A STUDY OF THE PERCEPTIONS OF CURRENTLY PRACTICING
NURSES OF THEIR COMPETENCY TO DEAL WITH
MENTALLY RETARDED CLIENTS

DISSERTATION

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By

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One of the outgrowths of legislation enacted during the 1960's has been the deinstitutionalization of mentally retarded persons and the retention of others within the community. This study addressed the problem of nurses' perception of their competency to deal with this population wherever they might be encountered within community health care settings.

A simple random sample of 200 nurses residing within Summit, Portage, Stark, Medina, or Wayne County, Ohio, was drawn from the list of the Ohio State Board of Nursing Education and Nurse Registration. A questionnaire was developed especially for this study; reliability was tested with a pilot study, validity by use of a panel of seven experts in mental retardation. The questionnaire was mailed to the sample of nurses; a return response of 57 percent was obtained on the first mailing. All hypotheses were examined at the .05 level of significance.

The first hypothesis looked for differences in perceived competency based on the level of basic nursing education. Since sample sizes were not equal, the Kruskal-
Wallis test was utilized and a significant difference at the .001 alpha level was found.

Hypothesis two looked for a relationship between perceived competency and degree of clinical contact with a mentally retarded population provided by the basic nursing preparation. Hypotheses three through six looked for relationships between perceived competency and adequacy of samples of content related to mental retardation provided by the basic nursing education: (1) risk factors; (2) etiology; (3) skills and techniques; (4) support systems. Hypothesis seven looked at the relationship between perception of competency and the adequacy of continuing education offerings to which nurses have been exposed. Hypothesis eight looked for a relationship between perceived competency and sustained personal contact with a mentally retarded person. A Pearson product moment correlation was run on each of these hypotheses and each revealed a positive significant relationship.

This study was limited by several factors, among them the ex post facto design, the size of the sample and sampling area, and the types of statistical measurements employed. Within such limitation, however, some conclusions can be drawn:

1. Baccalaureate nurses perceive themselves to be more competent in dealing with mentally retarded clients than do diploma or associate degree nurses; however, diploma nurses
perceive themselves to be more competent than associate degree nurses perceive themselves to be.

2. Perception of competency increases linearly with perception of the adequacy of: clinical contact provided by the basic nursing education; content related to risk factors, etiology, skills, techniques, and support systems provided by the basic nursing education; continuing education to which nurses have been exposed; and, with sustained personal contact with a mentally retarded person.

Recommendations were made that this study be replicated with a larger sampling area in another location and with a sample that breaks down into equal numbers to utilize more sophisticated statistical methodology. It was recommended that additional hypotheses, generated by analysis of the data from this study, be tested. It was recommended that the results of this study be shared with other helping professions in the hope of stimulating further training. A final recommendation was that educators strive to reinforce the "need to know" that is innate to humankind so that research is fun and methodology assumes its proper function -- that of tool.
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The Developmentally Disabled Assistance and Bill of Rights Act (PL 94-103) defines the population covered under this act as those with "a disability attributable to mental retardation, cerebral palsy, epilepsy, autism (or dyslexia resulting from these) or any other conditions closely related to mental retardation in terms of intellectual and adaptive problems." This study focuses on that subset of developmentally disabled persons whose primary diagnosis is mental retardation.

The mentally retarded population had been largely ignored until the Kennedy era. The creation of the President's Committee on Mental Retardation and the passage of the Mental Retardation Facilities and Community Mental Health Centers Act (PL 83-164) during that period lent impetus to efforts to identify and to meet the needs of this population. Out of these concerns came the dissemination of the concepts of normalization, right to education legislation, class action suits, et al. One of the results has been the push to deinstitutionalize, both because institutionalization is seen as antithetical to normalization and, probably more importantly, because federal
funds for existing institutions are now tied to such entities as client/staff ratio and the number of cubic feet of air space per client. Deinstitutionalization has become the mechanism for reducing facility census, and clients thus excluded are now dispersed throughout the community: in boarding houses, foster care, inexpensive hotels, half-way houses, nursing homes or other extended care facilities.

This population is increasingly visible to the nursing profession. The public health nurse and the visiting nurse encounter them as they make their rounds to homes, clinics, etc. They are also appearing more frequently in physicians' offices, emergency rooms, on medical and surgical units, in venereal disease and family planning clinics. Their health needs are greater than those of the general population and because of the increased visibility these needs are now beginning to be documented (5, 6, 8).

Many nurses currently practicing have not been prepared to deal effectively with mentally retarded clients. When they have felt themselves to be in supportive surroundings, nurses, individually and in groups, have expressed their concerns about their lack of knowledge and ability to provide appropriate professional care for these clients. The question that is to be asked is, how do currently practicing nurses perceive their competency to deal effectively with this population?
Statement of the Problem

The problem of this study was to test how currently practicing nurses perceive their competency to provide adequate nursing care to mentally retarded clients and to measure the relationship between that perception and their basic nursing education, possible relevant continuing education, and sustained personal contact with one or more mentally retarded persons, if any.

Purpose of the Study

The purpose of this study was to assess currently practicing nurses' perception of their competency to provide adequate nursing care to mentally retarded clients as that sense of competency related to (a) original nursing preparation; (b) participation in relevant continuing education; and (c) sustained personal contact with one or more mentally retarded persons.

A questionnaire was developed to ascertain registered nurses' perceptions of how well they were prepared by their basic nursing education and by continuing education offerings to deal with mentally retarded clients; and, if they had had sustained personal contact with a mentally retarded person(s), whether having had such contact their perception of their competency was affected by it. The questionnaire which was developed for this study addressed the following
questions relative to nurses' perception of their competency in dealing with mentally retarded clients:

Is there a difference between the level of basic nursing education of nurses and their perception of their competency to deal with mentally retarded clients?

Is there a relationship between nurses' perception of the adequacy of the clinical experience in mental retardation provided by their basic nursing education and their perception of their competency to deal with mentally retarded clients?

Is there a relationship between nurses' perception of the adequacy of content related to the etiology of mental retardation provided by their basic nursing education and their perception of their competency to deal with mentally retarded clients?

Is there a relationship between nurses' perception of the adequacy of content related to risk factors associated with mental retardation provided by their basic nursing education and their perception of their competency to deal with mentally retarded clients?

Is there a relationship between nurses' perception of the adequacy of content related to skills and/or techniques appropriate for use with a mentally retarded population provided by their basic nursing education and their perception of their competency to deal with mentally retarded clients?
Is there a relationship between nurses' perception of the adequacy of content related to support systems as they relate to mental retardation provided by their basic nursing education and their perception of their competency to deal with mentally retarded clients?

Is there a relationship between nurses' perception of the adequacy of continuing education programs in mental retardation to which they have been exposed and their perception of their competency to deal with mentally retarded clients?

Is there a relationship between sustained personal contact with a mentally retarded person and nurses' perception of their competency to deal with mentally retarded clients?

**Background and Significance of the Study**

It is certain that contact with a retarded person is a frustrating form of interaction, not only on a concrete level when language is present, but even more so when it is not; expectations are uncertain and there may be a feeling of threat to self (13). Historically, man has displayed an innate fear and a concommitant rejection of his fellows who exhibited signs and symptoms of mental illness or subaverage mental abilities. Perhaps this is true, as Rockefeller postulated (7), because man has not understood the mind. This rejection extended to those who opted to work with a
mentally deficient population in that they were considered inferior; for instance, physicians who undertook such work had about the same social rank as ships' doctors (9). Due to those prevailing attitudes regarding that disabled population, care was maintained in institutions located sufficiently apart from the general population to insure loss of visibility.

In the past, the contact that nurses had with mentally retarded clients was minimal. Those who practiced on any of the subunits of an obstetrical ward (i.e., labor and delivery, and nursery) were present when some of these clients were born, and nurses practicing in schools containing special education classes had contact with this population. Public health nurses, however, had perhaps the greatest contact with them by virtue of their access to homes. The "average" nurse, i.e., one employed by a general hospital, had the least contact. Adding to this lack of actual contact with mentally retarded clients, the nursing curricula in basic nursing programs included little, if any, material relevant to this population.

The advent of the human services legislation of the 1960's (11, 12) brought an increase in expectations on the part of families of mentally retarded persons and open hostility toward the "medical model" which had often offered no hope (2; 3; 14; 15, pp. 269-270). Parents turned instead to the behavioral scientists and, in particular, to special
educators. Education seemed to provide the way; the concepts of habilitation and normalization required training and trainers which were viewed as functions of education.

Bolstered by the hope that such concepts fostered, families and citizens' groups pushed for deinstitutionalization. The results of that effort to date have been mixed but have generally fallen short of the anticipated expectations, though less so for the mentally retarded population than for the mentally ill, who have also been subjected to this process. The reasons are varied. Turner (10) for instance, in an address delivered at the 1975 Annual Meeting of The American Public Health Association, cited funding patterns and non-acceptance on the part of the community as significant factors. Bynder and New (1) explored the role that labels, devised by social scientists to categorize the handicapped, play in the acceptance of such persons by the nonhandicapped. These data indicate that such labels tend to both stigmatize and limit those persons to whom they are affixed. McCullough (4) has explicated some of the effects that successful class action suits, initiated in behalf of institutionalized mentally retarded persons in Alabama, Pennsylvania, and elsewhere, have had. Such suits have resulted in an often precipitous and relatively unplanned and inadequately financed push for deinstitutionalization. Jones (3) has written a devastating critique of the deinstitutionalization movement which does much to document the
lack of planning, of community acceptance, of adequate financial resources that has characterized the deinstitutionalization efforts of most states. He expounded upon the evils that have sprung up within the communities as a result; e.g., nursing home warehousing, clients who have simply disappeared, zoning battles over the establishment of halfway houses in residential communities.

