

THE EFFECT OF A ONE MONTH ROTATION
IN DEVELOPMENTAL DISABILITIES ON
PEDIATRIC RESIDENTS' ATTITUDES TOWARD
DISABLED PERSONS AND
PROGNOSTICATION ABOUT MENTAL RETARDATION

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ABSTRACT

This study attempted to assess the effect of a one month rotation in developmental disabilities on pediatric residents' attitudes toward disabled persons and prognostic impressions about mental retardation. The subjects were four first year pediatric residents at the University of Kansas Medical Center. An adapted multiple baseline design across subjects was employed using repeated measures of the Attitudes Toward Disabled Persons Scale (ATDP - Form A) and an adapted version of the Prognostication about Mental Retardation Scale (PMRS).

A positive correlation between the two scales was observed. Consistent with reported literature, the subjects of the present study as a group scored lower on both of the measures than comparative norm groups. Test-retest reliability was assessed on both measures during non-treatment segments of the study. For the purposes of the study, the PMRS Scale was a significantly more reliable instrument than the ATDP Scale.

Overall results showed inconsistent and highly individualized changes on both measures. Although composite scores did not yield evidence of significant changes in attitudes, results of item analyses suggest that certain underlying factors were amenable to change as a result of the rotation. The PMRS Scale yielded two main component factors; a simple task factor, which accounted

for most of the positive change in scores, and a complex social factor that tended to remain stable or decrease over time.

It would appear that the observed changes suggest that, as a result of the rotation, residents became more aware of mentally retarded persons' abilities to acquire simple functional skills. Conversely, the residents' perceptions became less optimistic concerning the acquisition of complex living skills and social relationships. This latter finding raises concerns related to the residents' perceptions of the ultimate quality of life for persons with disabilities or mental retardation.

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CHAPTER I

Introduction

There has been a growing concern over the past two decades that training in handicapping conditions for pediatricians and physicians in general is inadequate to address their changing role in meeting the needs of developmentally disabled individuals and their families (Task Force on Pediatric Education, 1978). Although progress has been slow and arduous, systematic attempts to develop new training programs, and to evaluate the effectiveness of current ones, only recently have been undertaken (Richardson & Guralnick, 1980).

A number of recent social and medical developments in the provision of services to handicapped individuals has brought about a re-examination of the role of physicians, especially pediatricians, along with the training provided to meet the challenges of that new role. The first of these historical developments relates to the dramatic changes in the practice of general pediatrics over the past two decades. The problems brought to the pediatrician 25 years ago and the therapeutic agents available to deal with them bear little resemblance to the pediatrician's functioning today. Yesterday's pediatricians spent the bulk of their time attempting to manage bacterial infections and illnesses and their often serious complications. Since the early 1950's the

introduction of antibiotics and immunological agents has revolutionized the practice of pediatric medicine. Today's pediatrician is able to prevent most of the serious complications by early treatment and immunization.

Other medical and social trends that have greatly influenced the practice of pediatrics have been the significant progress made in infant feeding and nutrition, and societal changes in the structure and function of the family. Decreased family size, a new emphasis on the total functioning of the child, issues of altered family styles, working mothers, and multiple caretakers all have influenced the types of concerns brought to the pediatrician.

Thus, because of the combination of the enumerated medical and societal changes, today's primary care pediatricians find themselves involved less and less with acute, life-threatening medical diseases and more with problems of a public and community health nature, chronic handicapping conditions, and concerns about normal/abnormal development, and behavior in the home and preschool setting (Bennett, 1982, p. 308).

In order to be effective, the pediatrician must now become an active advocate for the whole child in the context of family, community, and school and is expected to move out of the traditional isolated medical role into one of cooperative interdisciplinary interaction and communication.

A second development influencing pediatric practice is the dramatic growth of the child development field with

emphasis on early intervention in developmental disorders. Parents' sophistication and expectations in this area have also increased. Across the country community and public school screenings to determine possible development delays are conducted. The availability of early intervention programs that include professionals from varied disciplines have forced pediatricians to deal with interdisciplinary processes and community or school agencies at a very early age in the management of high-risk children.

A third development is the passage and implementation of PL 94-142 (the 1975 Education for All Handicapped Children Act) and the recent movement toward deinstitutionalization. The care and treatment of chronic handicapping conditions was once primarily the concern of practitioners within large state institutions. Until recently, pediatricians in private practice within communities rarely had to deal with the complexities of long term medical management of this population. This new movement has led to an expectation that the pediatrician should function as a team member in the total interdisciplinary provision of services to high-risk and developmentally delayed children. It is well recognized that such collaborative interaction will ultimately improve services to handicapped children and their families. However, this relationship has been very

difficult to achieve (Guralnick, 1982). There have been major differences in style, expectations, attitudes, roles, prognostication, and treatment approaches that affect the provision of services to handicapped children and their families.

The majority of pediatricians, when interested at all, have tended to maintain a narrow diagnostic or medical management role. In addition, there appeared to be only a grudging recognition of other disciplines' contributions to a child's development and even fewer opportunities for meaningful collaboration (Guralnick, 1982, p. 294).

Effective, meaningful collaboration among the pediatrician, other disciplines, and parents of handicapped children is essential and rests on a common understanding and philosophical orientation among the participants in the process of planning for the child's future treatment. Differences in attitudes or orientation can influence many, if not most, aspects of the process. For instance, in the past, much criticism has been leveled at physicians and pediatricians for the manner in which they convey or communicate information to parents (Wolraich, 1982). They have been criticized for being more pessimistic than other professionals in their expectations of the capabilities of mentally retarded persons (Wolraich & Siperstein, 1983), have often not been able to function adequately as members of the interdisciplinary process (Bennett, 1982), and have in

general been exposed to criticism from parents and other professionals on many dimensions related to their sensitivity, communication skills, concern and interest. The search for a common basis for understanding among pediatricians, parents, and other disciplines has led investigators to analyze the underlying differences in attitudes that may account for these deficiencies, the relationship between training and these attitudinal differences, and methods by which changes in attitudes may be accomplished. Indeed, Fred Krause, former executive director of the President's Commission on Mental Retardation, recognized in 1973 that:

The question of attitudes toward the retarded affect almost everything that is done, or planned to be done in the field. It is important to the success of our work, therefore, that we do everything possible to develop favorable attitudes toward the retarded. To do that, we must know how these attitudes are developed and how they are changed (p. 1).

The present study is an attempt to find out what the attitudinal differences may be and to ascertain whether or not training in developmental disabilities has any effect on them. The study was designed as a preliminary project to evaluate a one-month developmental disabilities rotation for first year pediatric residents at the University of Kansas Medical Center in Kansas City, Kansas. To date, no systematic evaluation of the program has been undertaken. The original design of the study was

to evaluate possible changes attributable to the rotation on four outcome measures:

- (a) Residents' attitudes toward disabled persons
- (b) Residents' prognostication about mental retardation
- (c) Resident/parent interaction
- (d) Residents' referral patterns.

During the nine month project, it was found that the last two measures could not be conducted as originally designed because of logistical infeasability in measuring direct parent/resident interaction and difficulties in monitoring referrals. The results reported, therefore, cover in depth the measures of attitude and prognostic changes, with a brief report and suggestions for further improvements in developing and conducting a study of parental interaction and referral patterns.

The training objectives and goals for the developmental disabilities rotation have been adopted in large part from the curriculum design developed by a nationwide consortium of pediatric educators under the direction of Michael Guralnick (1982) at the Nisonger Center in Columbus, Ohio. One major component of the curriculum addresses attitudes of pediatric residents and has been included as one of the goals of the KUMC Developmental Disability training program. Therefore, ascertaining changes in attitudes would be one appropriate criterion for evaluating the effectiveness of the rotation.

To date, evaluation designs of attitude changes directly attributable to training with pediatric residents (or physicians in general) have been scant. Those that exist are in large part subjective reports, case studies, or at best pre/post test designs that do not permit firm conclusions (Wolraich, 1982). Given the inherent difficulties in measuring attitudinal change, the present study attempted to control for other influencing factors by using a multiple baseline across subjects design. By providing follow-up measures, long term effects or maintenance of change over time in attitudes could be assessed.

The outline of this research report is as follows: Chapter II is the review of the literature emphasizing (a) the study of professional attitudes and prognostication about disabled and mentally retarded individuals, and (b) physician training in handicapping conditions. Chapter III presents in detail the design instruments, and procedures used in the study. Chapter IV lists the findings of the study and discusses them, and Chapter V presents general conclusions, implications for the field, limitations of the study, and recommendations for future research.

CHAPTER II

Review of the Literature

There is general agreement among professionals that attitudes toward developmentally disabled or handicapped persons in general are of significance because of their potential influence on the provision of services to these individuals (Guskin, 1977). Professionals are important gatekeepers of information and services and a serious overall curtailment of options occurs when professionals adhere to a stereotyped role for the disabled (Altman, 1981).

Other important reasons for being concerned with attitudes toward disabled individuals were outlined by Altman:

Public stereotypes can create labels which reduce the individuality of the person by producing a narrow range of role expectations which leads to restrictions of behaviors and opportunities. Attitudes tend to contribute to a self-fulfilling prophecy phenomenon that tends to confirm already existing prejudices and discrimination in society. Although attitudes may or may not be good predictors of overt behavior, they may act to determine ways a society defines (and ultimately addresses) a problem or issue (Altman, 1981, p. 322).

In recognition of the important role physicians play in services to developmentally disabled persons, numerous studies have been conducted to assess the influence physicians' attitudes have on referral patterns (Shonkoff, Dworkin, Leviton & Levine, 1979; Adams, 1982). Other

writers have examined attitudes in terms of decisions to treat and when to treat (Shonkoff, 1979; Affleck, 1980), placement decisions (Kelly & Menaloscino, 1976; Wolraich, 1979; Peuschel & Murphy, 1980; Fishler, Koch, Sands & Bills, 1968), and expenditure of resources (Wolraich, 1979).

