validation consists of submitting the questions to a panel of judges. With the approval of my dissertation committee, I am asking you, because of your expertise in this field of nursing, to be one of the judges.

Along with this letter I am including a copy of the purposes of my study and the research questions. The population will be a random sample of 500 school nurses in the State of Texas. After reading the purpose and the research questions, do you believe my questionnaire will be effective in obtaining answers to the research questions? An area has been provided for you to respond to the degree of appropriateness of each question. Feel free to write on the questionnaire to change wording or add questions you feel are needed.

I appreciate your assistance in my research efforts and will certainly welcome your suggestions and evaluation of the questionnaire. Results of the completed study will be mailed to you upon request.

Sincerely,

Peggy J. Drapo
1200 Amherst Street
Denton, Texas 76201
SCHOOL NURSE QUESTIONNAIRE

Directions:

The code number in the upper right corner appears on each questionnaire for data collection and tabulation purposes only. You will not be identified individually and information will be held in strict confidence. Your school district will not be identified in the study.

Please respond to the following questions by checking the appropriate information. In case "other" is selected for your answer, please write in your response. Where it is indicated that there may be more than one response, check all items that apply. Unless instructed to do so however, mark only one response.

1. What is your basic nursing preparation

   Diploma, AD, BS

   Year of Graduation:

2. What is your highest degree?

   BS
   BA
   MS
   MA
   M.P.H.
   M.Ed.

   Ph.D. in Nursing
   Ph.D. in Other
   D.N.S.
   D.P.H.

   Graduation Year

3. How long have you been a school nurse?

4. How many days per week do you work?
5. How far is your residence located from a university which offers nursing courses at the level you need to earn a degree?

Undergraduate   Graduate

a. Less than 20 miles  

b. More than 20 miles, less than 50  

c. More than 50 miles, less than 75  

d. More than 75 miles, less than 100  

e. Over 100 miles  

6. The case load of pupils for which you are responsible is:

Under 500  

500-999  

1000-1999  

2000-2999  

3000-3999  

4000 or more  

Please answer the following questions with yes or no: (If more than one assistant, please note number)

7. You share responsibility for a group of pupils with other registered nurses. Is assistant full-time?  

8. There is a licensed vocational nurse to assist you. Is assistant full-time?  

9. There is a health aide to assist.  

10. Below are 11 work activities listed as "a through k". Please rank from 1 through 11 each work activity in terms of the amount of time you spend on it.

a. Teaching health in the regular classroom____
b. Home visits____
c. Vision and hearing screenings____
d. Managing children who are hurt or ill____
e. Keeping records____
f. Immunization clinics____
g. Assisting the physician with school physical examinations____
h. Making referrals____
i. Counseling with teachers____
j. Counseling with parents____
k. Counseling with children____

11. What grade levels do you serve? (Check all that apply)

a. Elementary
b. Junior High
c. Senior High
12. Are you responsible for the health care of children with one or more of the following conditions? (Please check those that apply)

- Blindness
- Deafness
- Hard of hearing
- Speech disorders
- Cerebral palsy
- Spina bifida
- Cystic fibrosis
- Emotional problems
- Muscular dystrophy
- Arthritis
- Skeletal disorders
- Loss or deformity of extremity
- Mental retardation
- Learning disabled
- Heart disease
- Epilepsy & convulsive disorders
- Other (Please specify)

13. Do you feel you have adequate knowledge or skill about this condition?

<table>
<thead>
<tr>
<th>Condition</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blindness</td>
<td></td>
<td></td>
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<tr>
<td>Deafness</td>
<td></td>
<td></td>
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<tr>
<td>Hard of hearing</td>
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<tr>
<td>Speech disorders</td>
<td></td>
<td></td>
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<tr>
<td>Cerebral palsy</td>
<td></td>
<td></td>
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<tr>
<td>Spina bifida</td>
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<tr>
<td>Cystic fibrosis</td>
<td></td>
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<tr>
<td>Emotional problems</td>
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<tr>
<td>Muscular dystrophy</td>
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<tr>
<td>Arthritis</td>
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<tr>
<td>Skeletal disorders</td>
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<tr>
<td>Loss or deformity of extremity</td>
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<tr>
<td>Mental retardation</td>
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<tr>
<td>Learning disabled</td>
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<tr>
<td>Heart disease</td>
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<tr>
<td>Epilepsy &amp; convulsive disorders</td>
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<tr>
<td>Other (Please specify)</td>
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</tbody>
</table>
14. Please check the following health problems that you recognize in the children with handicaps that are in your case load.

- Respiratory problems
  (such as asthma, tuberculosis, frequent URI)

- Nutrition problems
  (obesity, malnutrition)

- Feeding problems (choking, poor lip closure, etc.)