Whatever the outcomes, this population has been returned to the community in increasing numbers. In addition, many who, in days past, would have been institutionalized are remaining in the community. Families, volunteer organizations and schools are visibly reminded that the needs of this population are not only those of the general community but greater in scope and depth, including their health needs. And, the nurse working at any site in the community is expected to meet those needs which fall within the domain of nursing, which is increasingly a mixture of the biological and behavioral sciences. Nurses may possess the necessary competencies and use them, may perceive themselves to have these competencies when in fact they do not, and/or may have these competencies but be unable to transfer them to mentally retarded clients. Currently practicing nurses' assessment of their competencies in caring for mentally retarded clients has tremendous implications for continuing education in nursing, which is, perceived from the conceptual framework of learning, a subset of education.
Definition of Terms

**Basic nursing education.**--The first program completed in nursing: diploma, associate degree, or baccalaureate degree.

**Competency.**--Self placement on a four-point continuum ranging from "Very Competent" to "Not at All Competent."

**Comprehensive clinical contact.**--Direct nursing care plus health teaching, referral, general advocacy, and interaction with family or caregivers.

**Continuing education.**--Planned learning experiences beyond a basic nursing education program.

**Perception of the adequacy of the clinical experience in mental retardation provided by basic nursing education.**--Self placement on a four-point continuum ranging from "No Clinical Contact" to "Comprehensive Clinical Contact."

**Perception of the adequacy of the content in mental retardation provided by basic nursing education.**--Self placement on a four-point continuum ranging from "Very Well" to "Not at All."

**Sustained personal contact.**--Interaction with a mentally retarded person in one's own family, in the extended family, in the family of a close friend, or as a result of a nurse-client relationship.
Delimitations

This study is delimited to registered nurses currently practicing in the Akron/Canton area of Ohio. Such nurses are, by preparation, divided into three distinct groups although they are registered through a common licensing procedure. The knowledge and skills expected of all three groups are distinctly different from those persons prepared at the practical (vocational) level and the aide level.

This study is also delimited to one category under the definition of developmental disabilities delineated by Public Law 94-103, that of mental retardation. This cluster of over 200 different anomalies is often accompanied by the other categories named in this act, but mental retardation is, in the main, the primary diagnosis. This is particularly true for those individuals who have been institutionalized.
CHAPTER BIBLIOGRAPHY


CHAPTER II

REVIEW OF THE LITERATURE

A traditional literature search was conducted followed by two computer surveys utilizing the Educational Resources Information Center (ERIC) and the National Library of Medicine's Interactive Retrieval Service (MEDLARS). Literature from higher education and adult/continuing education was scanned for material related to professional continuing education. Publications dealing with the broad field of continuing education in nursing were explored as well as those which focused on the basic education and continuing education needs of nurses as these related to competency in dealing with mentally retarded persons. Literature from special education, as well as that from other helping professions (medicine, social work, psychology, etc.) was searched. Other aspects of developmental disabilities (other than mental retardation), such as epilepsy, cerebral palsy, autism, and learning disabilities, were similarly scrutinized. Unfortunately, this effort provided no relevant information not previously discovered in the search of other categories.
Adult/Continuing Education

The literature indicates that while some types of formalized continuing education efforts have been in existence in the United States for well over a century (13, 27, 30),

In practice, much of adult education has been a tool for enabling those whose school careers were compromised when they were at the "appropriate" age to reap the benefits of schooling in adulthood... From this perspective, adult education is an addendum to formal schooling and quite definitely considered a secondary educational strategy, made necessary only by inadequate provision of schooling (21, p. 1).

Newer thinking, however, views all education as "the continuous development of individuals toward their full and unique potential throughout their life span. The role of the learner is to make use proactively of resources for his own continuous growth and development" (27, p. 23) as a mechanism by which society can succeed "in transforming its values in such a way that learning, fulfillment, becoming human has become its aim and all its institutions are directed to this end" (25, p. 134).

While such a holistic role for adult/continuing education still lacks full acceptance, the literature reflects an expanding, felt need for professional continuing education as the half-life of knowledge continued to shrink exponentially (8, p. 2; 11, p. 11; 23, p. 12; 32, p. xviii; 53, p. 28), as accountability becomes a given for professionals (8, p. 37; 17; 22, p. 94), and as mandatory
continuing education becomes legislated for an increasing number of nurses (2, 3, 15, 36, 37).

Special Education

Special education is that subset of education which most consistently interfaces with nursing as it relates to mental retardation. A review of the literature in that area, with particular reference to professional competency, seemed appropriate.

The course of special education has been traced by Fitzgibbon (18), Capobianco (10), and Robinson and Robinson (42), among many. Baumeister (7) was one of the first to promote an interdisciplinary approach to special education and its raison d'etre, mental retardation. Such sharing addresses the need for continuing learning of which Fitzgibbon has spoken,

> The complexities of mental retardation require a program of continuous expansion of the professional competencies of the teacher of the retarded . . . that connotes the co-operation of the teaching institution, the school system, and the professional initiative of the teacher [emphasis added] (op cit, pp. 292-293).

The range of those "professional competencies" was broadened in the next several years by passage of the Handicapped Children's Early Education Act in 1969, inclusion of handicapped children in Head Start programs, deinstitutionalization, and by litigation that successfully mandated against rejection of children with special learning needs by public school systems (39). A cogent and provocative analysis by
Wiegerink and Simeonsson of the effects of such variables on the "state of the art" of special education emphasized the need for a "wide variety of personnel" trained "on a full-time, part-time, and inservice basis" (52, p. 215). Taking note of "significant alteration in professional preparation" (52, p. 218) already recognized, the necessity for expansion of professional competencies was reinforced by the identification of such theoretical concepts and treatment modalities as early intervention, accountability, assessment techniques, infant stimulation, and advocacy as content germane to the field of special education.

Continuing Education in Nursing

A review of the literature revealed that nursing, as in other professions, has increasingly articulated a need for continuing education for its membership. This articulated need was formalized by the formation of the American Nurses' Association Council on Continuing Education in 1971 (33). Concurrently, pressure was exerted for mandatory continuing education as a prerequisite for relicensure; a movement which continues today despite much controversy (13, 45, 50). At the same time, other nurse leaders addressed other dimensions of continuing education; for example, Buckner (9) defined it in terms of generativity, a study by Adams (1) looked at the pragmatic issue of funding for continuing
education programs in nursing, (an issue also addressed by McCluskey) (31), and Cooper has called for research in continuing education in nursing (14).

Other Helping Professions

A paper by Ashe examined the problem of educating psychiatric residents in the subspecialty of mental retardation. In 1971, a questionnaire was sent to sixteen Canadian universities which offered post-graduate training in psychiatry. The pertinent data analyzed from this questionnaire were that two of the sixteen provided no didactic content in mental retardation, and three provided an optional mental retardation rotation in a clinical area for six months or more. One reply suggested that there was little interest with the explanation that "the most help which could be given to the retarded is educational and is beyond the competence of physicians" (4, p. 56).

Another Canadian study, which surveyed full-time medical practitioners in that country's mental retardation institutions, found that "the post-graduate training of physicians employed in mental retardation facilities has been characterized by a conspicuous lack of exposure to child psychiatry, genetics and mental retardation" (30, pp. 52-53). The author concluded that the move toward deinstitutionalization "makes a 'community psychiatry' approach more urgent" (30, p. 53).
Two studies focused on interest and/or training. A 1974 Scandinavian study (35) found a paucity of training resources for medical and dental students in the area of mental retardation. A survey of psychologists' interest and training in mental retardation (42) found that, while interest related positively to training, the level of interest was low.

A study of social work students' attitudes and knowledge regarding mental retardation was reported by Prothera and Ehlers (40). Students were pre-tested in each of four consecutive classes then given one of the four units of instruction in mental retardation and post-tested at the conclusion of each class. Three scales for differential meaning measured the concepts: average person, me, mental retardates. Analysis indicated that performance was significantly higher on all four post-tests than on the corresponding pre-tests. A Duncan Multiple Range Test indicated that students' attitudes towards themselves were significantly more positive than towards the average person or towards the mentally retarded. The researchers make the assumption that positive attitudes toward mental retardation is more than a function of knowledge. If this assumption is valid, it has ramifications for the present study as it relates to education.

A recent study (24) which investigated community coping of elderly retardates is also relevant although the
population studied had been deinstitutionalized for twenty years or more or had remained at home with parents throughout their life span and so, perhaps, had not acquired dependent behaviors to the degree often seen in persons who have been institutionalized for many years. Analysis of the interviews indicated that, to the degree that personal advocates were available, the majority of the basic physiological and care needs were being met and that members of this aged retarded population were therefore highly dependent on their place of residence and their caretaker.

Another useful study was concerned with the development of a community psychiatry model for a deaf population (16). The authors used a philosophic approach buttressed with a good review of the literature and an analysis of data from their own work. Their findings generalize to a mentally retarded population, many of whom have, if not hearing loss, per se, problems in auditory discrimination and expressive speech. Communication deficits may put both groups at risk for deviant personality features and behaviors, emotional underdevelopment, egocentric life perspective, and constricted life space. While their primary focus was on the mental health of their deaf clients, the authors spoke cogently of the critical necessity for interdisciplinary efforts "to provide coordination of services, reduce possible fragmentation and redundancy . . . eradicating what we have called 'shock-withdrawal-paralysis' which occurs
frequently . . . an encounter between a hearing professional and a deaf client is often colored by feelings and attitudes that often impede an already difficult communication for both members of the dyad . . . . Thus a worker may give minimal or noneffective attention to a deaf client" (16, p. 54).