Various studies have examined physicians' attitudes, training, and demographic characteristics in the context of how these factors might influence parental or family/physician interactions or the delivery of diagnosis or referral advice to parents (Kelly, 1976; Affleck, 1980; Rubin & Rubin, 1980; Werner, Adler, Robinson & Korsch, 1979; Peuschel & Murphy, 1976; McDonald, Carlson, Palmer & Slay, 1982; Adams, 1982). Attitudes of physicians toward developmentally disabled individuals may also influence their interaction with other disciplines (Fishler, et al., 1968; Wolraich & Siperstein, 1983; Cytryn & Milowe, 1966).

It may seem at first that some direct correlation between attitudes of physicians and their effectiveness in any of the above areas has been clearly established. But as noted by Wolraich (1982), objective results about attitudinal change in physicians are scant and do not permit firm conclusions at this time. Most of the assessments of physicians' attitudes to date have measured only their beliefs. Altman (1981), in an extensive review of attitudinal studies toward handicapped individuals,

notes that results are typically inconsistent, both in terms of identifying factors and characteristics that contribute to certain attitudes, or in predicting future behaviors. Wolraich (1982) notes that the attitudes of physicians toward handicapped children is probably not unique to that profession, but more likely reflects societal attitudes toward handicapped children in general. Not only do studies of attitudes toward handicapped persons yield inconsistent results, there is no proven way to effect attitudinal change; in fact, it is difficult and complex to assess attitudes in the first place (Fishbein & Ajzen, 1975).

Various methodological flaws exist across all attitude studies. Most studies rely on administering some form of survey, scale, or questionnaire to subjects. Quite typically, these scales are very indirect measures of what has been inferred as an attitude. Validity is usually established or inferred when the scale has been highly correlated with other scales that are measuring a similar construct. But concurrent validity can only be established when the referral scale is a direct measure, few are. For instance, the most widely known scale, the Attitude Toward Disabled Persons Scale (Yuker, Block & Young, 1966) was developed in this manner. In addition, Altman (1981) and Furnham (1983) point out that most attitude studies (and scales) have restricted samples and

norm groups may be nonrepresentative of the subject to which the scales are administered.

Attitudes are multidimensional and most scales measuring attitude cannot reflect or measure all of the necessary salient dimensions. Antonak (1980) states that deviation of a single attitude score tends to obscure real experimental effects due to insensitivity to the component factors underlying in attitudinal phenomenon (p. 175). In any administration of an attitude measure, numerous response bias factors are usually present. Responses are usually influenced by how a person believes he or she is expected to answer. Quite often the object of the attitude scale (e.g., disabled persons, handicapped persons) is often vague, general, simplistic and ambiguous such that the term itself may evoke stereotyped responses. Quite often scales that purport to measure a positive or negative "attitude" are in actuality measuring something totally different. The ATDP scale, for instance, gives an indication of only how "similar" or "different" from most people a subject perceives disabled people. (Yuker, et al., 1966). But perceived difference may not be the equivalent of non-acceptance. "Clearly, attitudes toward a disabled person's normality may constitute one aspect of overall attitude, but are not synonymous with unacceptance or negative attitudes" (Furnham & Pendred, 1983).

Despite these difficulties in measuring attitudes,

professionals still recognize their potential influence, and continue to explore ways to improve or change them. Of primary concern are attitudes of physicians toward handicapped persons.

Prognostication as a measurement of attitude.

Part of the difficulty in finding a measure of attitudes toward mentally handicapped individuals which can be utilized across professions is that the technology, professional language, and needs of clients differ among various professionals (Wolraich & Siperstein, 1983). One dimension of "attitude" that is common to all professions is the need to prognosticate about a mentally handicapped person's eventual functioning. To date the relationship, if any, between prognostication and attitude has not been identified. Wolraich & Siperstein (1983) postulate that "prognostication is affected by attitudes because many of the aspects of function are either undetermined or subject to differences of opinion." (p. 8) How the interplay between prognostication and attitude may operate is not yet clear, but they may exert similar influences on referral patterns, decisions to treat, provision of services, and family interactions.

The potential importance of prognostication with physicians, specifically pediatricians, has been outlined by Wolraich & Siperstein (1983). For instance, pediatricians may begin their examination with an already

poor prognosis for the child's future functioning, resulting in serious implications for the type of placement options presented to the family (e.g., home or institutional). Based on this prognosis parents may adjust their expectations of the child and make decisions based on the pediatrician's prognosis. Parents rely very heavily on their physician's advice in future planning for their children. Indeed, a study conducted by Peuschel & Murphy (1976) found that 78% of parents of Down's Syndrome children in Massachusetts relied almost exclusively on the professional advice in planning for their child. Parents of handicapped children typically receive advice and services from more than one professional. Since future planning for the child depends to a large extent on the predicted future level of the child's functioning, conflicting predictions among professionals may cause confusion and stress within the family (Wolraich & Siperstein, 1983). Likewise, over the past decade, pediatricians have become more involved in working as members of interdisciplinary or multidisciplinary teams in providing services to handicapped children (Bennett, 1982). The pediatrician's prognostication may either be in direct conflict with or may heavily influence other team members, creating a breakdown in the entire process. Lipton & Svarstad (1977) found that physicians' communication skills in interviews with parents were

influenced by their certainty of prognosis. Physicians who had a clear prognosis for the future of the child tended to be more frank, informative, and at ease in speaking with parents.

Factors influencing attitudes.

Although past studies by no means resulted in consistent findings, a number of factors contributing to positive or negative attitudes toward mentally retarded or handicapped persons have been postulated. It generally has been found that attitude scores of medical/rehabilitation personnel (including prognostication measures) have been lower than scores on attitude measures for other professionals and the general public. (Wolraich & Siperstein, 1983; Yunker, et al., 1966; Kelly & Menaloscino, 1976; Jacobs, 1969). In general, the developers of the ATDP have concluded that the "greater degree of contact with a particular group, the lower amount of prejudice toward that group... contact generally results in increased positive attitudes." (Yunker, et al., 1966, p. 82). A major exception to this postulation was found to be attitudes of medical/rehabilitation personnel in regard to contact. In general, increased contact by medical professionals with disabled people tends to decrease scores on attitude measures.

A number of hypotheses have been forthcoming to explain why this may be so. Yunker, et al., (1966), Altman

(1981) and Furnham & Pendred (1983) have examined the type of contact as opposed to the quantity of contact as more important variables in determining attitude, especially with medical/rehabilitation personnel. Furnham & Pendred (1983) found that varied contact with both physically and mentally disabled individuals in various settings correlated with higher attitude scores. The amount of contact was not significantly related.

Yuker, et al., (1966) concluded that it appears that contact in an employment setting has a more positive effect on attitudes toward disabled individuals than contact in a medical setting. It appears that contact in a medical setting has less positive effects on attitudes than contact in either employment, social, or personal settings. These differences may exist in part by the different types of information provided in the settings. Contact in an employment or social setting will probably tend to provide information regarding capabilities, strengths, and adequacies of the person. Contact in a medical or rehabilitation setting may provide primarily information about the real limitations of the disabled person.

The non-professional contact factor may be important in explaining a tendency toward negative attitude scores of physicians; for instance, Wolraich (1980) surveyed pediatric practitioners and found that 55% of the

respondents indicated that they had no nonprofessional contact with handicapped individuals outside of the medical setting.

Werner, et al., (1979) conducted an attitudinal study of pediatric interns and found that the high level of stress and lack of coping mechanisms on the part of the interns tended to significantly lower their attitudes about certain groups of patients, specifically lower socio-economic status (SES) patients. These patients and families had poorer communication skills, provided poorer care, and tended to be noncompliant in following through on treatment regimens and physician's advice. This group also included a greater concentration of families with developmentally delayed children. Other possible factors influencing attitudes include visibility of disability, type of disability, sex of respondent and past experiences (Furnham & Pendred, 1983).

Stedman (1966) postulated that the "degree of curability" or success in treatment may be a significant factor that may influence physicians' attitude responses to certain types of disabilities (specifically, mental retardation).

In general, Altman (1981) and Yuker (1966) note that the sex of the respondent is a factor that influences attitude scores, with females tending to score higher than males. The fact that, until recently, most physicians

were males, could account for the general trend toward lower scores for physicians.

Studies of Attitudes toward disabled persons in general.

Furnham & Pendred (1983) conducted a study of the attitudes of 96 subjects in England using the ATDP Form O to assess any change over time of, and to identify specific factors which correlated with high or low scores. The mean score for the norm groups in 1960 was 74.11; the 1983 study found a mean score of 72.09. The subjects were 48 post-graduates and 48 members of the general public divided evenly between males and females. Surprisingly, they found that little change in attitudes has taken place in the last 20 years. In accordance with previous studies in the literature, they found that mentally handicapped individuals were viewed more negatively than physically handicapped persons. The visibility of the disability made little difference, and although they found that varied contact with both mentally and physically disabled persons did correlate highly with higher scores, the authors offer a strong caution. They speculate that an initial positive attitude could stimulate more contact and not vice-versa. This particular study found that those who had some contact with disabled persons held more unfavorable attitudes than those who had no contact.

Attitude studies of professionals.

Wolraich & Siperstein (1983) conducted a study to

compare the "attitudes" of various professionals who serve mentally disabled children by assessing their prognostic impressions about the mental abilities required for various functions using the PMRS scale. Six groups of professionals in Iowa were surveyed. The groups included pediatric practitioners, (N=34); developmental pediatricians, (N=21); Allied Health Professionals, (N=29); social workers, (N=13); psychologists (N=38), and special educators, (N=33). Of all the groups, pediatricians as a group had the lowest scores (\bar{X} =138.79), reflecting the least optimistic attitudes. The next lowest group was developmental pediatricians (\bar{X} =150.43). Special educators (\bar{X} =162.91) and psychologists (159.07) scored the highest and reflected the most favorable prognostication of mental level needed to acquire certain functional skills. The authors noted that one possible reason for the low scores of pediatricians was that they typically have little or no exposure to mental retardation. In general those professionals who did receive training in mental retardation had higher scores than those who did not. In concluding, the authors state that "our preliminary findings suggest that, in general, pediatric practitioners respond less optimistically than educators and psychologists toward the mentally retarded child." (p. 11).