- Medication needs

- Skin problems

- Seizure disorders

- Heart disease

- Blood dyscrasias

- Clumsiness

- Fearfulness

- Short attention span

- Inability to relate socially

- Visual-motor problems
  (strabismus, nystagmus, etc.)

- Kidney & bladder problems

- Pica (eating non-food)

- Infections (other than respiratory)

- Special treatment needs

- Motor impairments

- Immobility

- Sensory loss

- Contractures

- Pain (chronic)

- Poor body image

- Withdawn

- Overly sensitive to touch

- Condition with prognosis of early impending death

- Other (Please specify)
15. These agencies serving the handicapped and their families are located near your school district within 50-100 miles. (Please check those that apply)

Birth Defects Centers  
Cystic Fibrosis  
Outreach Teams  
Muscular Dystrophy or other degenerative disease agencies  
Commission for the Blind  
Speech and Hearing Clinics  
Juvenile Diabetic Foundation  
Genetic Counseling  
Epilepsy Foundation  
Association for Retarded Citizens  
Services for the blind  
United Cerebral Palsy Association  
State School for the Mentally Retarded  

16. Which of the following services of physicians are available in the city in which your school district is located?

Neurology  
Neonatology  
Pediatrics  
Genetics  
Obstetrics  
Plastic Surgery  
Orthopedics  
Opthalmology  
Otorhinolaryngology  
Psychiatry
Please answer yes or no to the following:

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
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</thead>
<tbody>
<tr>
<td>17. Do you regularly assist the teacher with health problems of children with handicaps in your school?</td>
<td></td>
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<tr>
<td>18. Do you often feel inadequately prepared to deal with problems of children with handicaps?</td>
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<tr>
<td>19. Do you find that handicapped children often miss school because of health problems?</td>
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<tr>
<td>20. Do parents of handicapped children frequently call you for assistance with their child's health problems?</td>
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<tr>
<td>21. Do you believe that families of children with handicaps have more stress than families of able bodied children?</td>
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<tr>
<td>22. Have you had courses in human genetics?</td>
<td></td>
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<tr>
<td>23. Have you taken courses on physical assessment?</td>
<td></td>
<td></td>
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<tr>
<td>24. Have you taken courses on physical assessment of the child with handicaps?</td>
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<tr>
<td>25. Are you able to assess the child for birth anomalies or common genetic syndromes?</td>
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<tr>
<td>26. Do you make referrals to agencies which serve the handicapped?</td>
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<tr>
<td>27. Do you feel qualified to perform a physical assessment on the able bodied child?</td>
<td></td>
<td></td>
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<tr>
<td>28. Do you do complete nursing assessments (including physical assessments) on able bodied children?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. Do you feel qualified to perform a physical assessment on a child with handicaps?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. Do you do complete nursing assessments (including physical assessments) on children with handicaps?</td>
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<td></td>
</tr>
</tbody>
</table>
31. Do you prepare individual health care plans for children with handicaps to assist the educational team prepare individual education plans (I.E.P.)?  

[ ] Yes  [ ] No  

32. Is the school nurse considered a part of the educational team working with children with handicaps in your district?  

[ ] Yes  [ ] No  

Please check the appropriate response to the following:  

33. Would you like to learn more about the following in order to work more effectively with handicapped children?  

a. Genetics  

b. Working with children with motor deficits  

c. Assessment parameters:  

Physical (on able bodied)  

[ ] (child with disability)  

Environmental  

Skill  

Nutritional  

d. Adaptive devices for children with motor deficiency  

e. Nursing procedures to use with children who have neuro-sensory loss  

f. Nursing care of the retarded  

g. The nursing role in the I.E.P. process  

h. Promotion of social relationships among children with handicaps and their peers  

i. Other (Please specify)
34. Do you understand the use of the following as a test, screening device, or therapy? (Does not imply you administer)

__Bayley Scale of Infant Development
__Denver Developmental Screening Test
__Gesell Developmental Scale
__Infant Intelligence Test
__Kuhlman-Binet Infant Scale
__Weschler Intelligence Scale for Children (WISC)
__Weschler Adult Intelligence Scale (WAIS)
__Parents Attitude Scale
__Parental Attitude Research Instruction
__Brazelton Psychophysiological/Neurological Maturity
__Vineland Social Maturity Test
__Peabody Picture Vocabulary Test
__Goodenough-Harris Draw a Person
__Minnesota Preschool Test
__Stanford-Binet Intelligence Test
__The Purdue Perceptual-Motor Survey
__The Frostig Developmental Test of Visual Perception
__Bobath and Ayers Physical Therapy
__Bliss Symbolics
Please check yes or no.

35. Do you want to learn more about items in question 34 that you have not had experience with?  

36. Would you attend educational workshops or seminars about children with handicaps if offered in an area near your home?  