Basic Education in Nursing Related to Mental Retardation

Two studies dealt with students in baccalaureate programs who were exposed to theory and clinical contact in mental retardation (21, 41). The first dealt with revision of the curriculum of a baccalaureate nursing program "to interweave knowledge of mental retardation and related handicaps throughout the entire nursing education program of the school" (21, p. 627). Clinical experience was incorporated by utilizing two local facilities, a child development center and a residential center for the retarded, and by including a family with a mentally retarded member in the clinical caseload. Pre- and post-tests "to measure knowledge resulting from increased exposure to mental retardation content" (21, p. 628) and to measure changes in attitude regarding mental retardation were administered. Statistical treatment indicated significantly increased knowledge in mental retardation and a significant positive change in attitudes regarding mental retardation.

The second (41) reported a study which had two objectives: (1) integration of both theory and practice in
mental retardation, for both students and faculty, into a baccalaureate nursing program; and (2) measurement of the differences in students' knowledge, attitude and behavior toward mental retardation compared with a control group of students enrolled in a non-integrated nursing curriculum that provided no structured clinical experience in mental retardation. Pre-tests and post-tests were administered to both groups. Measurement of knowledge revealed no significant differences between the two groups nor did behavior indices. Measurement of attitudes indicated a significant positive change in the experimental group that held across all items.

A paper presented by a nurse educator at the Annual Meeting of the American Association on Mental Deficiency in June, 1976, dealt with a grant proposal to study the teaching of mental retardation content in baccalaureate nursing programs throughout the United States (16). A questionnaire was sent to each of the 224 baccalaureate programs in nursing that were accredited by the National League for Nursing. Items were designed to elicit information regarding such variables as theoretical content, clinical contact, clock hours, and professional preparation of faculty as they related to undergraduate curricula in mental retardation. The project was funded and initiated in August, 1977, and results are not available at this time. However, the results should hold significance not only for baccalaureate
education in nursing but also for graduate education and continuing education in the profession and therefore interface with the present study in the latter dimension.

Continuing Education in Nursing Related to Mental Retardation

Several studies and/or papers were found that related to this area of the literature search. In 1966, Nursing Clinics of North America published "Symposium on Mental Retardation" which dealt primarily with prevention, case finding, and management of the young institutionalized mentally retarded client (5, 38, 47, 51). An article by Murray and Barnard (34) was devoted to the role of nursing education in training nurse specialists in mental retardation. A study by Thurman and Snows (48) reported the success of a teaching seminar established between an institution and a pediatric nurse practitioner program. Even though the focus of these studies was the institution, the assessment skills and training techniques would generalize to a mentally retarded population in any setting.

A study by Strong and Sandland (46) dealt with the results of a survey on nursing needs for the population in the community. Unfortunately, the thrust of the study was on those needs which are generally mentioned in discussions of community placement, such as housing, vocational training, and advocacy, rather than provision of those forms of care more traditionally labeled as "nursing."
A paper presented by Seidel (44) at the Annual Meeting of the American Association on Mental Deficiency in June, 1976, was appropriate to this study. It dealt with the preparation of a new project plan for a five-year proposal entitled *Nursing Training in the Care of the Developmentally Disabled and Multiply Handicapped*, by the Department of Maternal and Child Nursing, School of Nursing, University of Washington. Two questionnaires were developed for this project. The first, a future forecasting tool, was sent to leaders in the field throughout the United States; the second, a survey of professional function/tasks, was sent to graduates of the post-masters pathway, "Care of the Handicapped Child," offered by the University of Washington.

While some of the items on the Future Forecasting Questionnaire would seem to bear on the problem addressed in this study, the data related to projections of one to twenty years in the future rather than with the present perception of competency and was addressed to leaders in the field of developmental disabilities around the country rather than to nurses, per se. The second questionnaire was directed toward master's-level nurses who had explicit preparation in the care of handicapped children. It surveyed the professional functions and tasks in patient care, administration, teaching, and scientific research and writing with which they were involved in their daily work. These nurses had had intensive, formal education in mental retardation and
would therefore be expected to possess an expertise significantly greater than that of the nurses involved in the present study.

The best exemplification of the nursing role in health care of the mentally retarded client was found through personal correspondence with Lange and Paulson (28). In 1973, they developed a proposal for the Central Valley Regional Center, Orange County, California, to utilize a community nurse specialist in providing both direct and indirect nursing service to the special education population and their families residing in Orange County. The position description specified masters preparation, for while some of the functions delineated would be appropriate for a registered nurse, many would not. Skills in assessment (physical, behavioral, and social), consultation, and research were delineated as integral components of the position, as well as those functions more traditional to community health nursing, such as case finding, referral, and health teaching. This role was never implemented as funding was discontinued three months after approval was given. Paulson later began implementation of the role in Traverse City, Michigan.

An excellent study conducted "to evaluate the effects on services to handicapped children and their families of having an expert practitioner in mental retardation function in a generalized public health nursing program" has been
reported by Barnard (6, p. 7). In this case, the expert was a staff nurse who had accrued additional knowledge and skills in child development, mental retardation, and behavior modification. She provided her peers with a role model, consultation on individual cases, and information related to mental retardation. On initiation of the program, the twenty-seven nurses involved rated themselves as "feeling inadequate 34 percent of the time in dealing with the problem of mental retardation;" six months later, at the conclusion of the study, they rated themselves as feeling inadequate only 14 percent of the time. The report concluded, "If we are to use generalized health facilities to provide services to the handicapped individual, we must develop ways to support the competency of the generalized practitioner" (6, p. 77).

The study just described bears a distinct relationship to the present study. Nurses' self-perception of competency in dealing with mental retardation was measured in each. The enhancement of that competency noted above by utilization of an "in-house" consultant would seem to argue forcibly for creative methods of continuing education that will allow nurses to share their feelings of inadequacy and help them to problem-solve with support.
Conclusions

It may be that the paucity of the literature pertinent to this study is a reflection of Fox's (19) feeling that nursing (and education) is too busy practicing to write down its theories and the results of testing those theories. There are a few hopeful signs however. The new directions advocated for special education by Wiegerink and Simeonsson are also being, or have already been, incorporated into the nursing role as well as those of other helping professions. Such interdisciplinary concern augers well for a holistic developmental "treatment." Nursing curricula are being scrutinized for content related to mental retardation. References to continuing education for nurses in the area of mental retardation are almost nonexistent; however, models have been developed for "in-house" consultants/specialists who assume an educative function. Findings from studies done in other disciplines generalize over to nursing. Studies such as the present one can begin to provide a data base on which to predicate curricula, services, and programs as deinstitutionalization continues and fewer and fewer mentally retarded persons are institutionalized.
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CHAPTER III

METHODS AND FINDINGS

The general purpose of this study was to ascertain what relationships existed between nurses' perception of their competency to deal with mentally retarded clients and a number of variables: level of their basic nursing education, clinical experience in mental retardation, participation in continuing education offerings in mental retardation, and sustained personal contact with a mentally retarded person.

Research Design

Blatt and Garfunkel have questioned the relevancy of much educational research in the field of mental retardation. They said, "Frankly, we have viewed with concern an almost total commitment to experimental and quasiexperimental approaches" (2, p. 632) because the gap between such research and application is too wide. They advocate research that will help to bridge the gap and create a data base on which to predicate hypotheses which can lay the foundation for theory construction.

Such field research is often crude, primarily deductive and ex post facto in design. This study was done in that mode. Such research has recognized limitations (3, pp. 64-65; 13, pp. 128-142). It is not as highly formalized and
developed as experimental research, nor can cause and effect relationships be documented (8, pp. 10-11). However, it does have merit when the intent is to analyze the happenings of real life (12, pp. 189-190).

Selection of Subjects

The population to be studied was defined as those nurses living within the five counties that comprize the Akron/Canton, Ohio, area (Summit, Portage, Stark, Wayne, and Medina) who were registered with the Ohio State Board of Nursing Education and Nurse Registration. A computer list of the target population was obtained from that agency and a simple random sample of 200 nurses was drawn from it, utilizing a table of random numbers.

A copy of the questionnaire, accompanied by a cover letter and a stamped self-addressed return envelope, was mailed to each member of the random sample on June 4, 1977. (See Appendix A for copies of the cover letter and questionnaire.) Each questionnaire was coded in order to facilitate repeated mailings to those who did not respond initially. Since the initial mailing date coincided with the traditional beginning of the summer vacation season, a second mailing was delayed and, by July 23, 1977, 114 responses had been returned, providing a response rate of 57 percent. This number was deemed adequate and a second mailing was not needed.
Description of the Sample

In basing an inference on a sample we are caught up in what appears to be a dilemma, which we may call the paradox of sampling. On the one hand, the sample is of no use to us if it is not truly representative of its population, if it is not a "fair" sample. On the other hand, to know that it is representative, we must know what the characteristics of the population are, so that we can judge whether the sample reflects them properly; but in that case, we have no need of the sample at all. The paradox is resolved by the consideration that the representativeness is not a property of the sample but rather of the procedure by which the sample is obtained, the sampling plan. And we can know—though never for sure—that this is an appropriate one without already knowing what we are trying to find out, the characteristics of the population. In any given case, the content of knowledge is validated by the method employed to arrive at it; but the method in general is grounded in its success in yielding the contents sought for. This situation can be compared with a corresponding "paradox of usage": we establish that a particular use of a word is correct by consulting the dictionary, but the dictionary itself is based on how words are in fact used (7, pp. 239-240) . . . .