A similar study of pediatric residents was conducted

by Wolraich in 1979. The ATDP scale (Form 0) was administered to 16 pediatric residents prior to and after a one month rotation in developmental disabilities at the University of Iowa. After the pre-test, the subjects were divided into two groups: those that scored highest and those that scored lowest on the ATDP. An interesting shift took place in the post test scores: change was insignificant in the lower scoring group, however the higher scoring group (most positive) experienced a significant negative change:

		Pre	Post	<u>Change</u>	
N=8	Upper 1/2	84.8	73.1	-11.7	p1 .02
N=8	Lower 1/2	67.4	71.3	+3.9	<u>NS</u> (p. 134)

After the rotation, those that viewed disabled persons most positively began viewing them as more different. "If we use the developer's interpretation of the test results, it would appear that we had a negative attitudinal impact on the residents...a second possible interpretation of the test scores is that residents' perceptions of disabled persons had become more reality based at the end of the rotation." (p. 134) A third explanation not offered by the authors could simply be a regression toward the mean, or an effect of repeated measures. Another interesting finding was that when the ATDP scores were correlated with acquisition of information it was found that those with the lowest ATDP

scores obtained higher knowledge scores than those with higher ATDP scores and the lower ATDP scores had initially more knowledge than those with higher scores.

Werner, et al., (1979) conducted a study including attitude changes of pediatric interns at the U.S.C. Children's Hospital in Los Angeles. The study was designed to measure change in the following variables: (a) attitudes toward patients; (b) attitudes toward associates; (c) stress; (d) coping mechanisms; (e) amount of learning; (f) confidence; (g) quality of life; and (h) general feelings about the internship. The study found that interns found the experience to be extremely stressful and less satisfying than they had anticipated. They were often unable to cope adaptively with the stresses encountered. There were indications of worsening attitudes over time toward certain aspects of patient care. Videotaped vignettes of interpersonal sensitivity showed no change over the year and videotaped visits with clinic patients during the year showed no improvement in interpersonal communication skills or attention to psychosocial issues. Attitudes toward lower SES patients worsened over the year.

Interns seldom introduced the family visit with social talk, sometimes failed to greet the family, say farewell, and did not make the mother physically comfortable. Interns seemed patient and concerned, but were often insensitive to aspects of the situation such as emotions expressed by the mother or the presence of family members. Although rarely

critical, interns were rarely empathetic or supportive. Interns paid little attention to psychosocial issues, rarely discussing topics such as behavior and home environments. (Werner, et al., 1979, p. 496)

Highly rated interns on the videotaped vignettes of clinical interviews tended to be those that experienced less stress. Regarding attitudes toward patients, questionnaires showed that they started out enthusiastic and over time became bitter and disillusioned. They commented that they began to dislike caring for outpatients and families belonging to certain ethnic groups who are perceived as noncompliant and providing poor care for their children. (p. 497). The one bright spot in the entire study was that the interns felt that their confidence and competence had increased over time.

Although this study clearly shows a correlation between the level of stress and attitudes in general, further clarification is needed to determine to what extent a cause and effect relationship may exist. It also bears strong implications for medical training and residency training in general in terms of effecting attitudinal change. This stress level may also serve to partially explain why physicians tend to score lower on measures such as the ATDP and PMRS compared to other professionals.

Felton (1975) conducted one of the first studies of change in attitudes of interdisciplinary allied health

paraprofessionals toward disabled persons. The subjects were 7 women who were receiving a one year clinical/interdisciplinary training program in developmental disabilities at the University Affiliated Program at Children's Hospital in Los Angeles. Extensive, direct contact clinical experience with multi handicapped and disabled children and their families provided approximately 20 hours per week of exposure in various field settings. The subjects were administered the ATDP (Form 0) prior to enrollment in the program and again 13 months later at the end of the program. The mean pre-test score was 93 and the mean post-test score was 106. The 13 point difference (toward more "positive" attitudes) was significant ($t=2.84$, $p<.02$).

Fishler, et al., (1968) conducted a study of attitudes toward mental retardation of 36 fourth year medical students prior to and after a rotation through the Child Development Clinic at Children's Hospital in Los Angeles. The study examined five factors: how developmental problems were ranked, understanding of professional roles of other disciplines, prior experience with mental retardation, education in mental retardation, and advice to parents for placement. On a pre/post questionnaire, there was a change in attitudes favoring home placement, but none of the shifts were statistically significant.

	Pre	Post	
Institution	46	22.2	
Home Care	41.4	61.5	
Foster Care	5.8	7.0	
Other	6.8	9.3	(p. 66)

An interesting shift of attitude away from early institutionalization of mentally retarded children occurred during the three week assignment to the clinic. But the authors note that there was little doubt that the attitudes of the students had been influenced by the staff's philosophy regarding the desirability of early home placement whenever feasible.

Relationship Between Attitudes and Referral and Placement

Advice given by physicians to parents about placement of a child, and referrals to other services may be highly influenced by attitudes of physicians. Quite likely, knowledge and awareness of service options on the part of the physician is also of prime importance in these decisions.

Kelly & Menaloscino (1975) conducted a study of physician's attitudes toward and awareness of options for mentally retarded children. The study confirmed the general feeling of many parents and professionals that physicians fared rather poorly on both dimensions. Questionnaires were sent to 37 general practitioners, 23 pediatricians in the area, and 175 parents of mentally retarded children that asked for specific information on referral patterns, knowledge of community resources,

placement recommendations and general parent/physician interaction. Of all the respondents physicians were the least aware or familiar with the two main community agencies that served mentally retarded individuals. These were also the least recommended as service or placement options. In comparing responses of parents with physicians, many of the results were extremely contradictory. For instance, 81% of the physicians indicated that they at some point had referred families to the Visiting Nurse's Association for help. Only 3% of the parents indicated that their physician had ever made such referral. Over 50% of the parents said they had never been referred to any community agency by a physician. Likewise, 71% of the physicians said that they gave material about mental retardation to some or all of the parents and only 10% of the parents indicated that they had received such material from their physicians. Regarding placement recommendation, 86% of the parents indicated that they had been advised to institutionalize their mentally retarded children within one year after the diagnosis was made. At the time the article was published, none of the children had been institutionalized despite the physicians' advice.

In a more recent survey of physicians conducted in Iowa, Adams (1982) reports significant changes in physicians' communication patterns when giving advice to

parents of profoundly retarded infants. Adams surveyed 90 physicians in requesting what advice they would give regarding treatment, referral, and placement of a particular handicapped child. The variables studied included a) treatment and service advice, b) socioeconomic level of parents, c) level of retardation. No significant differences occurred as a function of the SES level of parents. However, level of retardation produced significant changes in responses, as did years of practice.

Physicians with less than ten years of practice were more likely to suggest that the parents work with the child in the home. Physicians with more than ten years of experience were much more likely to suggest that parents institutionalize the child. Younger physicians (less than 10 years of practice) were also more likely to suggest that parents seek the services of a local school district. Adams also noted a dramatic improvement in referrals to community mental retardation services. In the Kelly and Menaloscino study (1975) 40% of the physicians surveyed indicated that they referred parents to community mental retardation services. Adams found that 89.2% of the physicians surveyed indicated referrals to community services.

Although the increase in referrals to local mental retardation services is encouraging, Adams notes that

there is still a considerable percentage of physicians who advise parents to wait until the child is older before making any decision.

Adams also assessed the possible correlation between physician training in mental retardation and differences in referral advice. No statistically significant difference was found between physicians who had prior training in mental retardation and those who did not.

Physician's attitudes in relationship to their interaction with parents

In the Kelly & Menaloscino (1975) study, the majority of the parents who responded to the survey (57%) indicated that they were dissatisfied with their doctors' attitude, and many indicated a desire for more information on care and treatment of their child. Results of the questionnaire confirmed that, in general, parents were more dissatisfied with physicians' attitudes than the medical treatment given.

Although many faults of the study were apparent (poor response rate, biased responses, lack of validity or reliability of questionnaire), it did raise some very serious issues and spearheaded an already growing concern on the part of medical and allied professional training programs that changes needed to be made in physician's awareness, knowledge, and attitudes about mental retardation.

The factors affecting physician/parent communication

can be organized into three categories: (a) the physicians knowledge about children with handicaps, (b) the physicians attitudes toward handicapped children, and (c) the physician's skill in communicating with parents. (Wolraich, 1982, p. 324) All three of these elements are crucial to how well a physician will be able to communicate information to parents. They are also interrelated so that deficiencies in one of the areas may affect the physician's abilities in other areas. Closely related to physicians' knowledge about handicapping conditions is their attitude toward developmentally disabled children. A past history of misinformation about these children has contributed to negative attitudes.

In his account of difficulties encountered by parents of retarded children, Jacobs (1969) found that many of the obstacles experienced by families arose partly or largely from negative or pessimistic attitudes toward mental retardation harbored by physicians and educators. Jacobs points out that the general public often regards the family doctor as the most reliable source for parents of a retarded child. Yet, most of the parents interviewed in his study found their interactions with the physician as unsatisfactory. The physician was seen as being of little help to the parents in enabling them to cope with the retardation of their child, was often not as thoroughly communicative as he might have been in diagnosis and

prognosis for the child, and offered little guidance to other sources of help and often little hope for the child's future development. Many of the physicians themselves seemed to have such a negative attitude toward mental retardation that they could never help the families develop a positive one.

In a longitudinal study conducted by Peuschel and Murphy (1976), parents of Down's Syndrome children ages 1-18 were surveyed regarding physician/parent interactions at the time of the diagnosis. The study noted a significant decrease over time in referrals to institutions, nearly half of the respondents indicated that the initial diagnosis was presented in a sympathetic manner, however, 50% of the respondents could not say that. A full 25% of the parents indicated that the manner of the physician at the time of diagnosis was abrupt and blunt. Fifty percent of the parents responded that they were satisfied with how they were informed and treated by their child's physician, but 50% expressed dissatisfaction.

Rubin & Rubin (1980) conducted interviews with 25 mothers of mentally retarded children regarding satisfaction or dissatisfaction with the first discussion of their child's diagnosis. Twelve of the parents were satisfied and thirteen were dissatisfied. The factors that significantly influenced whether parents were

satisfied or dissatisfied were how sympathetic (attitude, sensitivity) the physician was and how positive the physician was.