37. Do you believe you need more education to work with handicapped children?  

38. Are you interested in a university program to upgrade your abilities in this area?
   a. Undergraduate__  
   b. Graduate__  
   c. Continuing Education__  
   d. Independent study__  
   e. Teleconference__  
   f. Video taped or correspondence__  

39. Would you like to pursue a degree program but the following things present a barrier?  

   a. You would have to repeat too many courses in order to be accepted.  
   b. You lack prerequisite courses.  
   c. Distance to a college or university is a factor.  
   d. The hours courses and clinical experience are offered are not compatible with your work hours.  
   e. Living arrangements are a factor.  
      Spouse__Children__Finances__  
      Other (Specify)________________  
   f. Other (Please specify)__________________  

40. Would you be able to attend a university for nursing courses? (Check yes or no)

<table>
<thead>
<tr>
<th>Option</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Nights</td>
<td></td>
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<td>b. Weekends</td>
<td></td>
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<tr>
<td>c. Summers only</td>
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<tr>
<td>d. Some week days</td>
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<tr>
<td>e. Would it be helpful to have dormitory rooms available for overnight stays?</td>
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</tbody>
</table>
Dear School Nurse:

With the passage of Public Law 94-142 the Education of all Handicapped Children in 1975, public schools have been required to provide these children with a free appropriate education in the least restrictive environment. This has increased the work load of the classroom teacher and the public school nurse.

This study is designed to determine the kinds of handicapping conditions of children in your present pupil case load and the nursing interventions you make for their health care. I am interested in the barriers which you feel restrict your care of the child and what type, if any, additional educational preparation you feel you need in this area. This information will be useful to nurse educators and ultimately, we hope, to you and to the children you serve.

The questionnaire will take about 15 minutes of your time. Individual responses will be held in confidence and the identity of your school will not be revealed in the study report. A code number appears on each questionnaire for data collection and tabulation purposes only. A summary of the study will be sent to you upon request.

Your response to the test is important to the success of this study. I would appreciate return of the questionnaire by November 30, 1982. A return addressed, stamped envelope is included for your convenience in returning this questionnaire. Please contact me if you have any questions.

Thank you for your cooperation and assistance.

Sincerely,

Peggy J. Drapo, R.N.

Home address:
1200 Amherst Street
Denton, Texas 76201
Dear School Nurse:

A few weeks ago you received a request to complete a questionnaire related to school nurse involvement with children who are handicapped and school nurses' future educational needs in this field. The initial response has been good and indicates that school nurses are interested and supportive of research efforts of a colleague. However, I have not yet received your reply and your response is very important to me since each returned questionnaire increases the reliability of the study and shares with me your input.

The data collected from these questionnaires will help to determine educational needs of nurses working with disabled children in the school system. The information will be useful to set up an educational model.

As a former school nurse and present nurse educator, I realize how busy your day is. Completion of the questionnaire should only take about 15 minutes of your time. A return addressed, stamped envelope is included for your convenience and a second questionnaire in case you have misplaced the first one. The code at the top of the questionnaire is used only to help me determine that you have returned the questionnaire for tabulation purposes. Your name and school district will be held in strict confidence and not revealed in the report of the study.

Thank you for your cooperation. If you have already mailed the questionnaire, please disregard this reminder and accept my gratitude for your participation in my dissertation study. Your response is important in the completion of the study. If I can be of assistance to you in your research efforts, please contact me.

No data received after December 31 can be included in the study. Summaries of the findings will be available to you on request.

Sincerely,

Peggy J. Drapo, R.N.
1200 Amherst Street
Denton, Texas 76201
BIBLIOGRAPHY

Books


**Articles**


Huber, M. L., "Associate Degree Nursing Implications for the 1980's and Beyond," *Journal of Nursing Education*, 21 (June, 1982), 24-33.


McGarth, B. J., and R. J. Bacon, "Baccalaureate Nursing Education for the RN: Why Is It So Scarce?" *Journal of Nursing Education*, 18 (June, 1979), 40-45.


Ream, A. C., "My Turn: Our Undertrained Nurses," *Newsweek Magazine*, 17 (October, 1982), 17.


Publications of Learned Organizations

Texas Woman's University General Catalog, Denton, Texas Woman's University Press, April, 1981.

Reports


Government Documents


"When You Care for the Handicapped Children," *Texas Department of Human Resources Guide for Working with Young Handicapped Children*, Austin, Texas, Joyce Evans, Director, Special Projects Division, Southwest Educational Development Laboratory, 1979.

Unpublished Materials


University of Colorado, "School Nurse Achievement Program Information Packet," report, Denver, Health Science Center, School of Nursing, 1982.

University of Washington, "Nursing of Children with Handicapping Conditions," report, Seattle, School of Nursing, Department of Parent Child Nursing, December 1, 1981.

Newspapers