A sample is acceptably free from bias if it is a random one (7, p. 242).

Some relatively recent data is available relevant to the sampling area from which the sample for this study was drawn. Current statistical and demographic data collected by official agencies in the State of Ohio is exceedingly difficult to obtain since the passage of a statute, by the 1975 state legislature, designed to protect the confidentiality of records which is presently being tested in the courts. In order to obtain the computer list from which the simple random sample for this study was drawn the following procedure had to be followed: (1) a formal request by the College of Nursing, The University of Akron, Akron, Ohio,
had to be made to the Ohio Board of Nursing Education and Nurse Registration; (2) the full board had to endorse the request; (3) the request, accompanied by a letter of endorsement, was sent to the attorney general of Ohio; (4) the attorney general reviewed and approved the request and sent it to the state comptroller; (5) the comptroller notified the College that the list might be purchased. This procedure took almost six months. The Ohio Board of Nursing Education and Nurse Registration published The Nurse Inventory for 1973 (10) which was a compilation of statistics garnered from the information derived from license renewal applications. Data on age, place of employment, and basic preparation were presented in tabular form and broken down by county of residence.

Statistics extracted from The Nurse Inventory for 1973 for the five-county area from which the sample was drawn indicated that 78.3 percent of the nurses were diploma graduates, 9.2 percent were associate degree graduates, and 12.5 percent were baccalaureate degree graduates. With regard to age, 27.6 percent were in the 20-29 age range, 25.5 percent were in the 30-39 range, 24.1 percent in the 40-49 range, 13.0 percent in the 50-59 range, and 3.0 percent were 60 and over, 3.0 percent did not report age. Data concerning place of employment indicated that 70.6 percent were employed in hospitals, 2.9 percent in nursing homes, 4.0 percent in public health, 6.7 percent in offices, and 1.2 percent in school systems.
These percentages compare well with those derived from the sample drawn for the present study. Of the 114 respondents, 85 indicated that their basic education in nursing was at the diploma level (74.6 percent), 12 held associate degrees in nursing (10.5 percent), and 17 indicated that the baccalaureate degree provided their basic nursing education (14.9 percent). Ninety respondents received their basic nursing education in Ohio, 23 in other states. The dates of initial registration ranged from 1937 to 1976. In terms of age, 26 respondents were between 20 and 29 (22.8 percent), 35 between 30 and 39 (30.7 percent), 36 between 40 and 49 (31.6 percent), and 17 were 50 or more (14.9 percent).

The majority of respondents were currently employed in hospitals of 200 or more beds (49.5 percent). However, 72.1 percent listed their immediately previous position as having been in such an institution. Staff nurses comprised the bulk of the respondents (60.6 percent).

As noted in A Study of Nursing Needs and Resources, published by the Ohio Commission on Nursing in September, 1975 (14), Ohio differs from the national nursing picture in several ways which have relevance for this sample and the population from which it was drawn. Only two diploma schools of nursing remained in the State of Texas in 1974; by contrast, Ohio has twenty-nine such schools in existence at the time of this writing.
Further, Ohio has experienced an out-migration of nurses since 1967 such that the Ohio Commission on Nursing reported an attrition rate of 5.4 percent for Ohio in 1975, compared to a national rate of 3 percent for that year.

**Method**

**Instrument.**—The instrument employed (see Appendix A) was a questionnaire constructed specifically for this study. Item VIII required only a "Yes" or "No" answer. Items IX, X(a) and (b), and XI were Likert-type scales. The range of choices for Item IX was "no clinical contact" through "comprehensive clinical contact." For Items X(a) and (b) and XI the response choices ranged from "not at all" to "very well."

To determine the reliability of the rating scale, fifteen nurses were asked to complete the questionnaire in a pilot study. Conbach Alpha Coefficients (4) were calculated according to Veldman (16) on each of the three sections. The Cronbach Alpha Coefficient is a variation of the Kuder-Richardson formula which uses an item analysis in testing for internal consistency reliability. Though internal consistency reliability does tend to yield higher estimates than test-retest, there are desirable characteristics: "The conditions of administration are near identical for both halves, there is no time lag between administration, and the attitudes or response sets of the respondents should be near identical for the two administrations" (12, p. 134).
The estimates derived from these calculations are reported in Table I. All three sections and the total are highly reliable with respect to internal consistency.

**TABLE I**

CRONBACH ALPHAS FOR THREE SECTIONS OF THE RATING SCALE AND THE TOTAL

<table>
<thead>
<tr>
<th>Question</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. X(a) Basic Nursing Education Content</td>
<td>0.9658</td>
</tr>
<tr>
<td>No. X(b) Continuing Education</td>
<td>0.9824</td>
</tr>
<tr>
<td>No. XI Present Perception of Competency</td>
<td>0.9581</td>
</tr>
<tr>
<td>Total</td>
<td>0.9183</td>
</tr>
</tbody>
</table>

In addition, members of the pilot sample population were interviewed singly after completing the questionnaire in an effort to ascertain whether they had difficulty in understanding the items on the questionnaire, the method for marking responses, or other difficulties in responding. This precaution is recommended by Fox "if the instrument is newly constructed" (6, p. 67); "to see if the subjects can handle the data-collection instruments" (6, p. 66). No difficulties were reported.

Content validity, as defined by Saxe (13, p. 232), was established by submitting the instrument for assessment by a panel of seven experts selected by Gene Patterson, Consultant, Program Services, National Association for Retarded Citizens Research and Demonstration Institute, Arlington,
Texas, a researcher, author, and recognized authority in the field of mental retardation. Revisions were made as suggested by the panel of experts.

**Statistical Hypotheses**

The .05 alpha level was specified as the level of significance for the statistical hypotheses; analysis of the data is reported at the actual level of significance. Direction of significance was not predicted since only two studies were found which attempted to measure knowledge (11) or competency (1). As reported in Chapter II, the first found no significant difference in knowledge between two groups, the second found a significant positive change in perception of competency among nurses who were exposed to ongoing contact with a mental retardation specialist. Examination was made of the relationship between nurses' perception of their competency to deal with mentally retarded clients and the level of their basic nursing education, their perception of how well that basic nursing education prepared them clinically to deal with mentally retarded clients, how well that basic nursing education prepared them in selected content germane to mental retardation, how well continuing education offerings prepared them in the area of mental retardation, and whether or not they had sustained personal contact with a mentally retarded person.
The statements of the hypotheses follow:

1. There is no difference among the levels of basic nursing education of nurses in their perception of their competency to deal with mentally retarded clients.

2. There is no relationship between nurses' perception of the adequacy of the clinical experience in mental retardation provided by their basic nursing education and their perception of their competency to deal with mentally retarded clients.

3. There is no relationship between nurses' perception of the adequacy of content related to the etiology of mental retardation provided by their basic nursing education and their perception of their competency to deal with mentally retarded clients.

4. There is no relationship between nurses' perception of the adequacy of content related to risk factors associated with mental retardation provided by their basic nursing education and their perception of their competency to deal with mentally retarded clients.

5. There is no relationship between nurses' perception of the adequacy of content related to skills and/or techniques appropriate for use with a mentally retarded population provided by their basic nursing education and their perception of their competency to deal with mentally retarded clients.
6. There is no relationship between nurses' perception of the adequacy of content related to support systems as they relate to mental retardation provided by their basic nursing education and their perception of their competency to deal with mentally retarded clients.

7. There is no relationship between nurses' perception of the adequacy of continuing education programs in mental retardation to which they have been exposed, and their perception of their competency to deal with mentally retarded clients.

8. There is no relationship between sustained personal contact with a mentally retarded person and nurses' perception of their competency to deal with mentally retarded clients.

Operational Definitions

The following questions were used for testing the hypotheses:

VIII. Have you sustained personal contact with a mentally retarded person who is (a) your own child; (b) a relative; (c) a member of the family of a close friend; or (d) a client or member of the family of a client? Question VIII was scored "yes" or "no," with a "yes" response indicating sustained personal contact.

IX. Would you please indicate your perception of how well your basic nursing education prepared you
in the area of mental retardation by selecting the most appropriate response listed below. Question IX employed a Likert-type score with five possible responses: 1-no clinical contact; 2-minimal contact (e.g., facility tours); 3-all the contact that direct nursing care provides; 4-"3" above plus health teaching, referrals, and general advocacy; 5-comprehensive clinical contact (i.e., "3" and "4" above plus much interaction with family or caregivers). A score of "4" indicated the highest response.

X. Listed below are some categories of basic information relevant to working with mentally retarded clients. Would you please indicate your perception of (a) how well your basic nursing education prepared you in these areas; and (b) how well continuing education offerings have prepared you in these areas by using the following code to indicate the most appropriate response.

Categories
1. risk factors
2. etiology
3. stimulation techniques
4. feeding techniques
5. habilitation techniques
6. communication techniques
7. interviewing techniques
8. behavior modification techniques
9. family supports
10. community supports
11. legal supports

XI. Please indicate how competent you feel today about your knowledge in each of these categories, using the same code. The categories listed above were also used for scoring this question.

Questions Xa, Xb, and XI also utilized a Likert-type scale with possible responses ranging from "not at all" (scored as "1") to "very well" (scored as "4").

Skills and/or techniques appropriate for use with a mentally retarded population, defined as items three through eight, were subsumed under the list of categories: stimulation, feeding, habilitation, communication, interviewing, and behavior modification techniques.