	Parents Satisfied	Parents Dissatisfied
Physician:		
Sympathetic	12	3
Nonsympathetic	0	10
Positive attitude	12	6
Negative attitude	0	7

The results were statistically significant at the .05 level, and indicated clearly that those parents who were satisfied were those who perceived their physicians as being sympathetic and having a positive attitude toward their child.

Rubin & Rubin (1980) also found that whether or not parents felt satisfied with their physician was highly correlated with three other factors: whether or not they return to the same physician; whether or not they follow the physician's advice; and whether or not parents engage in "shopping behavior."

It is of utmost importance to physicians that parents follow through on their advice on caring for their children. It was previously noted in the study conducted by Werner, et al., (1979) that a primary factor that contributed to pediatric interns' negative attitudes toward certain patients was the likelihood they would not follow through on advice. The interns tended to perceive

those patients that seldom followed through negatively. It is interesting to note that the physician's attitude in actuality may be the determining factor in whether or not families or parents do follow through with physician's advice.

The previous studies indicate a clear and valid concern among parents and professionals regarding the possible negative influences on treatment of mentally retarded and handicapped children brought about by a seeming lack of awareness of handicapping conditions and pessimistic attitudes and insensitivity on the part of the physicians. In response to these concerns medical education and training programs have begun to study and examine possible deficiencies in their training programs to alleviate some of these problems.

But the relationship between training experiences and sensitivity, attitudes and knowledge of handicapping conditions is not clear.

Physician and Pediatric Education

Individuals concerned with the welfare of handicapped children, especially parents, frequently point out that the training, awareness, sensitivity, and skills of pediatricians are often not adequate to meet effectively the critical and unique needs of handicapped children and their families (Richardson, et al., 1978).

Typically, training in mental retardation or

developmental disabilities for physicians has been informal in nature of a short duration, has provided an affiliation with other programs, and has offered little in the way of systematic educational experiences. (Guralnick & Kutner, 1982).

One of the initial attempts to develop an interdisciplinary training component in mental retardation for pediatric residents was reported by Cytryn and Milowe (1966). The goals of the program were to provide pediatric and psychiatric residents with interdisciplinary experiences within an institution for the retarded in Washington, D.C., specifically to develop an exchange of ideas in information between professional groups and to develop a better understanding of families. This resulted in a "growing mutual respect for the role of each respective group and led to a recognition of the importance of interdisciplinary cooperation." (p. 3) Through participation in selected supervised parent interviews, the residents gained knowledge of the whole range of problems inherent in dealing with parents of mentally retarded persons. The authors report that greater understanding led to replacement of the early harsh attitudes towards the parents seemingly erratic and often irrational ways by an attitude of compassion and tolerance.

Numerous changes were made throughout the development

of the program. For instance, many of the pediatric residents remained "apathetic, unresponsive, and reluctant to permit a closer relationship with their patients." (p. 4) In response to these attitudes, the emphasis on treatment of individual children was omitted and replaced by more involvement in diagnosis and management, chiefly in staff conferences and interpretation meetings with parents. Although the program was quite successful in enhancing psychiatric resident treatment of children at the institution, "on the debit side...the treatment of children by pediatric residents proved impractical and had to be replaced by areas of greater significance and interest to the future pediatricians." (p. 5) The authors also noted that communication between various medical subspecialties and the non-medical staff presented a serious problem and required constant vigilance on the part of people in charge of the program.

In a similar report on the development of a pediatric resident rotation in mental retardation, Stedman (1966) reported on a program developed at Duke University Medical Center. In his report, Stedman outlined the goals and design of the program and the 3 month rotation. No information regarding evaluation of the program's effectiveness was reported. However, a discussion about the one main obstacle in the program indicated that:

There are headwinds against the program.
The adequate reception in training and mental

retardation depends upon the maturity of the trainee. All graduate medical students are not mature. There are varieties of resistance. The rotating pediatric resident is more likely to take his vacation during his stint with the pediatric-psychiatry service. The physician in training must be met on his own ground, namely supervision of clinical material with which he can deal with and with which he can experience a successful diagnosis and management outcome. (p. 7)

Mental retardation and developmental disabilities in general do not present the ease of diagnosis and cure that other clinical problems do. Stedman postulates that this fact accounts for the resistance engendered in the development of the training program.

Oster (1974) conducted a very thorough study of medical training provided in the U.S. and Europe in handicapping conditions in order to determine the nature of educational experiences. His findings of the state of the art were rather pessimistic.

It may be stated that apparently few hours are employed to deal with mental retardation and handicapping conditions around the world... one thing that stands out very clearly, that communication between disciplines shows catastrophic deficiencies (Oster, 1974, p. 7).

Most physicians felt that the teaching they had received concerning mental retardation was scattered, haphazard, and without coordination and planning. In an earlier study, Fishler, et al., (1968) conducted a study of 36 fourth year medical students assessing adequacy and quality of training they had received in mental retardation at the University of Southern California

Medical School. Despite the fact that all of the students had taken courses in child development, 80.6% of the students responded that they had not been exposed to instruction in mental retardation.

Richardson, et al., (1978) note that these findings are not surprising when one notes that following medical school, the majority of three year residency programs for pediatricians are directed to the care of hospitalized patients. Moreover, even the time allotted to ambulatory care is mostly concerned with the management of a single acute illness in a busy clinic or emergency rooms. Despite efforts to provide more adequate training reports during the late 1970's indicate that significant progress remained to be achieved. (Pearson, 1976). Efforts to expose medical students to community services for children are few, but even this fails to provide the residents with a perspective of what their developmental needs are outside of the hospital or clinic. (Richardson, 1978). These concerns led the Task Force on Pediatrics (1978) to conduct a two year study of pediatric training in handicapping conditions. Over 7,000 pediatricians were surveyed and a number of findings reported indicated that:

- 1) There is an increasing involvement of pediatricians in virtually all aspects of child development.
- 2) 54% of the pediatricians reported insufficient residency training in psychological/social and behavioral problems associated with the conditions.

- 3) 40.4% reported insufficient training in chronic cerebral dysfunction.
- 4) 53% rated their competence low in genetic counseling; 44.5% reported insufficient training in that area.
- 5) 40.8% received insufficient training in interviewing skills.
- 6) 37% reported insufficiencies in their training in learning disabilities and neurology.

The report also noted that "Over half of the respondents felt they had been insufficiently prepared for involvement in child advocacy (e.g., problems of minority groups, child abuse and neglect, and children with mental retardation); over 60% felt inadequately prepared to deal with school health problems; and almost 75% felt insufficiently trained in community programs relating to child health and welfare such as institutions, nursery schools, juvenile courts, and programs for exceptional children." (p. 23-24)

The Task Force also suggested future directions for pediatric education in addressing some of these deficiencies. More emphasis should be placed on the multidisciplinary role of the physician or pediatrician and skills should be developed in coordinating with other disciplines. Pediatricians should learn to help parents understand the disability and anticipate the family stresses and problems and pediatricians must learn to assist families in marshalling resources (Guralnick,

Richardson, Kutner, 1982, p. 13).

Other studies conducted since 1978 include one conducted in New England by Shonkoff, et al., (1979). In studying attitudes of physicians, referral patterns, and current clinical approaches to developmental disabilities, four-fifths of the physicians interviewed viewed their formal training in developmental disabilities as inadequate.

More recently a random telephone survey of physicians in Texas (McDonald, et al., 1983) measured physicians' knowledge of PL 94-142 and special education for handicapped children. Of 312 physicians identified, 69 were surveyed. Of those 64% were aware of PL 94-142. Only 1/3 had received any training in handicapping conditions, 61% had received minimal or no training in mental retardation, 64% had minimal or no training in emotional disturbance, and 54% had no training whatsoever in learning disabilities. Although 61% of the practitioners were interested in receiving more information, not one was interested in receiving more training.

In a 1983 survey conducted by the State Department of Special Education in Kansas, (Health/Education Planning Committee) questionnaires regarding information and training in handicapped children and special education were mailed to pediatricians and family practitioners in the state. Of the 164 responses 63% indicated that they

had never worked with a special educator with regard to a handicapped child; 56% were not interested in receiving any training in dealing with handicapped children. Of those that were interested in receiving more training 76% indicated they would be willing to spend less than 10 hours in training. However, of the total, 62% did indicate they would like more information.

Levine (1980) outlined specific problems in medical education in general that may contribute to some of the poor results in training surveys. "The curriculum in most training programs in medicine is characterized by serendipity and idiosyncrasy. The learner spends an arbitrary amount of time in a training setting, hoping through Brownian movement, to encounter the common enough of the uncommon problems in the area to be a successful practitioner. But this encounter is not really random because clinical problems are already skewed by interests of teachers and the reputation of the training center." (p. 67) Inevitably this approach results in a striking lack of correspondence between the learning experience and actual practice. Randomness and lack of relevance are not the only problems with physician education. Traditionally, the emphasis is on acquisition of factual information--forgotten and easily outdated. Many medical educators feel that other strengths should be developed in learners such as decision making skills, logical

reasoning, reliability, thoroughness, and appropriate attitudes toward patient care. Levine suggests that activities be sequentially related in order of difficulty and objectives defined clearly.

This rather bleak commentary on the state of pediatric education is not necessarily an accurate picture of what is currently taking place universally in developmental disability training programs. These reports along with others have fashioned a new impetus in developing new structures, competency based training programs and residency training programs across the country. The task has not been easy. Vaughn (1982) notes that in 1972 the American Board of Pediatrics undertook a study to identify all the competencies that would be appropriate for a complete pediatric training program.

After two years of compiling items that were believed to be essential for the armamentarium of the physician, approximately one quarter million items had been collected, and these represented approximately half of the total that would be required. It can be calculated that if a medical student were to incorporate all the items at a rate of one item every 2 minutes, 12 hours a day, 7 days a week, 48 weeks a year, for 4 years, the student would still fail by more than 6 weeks to complete the assigned task (p. 77).