Support systems as they relate to mental retardation, defined as items nine through eleven, were subsumed under the list of categories: family, community, and legal support systems.

Procedures for Analysis of Data

The criterion for all hypotheses (perceived competency at the time the instrument was administered) was determined by ascertaining the sum of the scores for all items subsumed under question XI (Please indicate how competent you feel today about your knowledge in each of these categories, using the same code: not at all-1, poorly-2, adequately-3,
very well-4) of the instrument. Data analysis was done by use of the statistical procedures outlined in the Statistical Package for the Social Sciences (SPSS) computer programs (2).

Hypothesis one was tested with a one-way analysis of variance which provides a powerful test appropriate for use with two or more samples. Roscoe notes three assumptions which underlie the use of the one-way analysis of variance.

1. The criterion scores are statistically independent. This can be assured only by the process of randomization—by the random selection of subjects from the population under study in ex post facto research.

2. The criterion scores are drawn from a normally distributed population . . . the analysis is quite robust with respect to the assumption of normality if samples (even very small samples) of equal size are used.

3. The criterion scores are drawn from populations having the same variance . . . the analysis of variance is quite robust with respect to the assumption of homogeneous variances if samples of equal size are used (12, pp. 300-301).

Despite these constraints, the one-way analysis of variance is an extremely useful tool for analysis because of its robustness in permitting violations of the assumptions underlying it (5, 17).

Although a one-way analysis of variance was done, sample sizes were not equal and a Cochran's test for homogeneity of variances was run and the variances were found to be unequal. Therefore, the data was subjected to a Kruskal-Wallis test, a non-parametric alternative to the one-way analysis of variance which does not require equal variances.
The Pearson product moment correlation coefficient was used to test hypotheses two, three, and four. "The correlation coefficient indicates the degree to which an independent variable varies with a dependent variable" and so may be used in "estimating the strength of association" (15, p. 150). It provides a measure of relationship between two variables. It does not imply causation although it has been found to be useful in helping to identify relevant and irrelevant variables that can later be used to test causal hypotheses (13, p. 294). Campbell and Stanley note, in discussing correlational and ex post facto designs,

Such data are relevant to causal hypotheses inasmuch as they expose them to disconfirmation. If a zero correlation is obtained, the credibility of the hypothesis is lessened. If a high correlation occurs, the credibility of the hypothesis is strengthened in that it has survived a chance of disconfirmation . . . the relatively inexpensive correlational approach can provide a preliminary check of hypotheses, and those which survive this can be checked through the more expensive experimental manipulation (3, p. 64).

The Pearson product moment correlation coefficient is an appropriate statistic to determine the extent of relationship between two variables when the variables are quantitative. It indicates both the direction (positive and negative) and the magnitude of the correlation between the two variables; however, it is not recommended for use when curvilinearity of the variables exists (5).

The same statistical procedure was used to test hypothesis number five. The scores for items numbered three,
four, five, six, seven, and eight, subsumed under Basic Nursing Education \((X(a))\) in the questionnaire, were averaged and the resulting figure utilized as the independent variable.

Scores for items numbered nine, ten, and eleven, subsumed under Basic Nursing Education \((X(a))\) in the questionnaire, were also averaged and the resulting figure utilized as the independent variable for hypothesis six. A Pearson product moment correlation coefficient was run.

Hypotheses seven and eight were also tested with the Pearson product moment correlation coefficient.

Findings

**Hypothesis One**

There is no difference among the levels of basic nursing education of nurses in their perception of their competency to deal with mentally retarded clients.

Table II reports the means, standard deviations and number of nurse respondents residing within Portage, Summit, Wayne, Stark, or Medina County, Ohio, by level of their basic nursing education: diploma, associate degree or baccalaureate.
TABLE II
MEANS, STANDARD DEVIATIONS, AND NUMBER OF NURSES BY LEVEL OF BASIC NURSING EDUCATION ON PERCEPTION OF COMPETENCY

<table>
<thead>
<tr>
<th>Level of Basic Nursing Education</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diploma</td>
<td>22.49</td>
<td>7.71</td>
<td>78</td>
</tr>
<tr>
<td>Associate Degree</td>
<td>14.18</td>
<td>4.12</td>
<td>11</td>
</tr>
<tr>
<td>Baccalaureate</td>
<td>23.24</td>
<td>5.82</td>
<td>17</td>
</tr>
</tbody>
</table>

Table III reports the results of the analysis of variance among nurses whose basic nursing education varied among the three different levels. Analysis of variance broke down the criterion score (competency determined by the sum of the scores in question number XI of the questionnaire) among the variously prepared nurses (diploma, associate degree, baccalaureate).

TABLE III
ANALYSIS OF VARIANCE AMONG THE LEVELS OF NURSE EDUCATION ON PERCEPTION OF COMPETENCY

<table>
<thead>
<tr>
<th>Category</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>709.9492</td>
<td>2</td>
<td>354.9746</td>
<td>6.9087</td>
<td>.005</td>
</tr>
<tr>
<td>Within Groups</td>
<td>5292.2070</td>
<td>103</td>
<td>51.3806</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6002.1562</td>
<td>105</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Kruskal-Wallis test revealed that there was a difference in the means of the three groups \( (H = 12.76) \) which was significant at the .002 level. (Table IV.)

**TABLE IV**

**SUM OF THE RANKS OF SCORES CALCULATED FOR THE KRUSKAL-WALLIS TEST, BY LEVEL OF BASIC NURSING PREPARATION**

<table>
<thead>
<tr>
<th>Level</th>
<th>R</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diploma</td>
<td>4,187.7</td>
<td>78</td>
</tr>
<tr>
<td>Associate Degree</td>
<td>241.5</td>
<td>11</td>
</tr>
<tr>
<td>Baccalaureate</td>
<td>843.5</td>
<td>15</td>
</tr>
</tbody>
</table>

Hypothesis one was rejected. There was a difference among the three groups of nurses based on type of basic nursing education received and their perception of their competency to deal with mentally retarded clients.

**Hypothesis Two**

There is no relationship between nurses' perception of the adequacy of the clinical experience in mental retardation provided by their basic nursing education and their perception of their competency to deal with mentally retarded clients.

Table V reports the frequency distribution of the nurse respondents residing in Portage, Summit, Wayne, Stark, or Medina County, Ohio, by their self-perception of the
clinical preparation in mental retardation provided by their basic nursing education.

TABLE V
FREQUENCY DISTRIBUTION OF NURSES BY SELF-PERCEPTION OF CLINICAL PREPARATION IN MENTAL RETARDATION PROVIDED BY THEIR BASIC NURSING EDUCATION

<table>
<thead>
<tr>
<th>Self-Perception</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No clinical contact</td>
<td>23</td>
<td>20</td>
</tr>
<tr>
<td>Minimal contact</td>
<td>51</td>
<td>46</td>
</tr>
<tr>
<td>Direct nursing care contact</td>
<td>27</td>
<td>24</td>
</tr>
<tr>
<td>Direct nursing care plus health teaching, referrals, general advocacy</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Comprehensive clinical contact (3 &amp; 4) plus interaction with family or caregivers</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

The Pearson product moment correlation between the sum of their competency areas and their perception of their competency rating was 0.3468. This was significant at the .001 level for a two-tail test. (See Table IX.)

Hypothesis two was rejected. There was a positive relationship between the nurses' perception of the adequacy of their clinical experience in mental retardation provided by their basic nursing education and their perception of their competency to deal with mentally retarded clients.
Table VI reports the frequency distributions of nurse respondents', residing within Portage, Summit, Wayne, Stark, or Medina County, Ohio, self-perception of the adequacy of content provided by their basic nursing preparation in the areas of risk factors, etiology, skills and/or techniques, and support systems as these areas relate to mental retardation.

### TABLE VI

FREQUENCY DISTRIBUTIONS OF NURSES' RESPONSES TO
THE ADEQUACY OF PREPARATION PROVIDED THEM
IN SELECTED AREAS OF CONTENT RELATED
TO MENTAL RETARDATION

<table>
<thead>
<tr>
<th>Category</th>
<th>Not At All</th>
<th>Poorly</th>
<th>Adequately</th>
<th>Very Well</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Factors</td>
<td>35</td>
<td>41</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Etiology</td>
<td>23</td>
<td>39</td>
<td>43</td>
<td>4</td>
</tr>
<tr>
<td>Stimulation Techniques</td>
<td>46</td>
<td>41</td>
<td>21</td>
<td>1</td>
</tr>
<tr>
<td>Feeding Techniques</td>
<td>36</td>
<td>42</td>
<td>30</td>
<td>2</td>
</tr>
<tr>
<td>Habilitation Techniques</td>
<td>41</td>
<td>45</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>Communication Techniques</td>
<td>41</td>
<td>41</td>
<td>25</td>
<td>3</td>
</tr>
<tr>
<td>Interviewing Techniques</td>
<td>55</td>
<td>36</td>
<td>18</td>
<td>1</td>
</tr>
<tr>
<td>Behavior Modification Techniques</td>
<td>48</td>
<td>43</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>Family Supports</td>
<td>41</td>
<td>44</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>Community Supports</td>
<td>42</td>
<td>42</td>
<td>24</td>
<td>2</td>
</tr>
<tr>
<td>Legal Supports</td>
<td>62</td>
<td>37</td>
<td>11</td>
<td>0</td>
</tr>
</tbody>
</table>
Hypothesis Three

There is no relationship between nurses' perception of the adequacy of content related to knowledge of the etiology of mental retardation provided by their basic nursing education and their perception of their competency to deal with mentally retarded clients.

The correlation between the nurses' perception of how well their basic nursing education prepared them in the category of etiology and their perception of their competency to deal with mentally retarded clients was 0.4648. This was significant at the .001 level for a two-tail test. (See Table IX.)

Hypothesis three was rejected. There was a positive relationship between the nurses' perception of the adequacy of content related to the etiology of mental retardation provided by their basic nursing education and their perception of their competency to deal with mentally retarded clients.

Hypothesis Four

There is no relationship between nurses' perception of the adequacy of content related to knowledge of risk factors associated with mental retardation provided by their basic nursing education and their perception of their competency to deal with mentally retarded clients.
The correlation between the nurses' perception of the adequacy of content related to risk factors associated with mental retardation and their perception of competency to deal with mentally retarded clients was 0.4648. This was significant at the .001 level for a two-tail test. (See Table IX.)

Hypothesis four was rejected. There was a positive relationship between the nurses' perception of the adequacy of content related to risk factors associated with mental retardation provided by their basic nursing education and their perception of their competency to deal with mentally retarded clients.

**Hypothesis Five**

There is no relationship between nurses' perception of the adequacy of content related to skills and/or techniques appropriate for use with a mentally retarded population provided by their basic nursing education and their perception of their competency to deal with mentally retarded clients.

The correlation between the nurses' perception of the adequacy of content related to skills and/or techniques appropriate for use with a mentally retarded population provided by their basic nursing education and their perception of competency to deal with a mentally retarded client was 0.4960. (See Table IX.) This was significant at the .001 level for a two-tail test.
Hypothesis five was rejected. There was a positive relationship between the nurses' perception of the adequacy of content related to skills and/or techniques appropriate for use with a mentally retarded population provided by their basic nursing education and their perception of their competency to deal with mentally retarded clients.

**Hypothesis Six**

There is no relationship between nurses' perception of the adequacy of content related to support systems as they relate to mental retardation provided by their basic nursing education and their perception of their competency to deal with mentally retarded clients.

The correlation between these two variables was 0.4601. This was significant at the .001 level for a two-tail test. (See Table IX.)

Hypothesis six was rejected. There is a positive relationship between nurses' perception of the adequacy of content related to support systems as they relate to mental retardation provided by their basic nursing education and their perception of their competency to deal with mentally retarded clients.

**Hypothesis Seven**

There is no relationship between nurses' perception of the adequacy of continuing education programs in mental retardation to which they have been exposed and their
perception of their competency to deal with mentally retarded clients.

Table VII reports the frequency distribution of nurse respondents, residing in Portage, Summit, Wayne, Stark, or Medina County, Ohio, by self-perception of the adequacy of continuing education in selected areas of content related to mental retardation to which they have been exposed.

**TABLE VII**

FREQUENCY DISTRIBUTION OF NURSES' RESPONSES BY SELF-PERCEPTION OF THE ADEQUACY OF CONTINUING EDUCATION IN SELECTED AREAS OF CONTENT RELATED TO MENTAL RETARDATION TO WHICH THEY HAVE BEEN EXPOSED

<table>
<thead>
<tr>
<th>Category</th>
<th>Not At All</th>
<th>Poorly</th>
<th>Adequately</th>
<th>Very Well</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Factors</td>
<td>49</td>
<td>12</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>Etiology</td>
<td>46</td>
<td>10</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>Stimulation Techniques</td>
<td>51</td>
<td>13</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Feeding Techniques</td>
<td>50</td>
<td>14</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Habilitation Techniques</td>
<td>51</td>
<td>9</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Communication Techniques</td>
<td>49</td>
<td>12</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Interviewing Techniques</td>
<td>51</td>
<td>9</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>Behavior Modification Techniques</td>
<td>47</td>
<td>11</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Family Supports</td>
<td>43</td>
<td>13</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>Community Supports</td>
<td>43</td>
<td>13</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Legal Supports</td>
<td>53</td>
<td>12</td>
<td>6</td>
<td>0</td>
</tr>
</tbody>
</table>
The correlation between nurses' perception of the adequacy of continuing education programs in mental retardation to which they have been exposed and their perception of competency to deal with mentally retarded clients was 0.5319. (See Table IX.) This was significant at the .001 level for a two-tail test.

Hypothesis seven was rejected. There is a positive relationship between nurses' perception of the adequacy of continuing education programs in mental retardation to which they have been exposed and their perception of their competency to deal with mentally retarded clients.

**Hypothesis Eight**

There is no relationship between sustained personal contact with a mentally retarded person and nurses' perception of their competency to deal with mentally retarded clients.

Table VIII reports the frequency distribution of nurse respondents, residing within Portage, Summit, Wayne, Stark, or Medina County, Ohio, by sustained personal contact with a mentally retarded person.
TABLE VIII

FREQUENCY DISTRIBUTION OF NURSES BY SUSTAINED PERSONAL CONTACT WITH A MENTALLY RETARDED PERSON

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>45</td>
<td>41</td>
</tr>
<tr>
<td>No</td>
<td>65</td>
<td>59</td>
</tr>
</tbody>
</table>

The correlation between sustained personal contact with a mentally retarded person and nurses' perception of their competency to deal with mentally retarded clients was -0.2389. (See Table IX.) This was significant at the .016 level for a two-tail test.

Hypothesis eight was rejected. There was a relationship between sustained personal contact with a mentally retarded person and nurses' perception of their competency to deal with mentally retarded clients.

Results of Statistical Analysis: Hypotheses Two Through Eight

Table IX reports the results of the Pearson product moment correlations done to test the relationships specified in hypotheses two through eight.
TABLE IX

CORRELATION COEFFICIENTS BY THE HYPOTHESIS TESTED, NUMBER OF SUBJECTS AND SIGNIFICANCE LEVEL

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Correlation</th>
<th>n</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.3468</td>
<td>106</td>
<td>.001</td>
</tr>
<tr>
<td>3</td>
<td>0.4648</td>
<td>105</td>
<td>.001</td>
</tr>
<tr>
<td>4</td>
<td>0.4625</td>
<td>106</td>
<td>.001</td>
</tr>
<tr>
<td>5</td>
<td>0.4960</td>
<td>105</td>
<td>.001</td>
</tr>
<tr>
<td>6</td>
<td>0.4601</td>
<td>105</td>
<td>.001</td>
</tr>
<tr>
<td>7</td>
<td>0.5319</td>
<td>105</td>
<td>.001</td>
</tr>
<tr>
<td>8</td>
<td>-0.2389</td>
<td>103</td>
<td>.016</td>
</tr>
</tbody>
</table>

Serendipitous Findings

Some secondary gains were found in the data. A few of the questions included in the questionnaire, for the sole purpose of drawing a profile of the sample, provided serendipitous information. Analysis of the frequency distribution of responses to the items which made up the categories used to test hypotheses three through six were skewed toward the negative response choices. Across all items, only twenty-one indicated that the basic nursing education prepared them "very well" for dealing with a mentally retarded client. For the items subsumed under the category "skills and/or techniques appropriate for use with a mentally retarded person," the percentage who perceived themselves to have been prepared "not at all" by their basic nursing education were as follows: stimulation
techniques---42.2 percent; feeding techniques---32.7 percent; habilitation techniques---40.0 percent; communication techniques---37.2 percent; interviewing techniques---50.0 percent; behavior modification techniques---43.6 percent. The percentage of responses to the choice "not at all" for the items subsumed under the category "support systems as they relate to mental retardation" were: family supports---37.2 percent; community---38.1 percent; legal supports---56.3 percent.

The number of responses to the choice "not at all" for preparation by continuing education offerings to deal with a mentally retarded client is overwhelming even on inspection; 533 out of a total of 775 or 68.8 percent. Such negative response choices, both for basic nursing education and continuing education, would appear to indicate a very real paucity of content related to mental retardation and/or an inability on the part of nursing students to process such content.
CHAPTER BIBLIOGRAPHY


CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The general purpose of this study was to ascertain the relationship between nurses' perception of their competency to deal with mentally retarded clients as this competency related to their basic nursing education, continuing education, and degree of sustained personal contact with one or more mentally retarded persons.

A review of the literature revealed a dearth of material devoted to nursing as it related to mental retardation. No literature devoted specifically to the provision of nursing care to a mentally retarded person who is acutely ill was found.

The procedures for conducting the study focused on the general purpose of the study: to ascertain, through statistical analysis of the eight hypotheses, whether or not there were significant differences in nurses' perception of their competency to deal with mentally retarded clients which were related to the level of their basic nursing education, theory and clinical experience in mental retardation provided by that basic nursing education, continuing education in mental retardation, and sustained personal contact.
The research design was *ex post facto*. Although the stringent limitations imposed by this form of research were noted, it seemed the most appropriate approach for beginning to gather a data base "from the field" that could be used to generate experimental hypotheses.

Recent data which would provide a description of the sampling area from which the sample was derived are extremely difficult to obtain since the enactment in 1975 of a very complicated statute protecting the confidentiality of public records. The latest available data were extracted from *The Nurse Inventory for 1973*, and *A Study of Nursing Needs and Resources, September, 1975*. A comparison of this data with that derived from the questionnaire used for this study indicates that the sample is not biased. Two variables noted in *A Study of Nursing Needs and Resources, September, 1975*, may be significant: (1) five diploma nursing programs are still extant within the sampling area; (2) Ohio, as a whole, has experienced a significant out-migration of nurses within the last decade.