This is the nature of medical education and an indication of the vast array of skills of which society expects physicians to have total command. Nevertheless, a number of excellent training programs have been designed recently. Levine, Delaney, Bartrum, Olmstead, and Copps;

Gottlieb & Zinkus; Wolraich; Bennett; Capute & Arcado (1980) have all organized, coordinated, and developed different types of systematic training programs emphasizing numerous competencies and areas of skill development for pediatric trainees. Some are designed as developmental disability rotations, clerkships, courses, or residency/fellowship programs. More emphasis is being placed on developing designs to evaluate existing training programs. (Richardson, et al., 1980). Although subjective evaluation of training experiences has until recently been the norm, Richardson describes other more quantifiable, systematic, objective measurements that are currently being used to determine the effectiveness of pediatric training. He proposes four domains of measurement: measurements of knowledge and information; checklists or measurements of attitudes; direct observation of interpersonal skills; and patient management problems for the assessment of clinical judgement. In concluding the report on pediatric training evaluation, Richardson, notes that:

The press by virtually every concerned professional and consumer group for increased systematic efforts in the area of pediatric education and the needs of exceptional children, as well as consistent themes that have emerged, attest to the significance of this issue...[S]hould such a coordinated national effort be forthcoming, it will mark another important historical event in professional training related to exceptional children and their families--an area that has

previously been at the periphery of many medical and nonmedical specialities. (p. 198)

Summary of Review of Literature.

The possibility that physicians' attitudes can influence their interactions with parents, referral patterns, decisions to treat, or placement decisions, and interactions in the interdisciplinary processes has been explored at length. Although some correlations have been recognized, there remain few clues as to what the source of attitudinal differences may be. There are hints in the literature that these differences may be due to inadequate training, little non-professional contact with handicapped persons, high levels of stress, avoidance of conditions that are clearly incurable and untreatable, and an inherent focus on the limitations of handicapped individuals as opposed to their strengths and capabilities. But, these correlations are by no means exact and clear and remain only speculation at this point.

What is lacking even more, are clear, definable, ways of bringing about attitudinal change. Reports at attempts to bring about this change through training have been inconsistent. Those that have reported change have serious measurement and design flaws. By and large, those that have studied change in a more systematic manner have usually shown inconclusive or negative results. The major problem in such studies is that the concept of "attitudes" is multidimensional and almost impossible to measure

accurately. Perhaps, in the future, studies will begin to focus not so much on underlying "attitudes" but the measurable, quantifiable translation of them into observable behaviors that can be changed.

CHAPTER III

Method

The primary purpose of this study was to assess the effect of a one month rotation in developmental disabilities on pediatric residents' attitudes toward disabled persons and prognostic impressions of mental retardation. This information is valuable in determining the effectiveness of the training rotation in achieving one major goal area outlined in the program: promoting realistic, positive attitudes toward developmentally disabled persons.

Subjects

The subjects for the study were an incidental sample of five first-year pediatric residents at the University of Kansas Medical Center in Kansas City, Kansas. One subject received only the initial administration of the attitude measures. The remaining four were participants of this group in the multiple-baseline across subjects design. There were three females, and one male. The study began in October, 1983 and continued until July of 1984.

Instruments

Two instruments were used in assessing the attitudes of the pediatric residents, the Attitudes Toward Disabled Persons (Form A) scale (Yuker & Block, 1966) and the Prognostication about Mental Retardation Scale (Wolraich &

Siperstein, 1982). Both measures were administered individually to residents. Instructions for both (see Appendix C) were read prior to each administration to eliminate any possible bias or influence created by different or inconsistent instructions.

The two scales were chosen to answer the specific questions of how "differently" do pediatric residents view disabled persons in general and what are the residents' perceptions and predictions of future abilities of patients with mental retardation.

Attitudes Toward Disabled Persons Scale

The ATDP Scale (Form A) presents a list of 30 statements on a Likert Scale (3 to -3) to which the respondent indicates level of agreement or disagreement with the item. A score that is high relative to other scores would indicate that the respondent perceives disabled persons as similar to other non-disabled persons. The test has received a substantial amount of study regarding reliability, validity, fakeability, and effects of social desirability and response set. It is easily administered and scored, normative data are available, and previous studies using this instrument with the same population have been conducted (Wolraich, 1979).

Reliability

Eight studies estimating the stability of the ATDP Form O were reported by the authors (Yuker & Block, 1966,

1981). These estimates range from .66 to .89 with a median of .73. A single estimate was reported for form A = .78. Split-half reliability coefficients range from .73 to .89 for Form A. Parallel forms of the instrument have been used to determine "stability-equivalence" reliability. Five studies using the ATDP (different forms) report that the reliability coefficient between forms range from .41 to .83 with a median of .74 (p. 34, 118-122).

Validity

Evidence of the validity on the ATDP is based largely on construct validity. This technique seeks to confirm a series of predictions pertaining to the relationship of the variable being measured to other variables. (Yuker, Block & Campbell, 1966.) The developers present four chapters discussing the relationship of the ATDP to other measures in assessing its construct validity. (See Yuker & Block, 1966, pages 44-93).

Investigations of the fakeability, or the extent to which the respondent's test-taking attitudes influence the test results, suggest that the ATDP is relatively non-fakeable since no significant differences were found between the faked vs. non-faked administrations of the test. It has also been found that neither social desirability nor acquiescence accounts for significant portions of variances in the ATDP (Yuker & Block, 1966, p. 43).

Normative Data

The ATDP Form O was normed by combining scores obtained by the developers' Human Resources with scores obtained by other subsequent studies using the ATDP. Form A was normed by Human Resources Institute, however, the developers strongly suggest that each investigator develop his or her own norms for the particular group with which he or she is working. (p. 30) The instrument's normative data are divided by sex and between disabled and non disabled populations. The mean for Form A from the normative sample of non disabled individuals is as follows:

	<u>X</u>	S.D.	N
Male	106.65	20.73	337
Female	114.18	20.48	405

Although these norms were derived at the time of test development, Furnham and Pendred (1984) suggest that the mean has changed little over the last 20 years.

Prognostication About Mental Retardation Scale (PMRS)

The PMRS scale was developed by Wolraich & Siperstein (1983) to assess professionals' prognostic impressions about the adult level of intelligence needed to perform specified functional tasks. The original PMRS consists of 30 statements of functional tasks in areas of residential skills, social interaction, and independence skills. Respondents are asked to choose the "lowest level of adult intelligence that you feel an individual must possess in

order to perform each of these functions." A sample includes items such as

...drinks from a cup

...is independent in dressing skills

...lives unsupervised in an apartment

Tasks were selected to be generally representative of the full range of required intelligence, with emphasis placed on functional skills, social skills and complex skills. Because many of the tasks have no defined norms associated with intelligence levels there are no defined correct responses. "It is assumed that the respondents' choices would be affected by their degree of optimism about how well mentally retarded adults function." (Wolraich & Siperstein, 1983, p. 983) In the original version of the PMRS, respondents were requested to choose one of 8 levels of intelligence for each of the 30 tasks: (a) normal, (b) borderline, (c) high range of mild mental retardation, (d) low range of mild mental retardation, (e) high range of moderate mental retardation, (f) low range of moderate mental retardation, (g) severe mental retardation, and (h) profound mental retardation.

In a subsequent revision of the PMRS the developers included the same functional tasks, but changed the format and revised the above specified levels of intelligence to choose from. In order to simplify the instrument, the format was changed from giving thirty-three statements

once and having respondents elect one of the eight levels of intelligence to listing the functional tasks three times, each under one of three headings of levels of intelligence. These three levels of intelligence were mild mental retardation, moderate mental retardation and severe mental retardation.

The PMRS scale used in the present study was an adaptation of both versions. The same functional tasks were used, but only presented once--as in the original version. Complex items in independent in toileting and dressing were broken down into two discrete items. Respondents then were asked to select one of five levels of intelligence which were specified as follows:

Normal

Mild mental retardation

Moderate mental retardation

Severe mental retardation

Profound mental retardation

These categories were much more consistent with levels commonly recognized by most professionals, and alleviated the cumbersome nature of having respondents make very fine distinctions between low and high ranges of certain levels of intelligence. It was also decided that as in the second version of the PMRS, dropping out the ranges of "normal" and "profound" would not give an accurate and discriminative picture of residents' full range of

expectations. The version utilized also presented the list of statements once, in order to avoid making the assessment too time consuming and repetitive. The scoring mechanism remained the same and can be converted easily to percentiles for comparison purposes with the original version of the PMRS. Scoring on the PMRS on the original version was from a low of 30 (all tasks could only be accomplished by persons with normal intelligence) to a high (most optimistic) score of 240 (all tasks could be performed by persons with profound mental retardation). The high and low range of the adapted instrument used in the present study was from a low of 36 to a high of 180. Conversion from the scores on the revised scale can be done by converting scores to raw percentages to establish estimated equivalence based on the PMRS.

Reliability and Validity

The PMRS developed in 1982 and the first study using the instrument was reported in February 1983. The authors state that no formal attempt at validating the scale was made at that time. The authors are currently undergoing a nationwide study using the instrument to obtain further information of reliability and validity. Results are not yet complete in that study. The first normative sample for the instrument consisted of professionals in six categories: pediatric practitioners, developmental pediatricians, allied health professionals, social

workers, psychologists, and special educators drawn from the Iowa Academy of Pediatricians, the Department of Special Education of the University of Iowa and from seven University Affiliated Programs (UAP's), 2 from the West Coast, 2 from the East Coast, and 3 from the Midwest. The total sample of professionals was 168 (see page 20 for breakdown).

Means and standard deviations for the sample are reported as:

	\bar{X}	S
Pediatric practitioners	138.79	24.93
Developmental pediatricians	150.43	13.91
Allied health professionals	147.18	17.60
Social workers	157.46	23.15
Psychologists	159.07	20.81
Special educators	162.91	17.82

Discriminant Validity

Comparisons among groups of professionals provided a measure of discriminant validity, conducting a one-way analysis of variance resulted in significant differences between professional groups ($F(5,162) = 6.32, p < .001$) (Wolraich & Siperstein, 1983, p. 9).

In addition, a component factor analysis was conducted identifying two factors: "simple task factor" which accounted for 43.1% of the variance and "complex task factor" that accounted for 7.8% of the variance. Significant differences between professional groups were noted on both factors.