The basic nursing education for 74.6 percent of the sample was diploma, for 10.5 percent the associate degree, and for 14.9 percent the baccalaureate degree; 22.8 percent were in the 20-29 age range, 30.7 percent in the 30-39 range, 31.6 percent in the 40-49 range, and 14.9 percent in the 50 and over range.
There was a definite shift from employment in acute care (hospitals) to other settings; 65.8 percent indicated their previous site of employment as a large (200 or more beds) hospital, 39.5 percent as their current site; 7.9 percent indicated they had previously worked in a hospital with less than 200 beds, 3.5 percent indicated they were currently working in such a setting. The percentage working in public health remained unchanged (2.6 percent), while those employed by school systems jumped from 1.8 percent to 13.2 percent; Physicians' offices were indicated by 2.6 percent as the site of previous employment, by 4.4 percent as their current employment site. The figure for "other" increased from 7.9 percent to 13.2 percent.

A computer list of nurses residing within the five counties (Portage, Summit, Wayne, Stark, and Medina) that comprize the Akron/Canton area was obtained from the Ohio State Board of Nursing Education and Nurse Registration. A simple random sample of 200 nurses was drawn from this list, using a table of random numbers according to standard procedure. A copy of the questionnaire, and a stamped, self-addressed envelope was mailed to each member of the simple random sample on June 4, 1977. Each copy of the questionnaire was coded to facilitate additional mailings if that became necessary. By July 23, 1977, the response rate had reached 57 percent, well within the parameters of 50-60 percent initially set, negating the need for a second mailing.
An instrument was constructed specifically for this study. A pilot study was done, using a random sample of fifteen nurses. Cronbach Alpha Coefficients (a variation of the Kuder-Richardson formula which is designed to eliminate some of the problems encountered with the latter) was done to test for internal consistency. Results indicated high reliability. In addition, each member of the pilot sample was interviewed singly after responding to the questionnaire in an effort to uncover problems with wording, juxtaposition of items, structure of the questionnaire, etc.

Content validity was assessed by a panel of seven experts in the field of mental retardation. Revisions were made as suggested by that panel.

The .05 alpha level was selected as the level of significance for all hypotheses.

The criterion measurement for all hypotheses (perceived competency in dealing with mentally retarded clients) was determined by computing the sum of the scores for all items subsumed under question XI of the instrument.

Since data generated were not of equal sample size, and the Cochran test showed unequal variance, a Kruskal-Wallis formula was used to test hypothesis one.

The Pearson product moment correlation coefficient was used to test hypotheses two through eight since, although it cannot be used to determine causality, it does define relationships and it does provide discomfirmation. Direction
was not indicated since the two most relevant studies which had been subjected to statistical treatment were not definitive.

The first hypothesis, that there is no difference among the levels of basic nursing education of nurses in their perception of their competency to deal with mentally retarded clients, was rejected. Results of a Kruskal-Wallis test indicated that the means of the three samples were not equal ($H = 12.76$). This was significant at the .002 level.

Hypothesis two, that there is no relationship between nurses' perception of the adequacy of the clinical experience in mental retardation provided by their basic nursing education and their perception of their competency to deal with mentally retarded clients, was rejected. The Pearson product moment correlation coefficient between the sum of their competency areas and their perception of their competency rating was 0.3468. This was significant at the .001 level for a two-tail test, indicating a positive relationship.

Hypothesis three, that there is no relationship between nurses' perception of the adequacy of content related to knowledge of the etiology of mental retardation provided by their basic nursing education, was rejected. The correlation was 0.4648 which was significant at the .001 level in a positive direction.
Hypothesis four, that there is no relationship between nurses' perception of their competency to deal with mentally retarded clients and their perception of the adequacy of content related to risk factors associated with mental retardation provided by their basic nursing education, was rejected. The correlation between these two variables was 0.4648, yielding a positive significance at the .001 level.

Hypothesis five, that there is no relationship between nurses' perception of their competency to deal with mentally retarded clients and their perception of the adequacy of content related to skills and/or techniques appropriate for use with a mentally retarded population, was rejected. The correlation between these two variables was 0.4960, yielding a positive significance at the .001 level.

Hypothesis six, that there is no relationship between nurses' perception of their competency to deal with mentally retarded clients and their perception of the adequacy of content related to support systems as they relate to mental retardation provided by their basic nursing education, was rejected. The correlation between these two variables was 0.4601, yielding a positive significance at the .001 level.

Hypothesis seven, that there is no relationship between nurses' perception of their competency to deal with mentally retarded clients and their perception of the adequacy of continuing education programs in mental retardation to which they have been exposed, was rejected. The correlation
between these two variables was 0.5319, yielding a positive significance at the .001 level.

Hypothesis eight, that there is no relationship between nurses' perception of their competency to deal with mentally retarded clients and sustained personal contact with a mentally retarded person, was rejected. The correlation between these two variables was -0.2389, yielding a positive significance at the 0.016 level. (The negative sign was a function of the way the instrument was scored.)

Conclusions

The conclusions drawn from this study were limited by the *ex post facto* design, by those inherent in the use of correlational statistics, and by the narrow scope of the population from which the simple random sample was drawn. The base of applicable literature was severely limited. This limitation influenced the research design inasmuch as it seemed to point out a need for a data base on which to predicate some hypotheses which might then be tested by a true experimental design. As Susser has noted, "Human minds seem to be more credulous than sceptical, and most people need protection against being gulled" so research "strategies aim to avoid 'false positives,' inferences that give credence to causality where none exists" (4, p. 141). Field studies utilizing correlational statistics provide no
true data on "true positives" but they provide an excellent mechanism for eliminating "false positives."

Conclusions, thus, must be drawn cautiously and with the stipulation that they can only be generalized to the sampling area from which the sample was derived.

The following conclusions are drawn from the tested hypotheses. (1) The inclusion of a comprehensive clinical experience in mental retardation in basic nursing education will enhance the nurse's perception of competency in dealing with mentally retarded clients. Similarly, (2) the opportunity for sustained personal contact with a mentally retarded person will enhance that sense of competency. (3) Nurses' self-perception of the competency in dealing with mentally retarded clients can be enhanced by adequate preparation in content categories related to mental retardation. (4) Significantly greater content related to risk factors associated with mental retardation needs to be included in each level of basic nursing education. (5) Etiology is relatively well covered by the three levels of basic nursing education. (6) Nurses also perceived themselves to have had inadequate preparation in skills/techniques appropriate for use with a mentally retarded population. They felt best about the content they received regarding feeding techniques and communication techniques. They felt their preparation was most inadequate in habilitation, behavior modification, stimulation, and interviewing techniques. (7) Relatively
few nurses felt that their basic nursing education had prepared them in content related to support systems as they relate to mental retardation. This was overwhelmingly true for the item "legal supports." (8) More continuing education should be provided in these categories of content with specific reference to its relevance and use in dealing with mentally retarded clients.

Some general conclusions can also be drawn: (1) content related to skills/techniques appropriate for use with a mentally retarded population needs to be more adequately covered by the curricula of the three levels of basic nursing education; (2) content related to support systems as they relate to mental retardation needs to be enhanced in the curricula of all levels of basic nursing education; (3) the role of process [Process is defined here as that dynamic of learning that reinforces the need to know, intrinsic in every human, by enabling him to take facts, ideas, or concepts and incorporate, relate, analyze, synthesize, and generalize them in order to question, anticipate, plan, evaluate, and create.] as it relates to these areas of content in nursing curricula at all levels needs to be evaluated and appropriate modifications made as indicated by such evaluation; (4) systematically repeated continuing education offerings which incorporate content that is appropriate for use in dealing with mentally retarded clients should
be evaluated for process and modifications made as indicated by that evaluation.

Discussion

The frequency distribution of responses to the categories tested under question X (content in mental retardation provided by basic nursing education) indicated that although the nurses' self-perception of competency showed a significant positive relationship to their perception of the adequacy of the sampled content provided by their basic nursing education, they did not perceive that content to have been adequate. Only twenty-one nurses checked the "very well" [prepared] response for any of the eleven items sampled. Only 1.8 percent perceived themselves as being "very well" prepared in content related to risk factors; 29.0 percent perceived themselves to have received "adequate" preparation.

Etiology, which traditionally has been covered to some degree in those nursing courses devoted to the care of children, was the one item with relatively proportionate scores across all four response choices. The conclusion can be drawn that this content, those skills/techniques tested by hypothesis five (stimulation, feeding, habilitation, communication, interviewing, behavior modification), are normally covered to some degree by the curricula of all basic nursing education since critical content for all three levels
is identified both by state boards controlling licensure and by the National League for Nursing which prepares and administers the license examination and is the accrediting body. These skills/techniques may not, however, be presented as specific to mental retardation. They are more likely to be subsumed under more traditional headings; for example, a course in psychiatric nursing will normally include content in the areas of communication and interviewing skills and behavior modification techniques; a course in medical/surgical nursing will include content in re-habilitation skills.

Content related to support systems as they relate to mental retardation, tested by hypothesis six, like that tested by hypothesis five, is normally included to some degree in all nursing curricula. The baccalaureate level does provide much greater emphasis on support systems because of the number of hours devoted to content and clinical experience related to the family and community and the ecosystems that encompass both.

The frequency distribution for question X(b) (adequacy of continuing education offerings in the same categories appropriate to mental retardation) indicates an overwhelmingly negative response across all categories.
Recommendations

The following recommendations are based on the findings of this study, as well as the review of the literature.