Design

According to Richardson & Guralnick (1981), "the designs used most frequently in the evaluation of medical education programs are case studies (post-test only/no control group) or pre-test, post-test comparisons. No assurances can be made that the curriculum actually accounts for the results obtained in the post-test." (p. 131) In the present study, the pool of available subjects was so small that designating some of them as a control group would not have been feasible. Likewise, control subjects were not available from the pool of 2nd and 3rd year residents because they had already participated in the Developmental Disability training rotation.

However, assuming more control of other factors that might influence pre-test, post-test changes can also be accomplished through a multiple baseline repeated measures design. (Thyer & Curtis, 1983; Kazdin, 1983). Richardson & Guralnick (1981) suggest that the typical rotational schedule into one-month developmental disability training programs lends itself to study by pre-test, post-test measures with a control group. Likewise, it can be studied through a multiple baseline technique without requiring changes in schedules or delivery of services. In this design, residents not receiving the treatment act as controls.

According to Kazdin:

In the multiple baseline across individuals baseline data are gathered for a particular measure performed by two or more persons. The multiple baselines refer to the number of persons whose behaviors are observed. The design begins with observations of baseline performance for each individual. After baseline data is gathered, the intervention (developmental disability training) is applied while baseline conditions (no developmental disability training) are continued for the others. The behavior of the first person would be expected to change; the behaviors of the others would be expected to continue at their baseline levels. The procedure is continued until all of the persons for whom baseline data were collected receive the intervention. The effect of the intervention is demonstrated when a change in each person's performance is obtained at the point when the intervention is introduced and not before. (1983, p. 132)

In this design the number of baselines contributes to the strength of the demonstration. Ideally, two or more baseline measures should be obtained and the more, the better. However, in the present study, it is highly likely that too many exposures to the assessment instruments (PMRS and ATDP) could have an influence on or alter the responses. Therefore, in order to avoid overly confounding any biasing effects of repeated exposures to the instruments, and yet to account for change as directly attributable to training, three subjects received two or more baseline measures.

The design can be presented schematically as follows:

	////	=	Training (intervention)
	X	=	Baseline
	O	=	Pre-test
	Q	=	Post-test
	F	=	Follow-up
Sub 1	X////Q	F	F F
Sub 2	X	X////Q	F F
Sub 3	X	X	X////Q F
Sub 4	X	X	X X////Q

Likewise, the design lends itself to measuring maintenance and durability of effect if the measures are taken subsequent to training in follow-up assessments. Three subjects in the study received follow-up measures subsequent to the post-test after training.

In the present study, some of the repeated measures of baseline data and repeated follow-up measures were eliminated due to time and scheduling constraints. It was decided that these measures would be taken if and only when one of the subjects exhibited a significant change in any direction on either of the measures.

Procedures

The PMRS and ATDP scales were administered to all of the subjects prior to the study to establish the first baseline measure. Throughout the study instructions for responding to the questionnaires were read verbatim to eliminate any possible or influencing factors caused by

inconsistency or confusion in instructions. The questionnaires were administered by the investigator. Subsequent measures (baseline, pre-and post training, and follow-ups) were all scheduled for noon on the closest day to the first of each month during which training was provided. Consequently all residents received testing either at the beginning or end of a rotation. Tests were administered in the pediatric library of the Herbert C. Miller Building at the University of Kansas Medical Center.

The Developmental Disability Training Rotation

During the one-month developmental disabilities rotation, residents participate and observe services provided to developmentally delayed or disabled children and adults in various clinics and programs. The goals and clinical components of the rotation have been adapted from training curriculum developed by Guralnick from the Pediatric Education Project at the Nisonger Center in Columbus, Ohio (Guralnick, 1982). During the rotation residents continue to participate in the "core" course for pediatric residents, a series of training seminars and lectures on clinical issues and problems common to all pediatric residents. (See Appendix E.)

During the rotation the residents are involved in as many of the following programs as time and scheduling allows. The level of direct participation varies from

simply touring the community facilities to more direct participation in team meetings at the Children's Rehabilitation Unit (CRU).

Services Available as Training Sites*

The sites described in the following narrative reflect coordination among providers in developing individualized plans for multiply handicapped children and their families. These sites provide practicum settings across a range of handicapping conditions, levels of severity, and ages; interactions with medical sub-specialties and professionals in the community serving the multiply handicapped are ensured. The community programs included here denote those with which we have regular, scheduled interactions; staff with trainees also provide consultation and out-reach training to a number of regional programs.

Feeding Clinic. This CRU/UAF (University Affiliated Facility) clinic is an interdisciplinary training and service setting designed to evaluate and develop management recommendations for a wide range of feeding problems presented by handicapped persons. The clinic team includes staff and trainees from the Nursing, Nutrition, Occupational Therapy, Physical Therapy and Speech divisions. Feeding clinic personnel have traveled

*Information and program descriptions were provided by the UAF Children's Rehabilitation Unit at the University of Kansas Medical Center.

to sites in Kansas and Missouri providing technical assistance to community-based service providers. The team meets bimonthly and serves approximately 3 children per month. A major program objective is to train students and other professionals to provide an integrated evaluation of the nutritional, oral-motor, developmental and psychological components of the eating/feeding process and to develop management techniques for these problems.

Non-Speech Communication Clinic. This clinic serves the diagnostic and treatment needs of children who are nonverbal. Clients who require alternative modes of communication are evaluated with recommendations for a communication system appropriate for their language level and their present environment. The clinic is composed of CRU/UAF staff in Speech Pathology, Occupational Therapy and Audiology. CRU/UAF trainees, graduate students in the Hearing and Speech and Special Education Department are trained in this site. The program objectives include provision of quality diagnostic and treatment services to nonverbal children and regional training and consultation to individuals or groups who serve such handicapped clients. Approximately 12 handicapped clients are served through this clinic which meets once monthly.

Language Preschool. The Language Preschool is operated by a CRU/UAF staff Speech and Language Pathologist in cooperation with the Hearing and Speech

Department, University of Kansas. This preschool program serves handicapped children whose primary deficit is communication. Graduate clinical supervision is provided for both CRU/UAF trainees and non-funded trainees. In addition, parents are offered training in group or individual settings as need dictates. This program serves 6-12 children annually, and meets twice weekly for a total of 3 hours per week.

Severely/Multiply Handicapped Preschool. This model preschool, administered by the Department of Special Education, provides education and related services to children, 18 months to six years of age, who exhibit severe or profound multiple handicaps. This site trains students from Special Education, Occupational Therapy, Physical Therapy, Nursing, Speech, Audiology, Psychology, Nutrition, Social Work and Pediatrics. The program meets daily on a year round basis and serves 10 children. Program objectives, as they relate to the training mission, are to prepare future professionals to effectively communicate and collaborate with educational personnel in the development of comprehensive programs which incorporate health and health-related needs of this population.

High Risk Preschool. The High Risk Preschool is an interdisciplinary service and training program administered by the Department of Special Education. The pre-

school serves children, two to six years of age, with mild to moderate handicaps who are considered at risk for mental retardation. This program serves 16 children; 8 in a morning session and 8 in an afternoon session. The CRU/UAF involvement has evolved from a consultant role to full participation in classroom programming for the children in the areas of speech and language development, health, behavior management and motor development activities. In addition, parents receive supportive counseling and parent training individually or in groups. CRU/UAF disciplines involved in this training site include Audiology, Occupational Therapy, Nursing, Nutrition, Special Education, Speech Therapy and Psychology. In addition to those program objectives of individually prescribed instructional planning and attention to parent needs, a major objective is to provide UAF students an introduction to an interdisciplinary intervention model, based on developmental guidelines, appropriate to the preschool, high risk child.

Deaf Preschool. This preschool provides services to hearing impaired preschool children and their families. The preschool is administered by the Deaf Education division of the Hearing and Speech Department. Diagnostics, aural habilitation, speech therapy, language training and pre-academic skills are provided. The disciplines involved in this preschool include Deaf

Education, Speech Pathology, Audiology and Psychology. Both UAF trainees and non UAF trainees participate in this multidisciplinary preschool program. The program objectives are to provide therapeutic services to young hearing impaired children and their families and to train students from a range of disciplines in the evaluation and training methods unique to deaf children. The program, serving 11 children, meets daily.

The Clinical Classroom for Learning Problems. The CCLP, administered by the Department of Special Education, is designed to provide in depth assessment of and intervention for learning problems of students in grades K-12 who have not responded satisfactorily to the instructional objectives and specific teaching procedures for meeting those objectives. The goal of the program is to return the child to the regular class where the CCLP staff assist the teachers in implementing the program. CRU/UAF trainees, through their involvement in the Interdisciplinary Team participate in the preplacement evaluation and provide consultation on programming recommendations.

Cerebral Palsy Clinic. This clinic, administered by the Department of Surgery, provides screening, diagnosis, management recommendations and follow-up for children with cerebral palsy. Participating staff include orthopedic surgery, pediatric neurology, physical therapy, and speech

therapy. On call services are provided by occupational therapy and nutrition. This clinic meets once weekly and serves 8-10 patients per week. Training in coordinated management of complex neuromotor problems is provided to CRU/UAF trainees, medical students and residents and other allied health students.

Neonatal Intensive Care Unit. This unit is a tertiary care nursery staffed by Neonatology, Anesthesiology, Nursing with regular consultation from Respiratory Therapy and OT/PT. On-call services are provided by Social Work and Nutrition. This 15 bed nursery provides in-patient care for premature infants and full-term babies experiencing difficulty in the neonatal period. Training in the medical and social complexities of neonatal complications is provided to pediatric residents and students in developmental psychology, occupational therapy, physical therapy, nursing and social work.

Institute for Children's Deformities. This clinic, a program of the Department of Surgery, provides evaluation, treatment and follow-up services to children with craniofacial anomalies and other pediatric deformities. The clinic draws patients from a broad regional base throughout the midwestern states. Institute team members include plastic surgery, speech pathology, genetics, audiology, pediatrics and psychology. The clinic meets 8-

10 times per year serving 4-6 children per clinic. An objective of the program is to develop in the student an awareness of the advances in treatment for children with deformities, the medical and psychological impact of disfigurement and the utilization of a range of disciplines to treat such chronic handicaps. Medical students and residents, dental trainees, CRU/UAF speech pathology and audiology trainees and other allied health students participate in this clinic.

Spina Bifida Clinic. This clinic, as part of the KUMC paraplegic clinic, provides interdisciplinary evaluation, treatment and follow-up for children with the diagnosis of spina bifida. The core team funded by CCICP includes a pediatrician, nurse, social worker, nutritionist (CRU/UAF) and the CCICP liaison. Subspecialties include: orthopedics, neurosurgery, urology and occupational therapy. The clinic meets monthly and serves approximately 25 children per month. This site provides training experiences for CRU/UAF trainees, medical students, residents, and fellows and graduate students from the School of Allied Health and Hospitals. An objective of the program is to familiarize UAF students with the coordinated management of such handicaps, including family support and information in the newborn period and need for ongoing health and psycho-social services throughout life.

PKU Clinic. This clinic serves the diagnostic and follow-up needs of children with the diagnoses of phenylketonuria (PKU) and hyperphenylalaninemia. The core team consists of medicine and nutrition with consulting services from physical therapy, occupational therapy, psychology and nursing. Twenty-five children are served through this clinic which meets weekly. This site provides training experiences for CRU/UAF trainees, medical students, residents, and fellows and graduate students from the School of Allied Health. An objective of this program for CRU/UAF trainees is to develop an understanding of the importance of early diagnosis and treatment in the prevention of one type of mental retardation and to understand the interplay among environmental, personal-social and medical factors in the effectiveness of management of certain conditions.

Cleft Palate Clinic. This clinic operated by the Department of Surgery serves children and youth to 21 years with cleft lip and palate. KUMC personnel from Plastic Surgery, Otorhinolaryngology, Hearing and Speech, and CRU/UAF personnel from Dentistry and Speech-Language Pathology coordinate the training and service components of this clinic. CRU/UAF trainees, medical students, residents, and fellows and graduate students from the School of Allied Health are trained in this site. The Clinic provides diagnostic and management recommendations

for approximately two-thirds of the Cleft Palate children under the Kansas Crippled Children's Program. This clinic meets every three weeks serving 10 children per clinic.

Seating Clinic. This clinic administered by the Department of Rehabilitation Medicine provides evaluation, prescription and custom positioning/seating systems for people whose needs are not met by their present equipment. The criteria for each client's equipment include the following: proper positioning of joints, maximizing comfort, improving function and maximizing ability to perform activities of daily living and independence. The team consists of a psychiatrist, orthotist, social worker, nurse, occupational therapist, physical therapist (CRU/UAF) and the CCICP liaison. Representatives from wheelchair sales companies also attend the clinic. The clinic provides a training site for CRU/UAF students, medical students and residents. The clinic meets twice monthly with 8 children served per month. The program objectives, as they relate to the overall training of UAF students, include familiarizing students with evaluation procedures for determining optimum positioning/seating systems and acquainting them with present and future technology for improving positioning and subsequent function in severely handicapped individuals.

United Cerebral Palsy Preschool. This is a community-based preschool operated by United Cerebral

Palsy Association, providing services to severely handicapped preschoolers, age 18 months to 6 years in Kansas and Missouri. Training and service are provided to handicapped children and the preschool staff by the Occupational Therapy and Physical Therapy divisions with consultation by Nursing and Nutrition. This program meets daily, serving 20 children. Objectives for students in this program include learning to function as consultants to community based programs and to train personnel from other divisions in positioning, .pa handling and motor programming for severely handicapped.

Community Service Center. The Special Children's Center of the Community Service Center provides a therapeutic day care program for children at risk for abuse and neglect. Many of these children present with mild mental retardation, failure to thrive and other handicapping conditions due to adverse environmental factors. This is a daily program serving 100 inner city children. The CRU/UAF Nursing division assists the program staff in identifying those children at greatest risk for mental retardation and initiates referrals for additional evaluation and treatment as indicated. Additionally, trainees in psychology participate in on-site classroom observation and consultation to teachers. An objective of the program is to provide training experience in a community program to meet the needs of

mildly handicapped and at risk children for stimulation, consistency and nurturing.

UMKC/UAF Preschool. This is a community-based preschool, operated by the University of Missouri-Kansas City/UAF (UMKC/UAF), providing services to severely/multiply handicapped preschoolers, ages 18 months to 3 years. Twenty children are served through a daily program. Training and service are provided by the Occupational, Physical and Speech Therapy Divisions with consultation as necessary from other UAF disciplines. Objectives for students in this program address training in consultation, including technical assistance and inservice education, for educational personnel serving multiply handicapped children.

In addition to these programs, the residents tour the following community agencies and services:

Johnson County Mental Retardation Center. A comprehensive, multi-disciplinary agency that provides residential, supportive learning, work activities, and sheltered employment services to developmentally disabled adults.

Faith Village. A private multi-unit intermediate care facility (ICF/MR) providing residential services to developmentally disabled adults.

Kansas Neurological Institute (Topeka). A state operated public residential facility serving

developmentally disabled individuals of all ages providing comprehensive services including educational, clinical, treatment, residential, and employment services.

Association for Retarded Citizens. Provides services, information, and support to mentally retarded individuals and their families.

The residents may also participate in and observe the interdisciplinary team screenings, evaluations, and treatment for individuals referred to the C.R.U. Residents also view video tapes on topics such as "What are developmental disabilities?" and tapes on treatment techniques in areas such as feeding.

Although the schedule is not exactly identical for all residents, most participate in the majority of the activities, however the sequence of scheduling may be different. At the end of the rotation, residents are asked to briefly evaluate the program in terms of the quality of instruction, appropriateness and training opportunities.

Treatment of Data.

Questionnaires were scored according to the developers' scoring instructions and individually graphed. Correlation between the two measures were conducted on the initial pre-test measures. Because the sample size is so small, correlations between the outcome scores and any other demographic data were not conducted. An item

analysis was conducted at the end of the study to ascertain particular questions that elicited the greatest variances in responses. Test/retest reliability for both measures was assessed for the non-treatment segments of the study. Mean change score comparisons were noted between treatment and no treatment components on both measures.

CHAPTER IV

Results

Overview

The purpose of this study was to measure the extent to which scores of pediatric residents on the ATDP and PMRS scales change as a result of training. The design of the study allows for a comparison between the two measures and estimates of extent of change, direction, and durability of change. For purposes of analyses, comparisons can be made between changes that took place in non-treatment segments and changes attributable to training segments. In addition, an in depth analysis of the PMRS scale is helpful because it has been developed only very recently. To date, no comparison or correlation of the PMRS with any other measures has been reported.

Analyses

An initial question regarding the study is to ascertain the extent to which the PMRS varies with the ATDP scale repeated across 4 subjects. The present study yielded 15 pairs of scores. A positive correlation of $+.434$ was obtained (see Table 1). This is consistent with the developers' assumption that prognostication is either correlated with or a subset of attitudes toward disabled persons.

Table 1.

Correlation Between the PMRS Scale and the ATDP Scale

Subject	Pairs of Scores	
	ATDP Scale	PMRS Scale
	X	Y
(1)	115	117
	129	110
	104	111
	119	112
(2)	70	80
	50	58
	58	80
	82	91
(3)	105	90
	104	103
	88	94
(4)	133	78
	138	79
	131	76
	137	107

$N = 15$ Raw scores $\div 10$

$\Sigma X = 156.3$ $\Sigma Y = 138.6$

$\Sigma XY = 1474.44$ $\Sigma X^2 = 1745.79$ $\Sigma Y^2 = 1321.94$

$(\Sigma X)^2 = 24429.7$ $(\Sigma Y)^2 = 19209.96$ $(\Sigma X)(\Sigma Y) = 21663.18$

Pearson Product-Moment Correlation = $+.434$

A second concern in interpreting the results would be to determine how reliable the measures were and how much of a change in scores could be attributed to error. For the non-training segments of the study, the PMRS was a

relatively stable measure with a test/retest reliability of +.8245 obtained by the Pearson-product movement correlations between pairs of scores. The ATDP, on the other hand, showed only a +.192 test/retest reliability over the same segments. The standard error of measurement for the PMRS was approximately 7.4 points, the ATDP was 23.67 points.

Table 2.

Standard Error of Measurement - Non-Training Segments

ATDP	PMRS
$\sigma = 26.33$	$\sigma = 17.59$
$r_{xx} = +.192$	$r_{xx} = +.8245$
$\sigma_m = \sigma_x \sqrt{1-r_{xx}}$	$\sigma_m = \sigma_x \sqrt{1-r_{xx}}$
$= 26.33 \sqrt{1-.192}$	$= 17.59 \sqrt{1-.8245}$
$= 23.67^*$	$= 17.59 (.4189)$
	$= 7.37$

σ = Standard deviation

r_{xx} = test/retest reliability

σ_m = standard error of measurement

A third issue in the analysis is the determination of how the subjects in the present study compared to normative samples on each of the measures. The ATDP (Form A) reports separate normative data for non-disabled males

and non-disabled females, both in terms of mean scores and Percentile Ranks. Table 3 presents subject's scores during the initial baseline measure and also scores obtained immediately after training. Although the developers and subsequent studies report that in general, females tend to score higher on the ATDP than males, the reverse was true in the present study with the only male scoring substantially higher than the females. In addition, females as a group scored lower on post test scores than on the initial baseline measure.

Table 3.

Scores of Subjects on the ATDP Relative to Norm Groups

Baseline Score	Norm	Percentile	Post Test Score	Norm	Percentile	
Males:	133	106.5	73%	137	106.5	75%
Females:	115	114.8	51%	129	114.18	76%
	70	"	8%	58	"	2%
	105	"	26%	88	"	10%
	$\bar{X}=96.7$	$\bar{X}=22\%^*$	$\bar{X}=91.6$		$\bar{X}=16\%$	

* Mean Percentile Rank is based on Mean Raw Scores

In order to compare scores on the PMRS to scores for the normative sample reported by Wolraich and Siperstein, all scores were converted to percentages. (See Table 4.) In general, the subjects in the present study (pediatric

residents) scored lower on the PMRS scale than did pediatric practitioners (and all other groups) in the normative sample. This comparison should be used only as a rough estimation of equivalence due to minor differences in the instrument itself (see methods section).

Table 4.