It is recommended that this study be replicated in other areas of the United States. Replication would enhance generalization and thereby give a more valid picture of nurses' perception of their competency to deal with mentally retarded clients as measured by the several variables examined in this study.

It is recommended that this study be replicated with a random sample that will allow for parametric statistical measurements of the differences among the levels of basic nursing preparation.

A further recommendation is that a replication be done which addresses these additional variables:

1. Measurement of the relationship between the level of basic nursing education and perception of the adequacy of content appropriate for use with a mentally retarded client provided by the basic nursing preparation;

2. Measurement of the relationship between the year of original licensure and perception of the adequacy of content appropriate for use with mentally retarded clients provided by the basic nursing preparation, controlling for advanced formal education in nursing since the assumption might be made that such an intervening variable would tend to increase the problem of selective recall;
3. Measurement of the differences between the responses of the three groups of nurses to the items subsumed under skills and/or techniques appropriate for use with a mentally retarded population and to the items subsumed under support systems as they relate to mental retardation and the sum of the scores for both categories obtained from each group be statistically tested for differences.

Such data would provide a crude measure on which to begin to predicate some assumptions about process as it relates to the three levels of basic nursing education. To put it another way, such data might provide a faint indication of what, if any, difference there really is in the enslavement to the tyranny of task and technique between the three levels of basic nursing preparation.

It is recommended that creative attempts be made to incorporate clinical experience in mental retardation into the curricula of basic nursing preparation at all three levels, utilizing the myriad community settings which now serve this population throughout the life span. Such clinical experience can help the student to appreciate the commonalities of humanness that this population shares with the total population, to begin to assess the degrees of differentness, to plan and begin to implement intervention strategies, and to begin to understand such entities as advocacy and law and power as legitimate "treatments."
A further recommendation is that the role of continuing education in providing offerings relevant to mental retardation for nurses be evaluated. Two impressions are derived from the data generated by the present study: (1) The overwhelmingly negative response to self-perception of competency based on continuing education may be attributable, at least in part, to the state of the art of professional continuing education in general. Learning experiences for professionals which are based on the principles of adult learning, and are systematic, planned, structured for growth, and allow for practice and reinforcement of learning and evaluation, are relatively rare. (2) Nurses may have difficulty in transferring knowledge and skills from one setting or category to another, i.e., behavior modification is only a technique for changing the behaviors of emotionally disturbed patients; stimulation techniques are only for use with infants; range of motion exercises are something you only do with patients who have had a cerebrovascular accident (stroke), and so on.

If these impressions can be documented as true, it provides both a challenge and an exciting opportunity for continuing education. It reinforces the responsibility of the professional adult educator to insure a quality product that reflects the true needs on an audience that will, if the literature is correct, be increasingly captive. It mandates that process be the emphasis across all content
areas, that instructors facilitate transfer by creative use of educational tools and methods, and that a valid method for followup and follow-through which measures behavior changes over time be integrated into all program evaluation.

It is further recommended that the results of this study be shared with other disciplines and helping professionals serving mentally retarded clients in the hope of stimulating some productive interdisciplinary efforts in research and training. For example, an area that seems to be relatively unexplored is the concept of stimulation. Parents, volunteers, and nursing students learn some stimulation techniques for use with infants. Special educators have evinced an interest in it, some pediatricians advocate it, but much of the concern seems to be confined to techniques and their use with infants and very young children who have displayed gross developmental delays. Research into what seems to be the very real relationship between the functions of the vestibular system of the brain and stimulation in acquisition and retention of physical and psychosocial health (1, 2, 3) needs to be studied as it relates to the total life span. Should results prove fruitful, the challenge then will be to teach instructors and caregivers the process so that they can then take techniques and skills they already have and modify, transfer, and apply them in different settings and to different populations.
Another outcome might be a systematic sharing between special education and nursing education as public school systems increasingly are mandated to begin the education of mentally retarded children at age two. And, as special educators see the need for skills in advocacy, stimulation techniques, etc., the impetus may be present for the development of interdisciplinary courses, team teaching across disciplines, shared student field experiences (student teacher, school nursing), for continuing education and in-service experiences planned, developed, and taught by both disciplines.

It is recommended that the significant relationship found in this study between perceived competency in dealing with a mentally retarded client and sustained contact with a mentally retarded person be subjected to further analysis. Is there a difference in perceived competency, within the group claiming sustained contact, that can be attributed to emotional distance (parent, sibling, other close relative as opposed to neighbor, friend, nurse)? Is perceived competency of the "emotionally close" group affected by the level of acceptance (intellectual, emotional, both) of the mentally retarded relative? If so, what are the relationships, and in what direction? Does sustained personal contact with a mentally retarded person spur either group to try new roles, to risk significant personal involvement in
social/political issues? If there is a difference between
groups, to what can that difference be attributed?

It is recommended that this study be disseminated to
both public and private agencies that serve the mentally
retarded client within the community in the hope that it
will provide an incentive for encouragement and, hopefully
funding of further research and training.

It is further recommended that the shift in workplace
indicated by the demographic data in this sample be checked
for accuracy with a far larger sample, and should the indi-
cated trend prove valid, the implications raised thereby be
reseached.

A final, and philosophical, recommendation: May it be
remembered that the tendency toward research is inborn, a
part of that curiosity, that "need to know" (3, pp. 127-167)
that enables the human infant to grow in an orderly
sequenced manner, to utilize play as a tool for experimen-
tation and learning, for process. May those who seek--and
those who are charged with helping them seek--approach such
inquiry with zest and playfulness and a lively curiosity,
remembering always that statistical tests, specialized lan-
guage, formats for treating and explicating data are but
tools--critical tools indeed by still tools--for

Only where love and need are one,
And the work is play for mortal stakes,
Is the deed ever really done
For Heaven and the future's sakes (5, p. 6).
CHAPTER BIBLIOGRAPHY


APPENDIX

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<th>Number</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
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<td>Cover Letter for Questionnaire</td>
<td>80</td>
</tr>
<tr>
<td>2.</td>
<td>Questionnaire</td>
<td>81</td>
</tr>
</tbody>
</table>
May 16, 1977

Dear

The Continuing Education component of the College of Nursing, The University of Akron, is trying to determine the need for programs and/or courses related to mental retardation. Since we are in the midst of planning for the academic year 1977-78, we really need your input as soon as possible. Would you please take a minute now to fill out the enclosed questionnaire and slip it into the next mail. A stamped, self-addressed envelope is enclosed for your convenience.

Thank you very much.

Sincerely,

Virginia B. Newbern
Director, Continuing Education for Nursing

VBN/mg

Enclosures
College of Nursing
The University of Akron

Instructions:

For the questions below that provide a choice of answers, please mark the box at the right with the number of the appropriate response.

I. Into which category did your basic nursing education fall? [ ]
   1. diploma program
   2. associate degree
   3. baccalaureate degree

II. In which state were you originally registered? [ ][ ]

III. In what year were you originally registered? [ ][ ]

IV. Have you practiced nursing continuously for the past [ ]
   1. 0 - 2 years
   2. 3 - 5 years
   3. 6 - 9 years
   4. 10 years +

V. a. Where are you presently employed? [ ]
   b. Where were you employed? [ ]

      1. hospital (200 + bed)
      2. hospital (less than 200 bed)
      3. nursing home
      4. public health department
      5. school system
      6. physician's office
      7. other (please specify) __________________________

VI. What is your current position title? [ ]
   1. Staff Nurse
   2. Head Nurse
   3. Supervisor
   4. Director of Nurses
   5. In-service Director
   6. Other (please specify) __________________________
VII. How old are you?

1. 20 - 29
2. 30 - 39
3. 40 - 49
4. 50 +

VIII. Have you had sustained personal contact with a mentally retarded person who is (a) your own child; (b) a relative; (c) a member of the family of a close friend; or (d) a client or member of the family of a client?

1. Yes
2. No

IX. Would you please indicate your perception of how well your basic nursing education prepared you clinically in the area of mental retardation by selecting the most appropriate response listed below.

1. no clinical contact
2. minimal contact (e.g., facility tours)
3. all the contact that direct nursing care provides
4. "3" above plus health teaching, referrals, and general advocacy
5. comprehensive clinical contact (i.e., "3" and "4" above plus much interaction with family or caregivers)
X. Listed below are some categories of basic information relevant to working with mentally retarded clients. Would you please indicate your perception of (a) how well your basic nursing education prepared you in these areas; and (b) how well continuing education offerings have prepared you in these areas by using the following code to indicate the most appropriate response.

Not at all = 1
Poorly = 2
Adequately = 3
Very Well = 4

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<th>Categories</th>
<th>Basic Nursing Education</th>
<th>Continuing Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. risk factors</td>
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<tr>
<td>2. etiology</td>
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<tr>
<td>3. stimulation techniques</td>
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<tr>
<td>4. feeding techniques</td>
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<td>5. habilitation techniques</td>
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<tr>
<td>6. communication techniques</td>
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<tr>
<td>7. interviewing techniques</td>
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<tr>
<td>8. behavior modification</td>
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<tr>
<td>9. family supports</td>
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<tr>
<td>10. community supports</td>
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<tr>
<td>11. legal supports</td>
<td>[ ]</td>
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</tr>
</tbody>
</table>
XI. Please indicate how competent you feel today about your knowledge in each of these categories, using the same code:

Not at all = 1
Poorly = 2
Adequately = 3
Very Well = 4

1. risk factors
2. etiology
3. stimulation techniques
4. feeding techniques
5. habilitation techniques
6. communication techniques
7. interviewing techniques
8. behavior modification techniques
9. family supports
10. community supports
11. legal supports
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