Scores of Subjects on the PMRS Relative to Norm Group*

Subject	Raw Score	%**	%**	Raw Score	Comparative Norm Group
<u>Pre-test scores:</u>					
(1)	117	56%	51.8%	138.79	Pediatric Practitioners
(2)	80	30.5%	57.0%	150.43	Developmental Pediatricians
(3)	90	37.5%	56.0%	147.18	Allied Health
(4)	78	29.2%	61.0%	157.46	Social Workers
	<u> </u>	<u> </u>	62.0%	159.07	Psychologists
	$\bar{X}=91$	$\bar{X}=38.2\%$	63.3%	162.91	Special Educators
<u>Post-test scores:</u>					
(1)	110	51.4%			
(2)	80	30.6%			
(3)	94	40.2%			
(4)	107	49.3%			
	<u> </u>	<u> </u>			
	$\bar{X}=97.75$	$\bar{X}=42.9\%$			

* Norm group reported by Wolraich & Siperstein (1983)

** Scores on the present adaptation of PMRS and scores on original PMRS converted to percentages as follows:

Original PMRS - Range from 30 - 240 R=210

Adapted PMRS - Range from 36 - 180 R=144

Formula for conversion: Raw Score - Base (30 or 36)

Overall change across subjects:

Figures 1 and 2 present the overall changes in scores across time for all subjects on the ATDP and PMRS scales.

Figure 1.

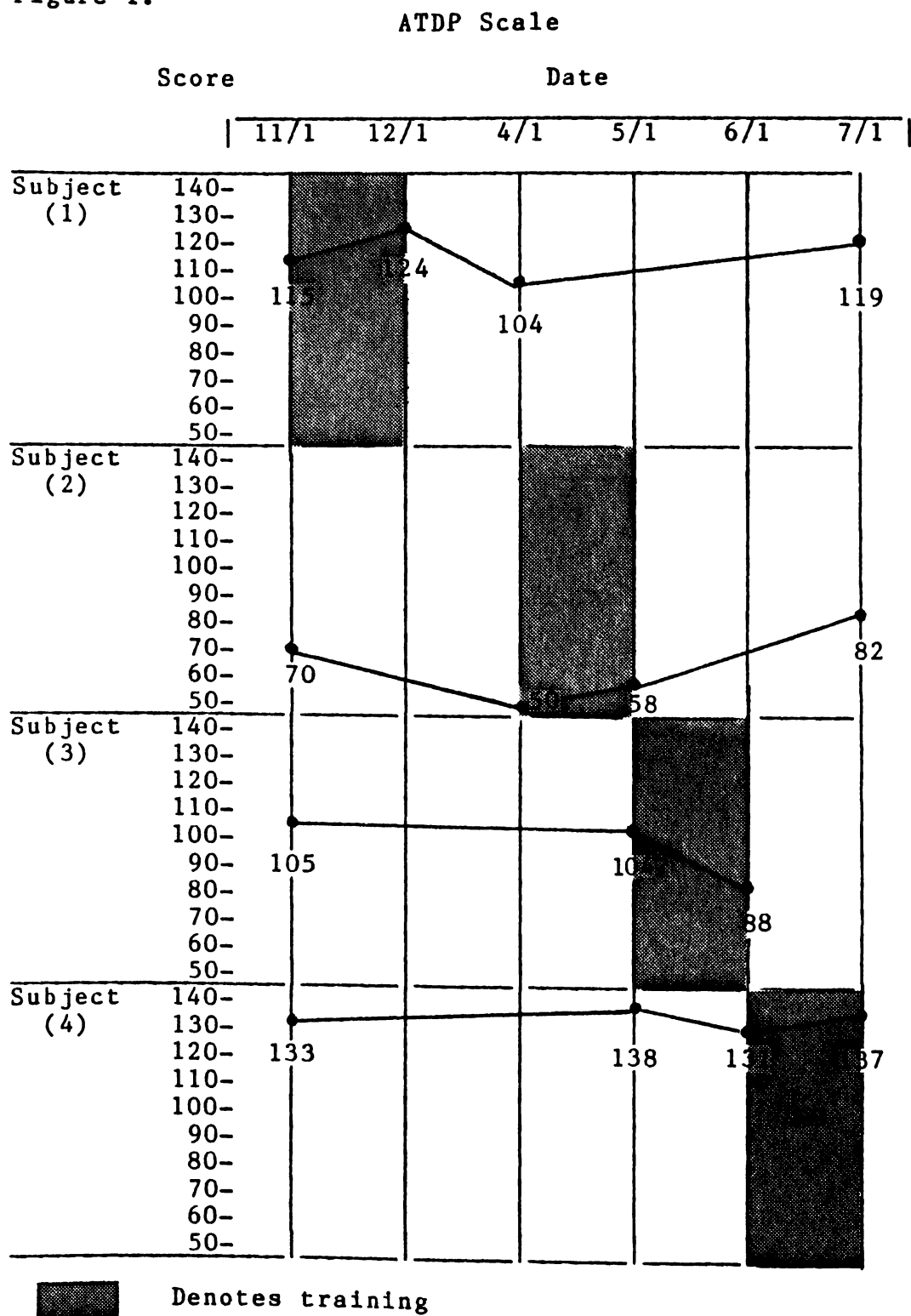
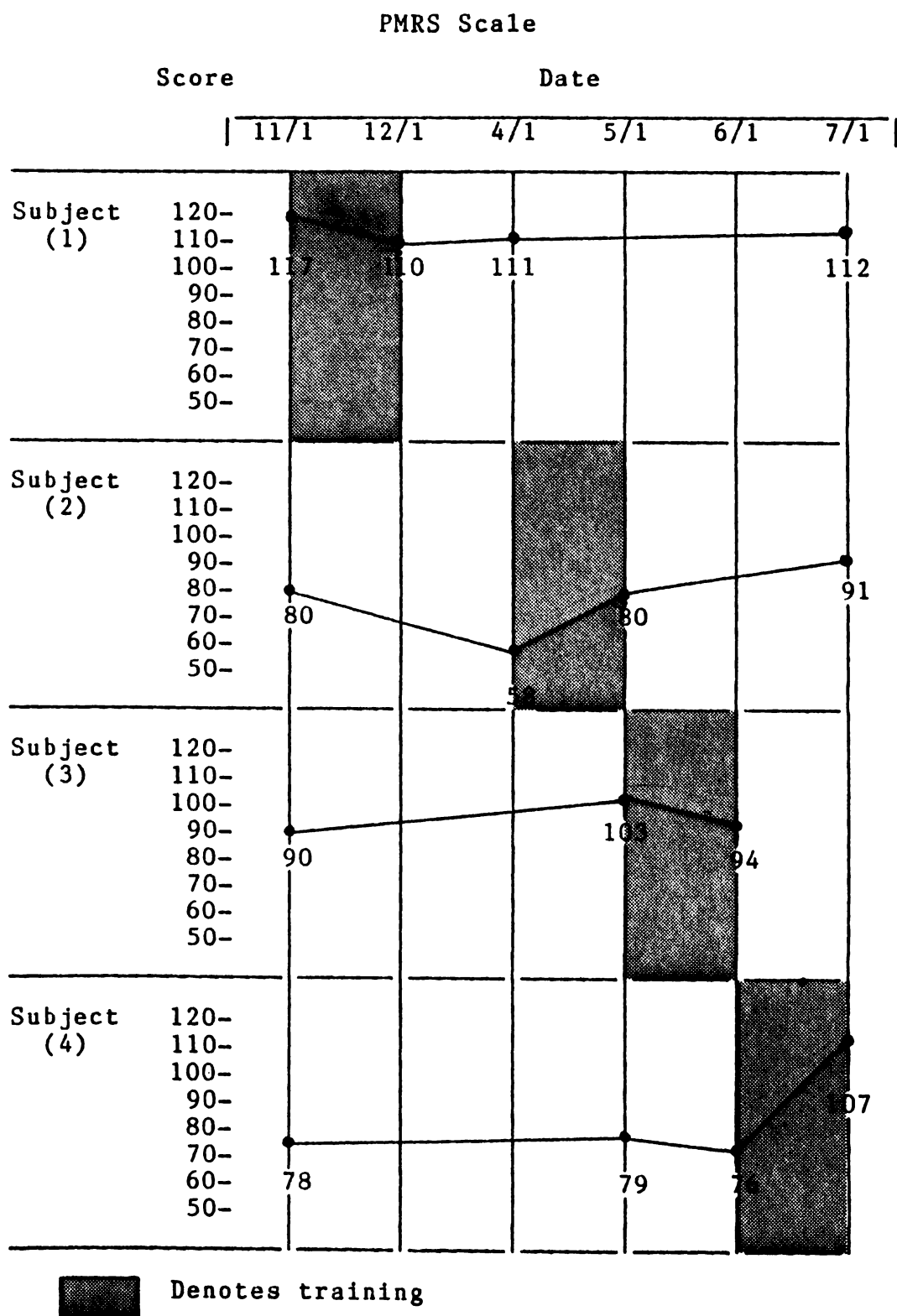


Figure 2.



By examining the overall results, it seems that training did not have a consistent effect (either positive or negative) on the subjects' scores and that the results are individualized. Scores increased on either scale for some subjects and decreased for others.

Upon further examination, because changes took place in all segments, the question arises regarding whether or not the variance of scores was greater during training segments than during non-training segments. The mean of change scores for the PMRS during the training segments was 14.75 and only 6.0 for non-training segments which indicates that during the training scores did change much more than without training, but not consistently in any one direction.

Table 5.

Mean of Total Change Scores on the PMRS Scale

During Training				Non-Training Segments			
Subject	Pre	Post	Total Change	Subject	Scores		Total Change
(1)	117	110	-7	(1)	110	111	1
(2)	58	80	12		111	112	1
(3)	103	94	-9	(2)	80	58	-12
(4)	76	107	31		80	91	11
			———	(3)	90	103	13
			$\bar{X} = \pm 14.75$	(4)	78	79	1
					79	76	-3
							———
							$\bar{X} = \pm 6.0$

On the other hand, the mean change scores on the ATDP fluctuated more widely during non-training segments ($\bar{X} = 13.86$) than they did during the training segments ($\bar{X} = 11.0$).

Table 6.

Mean of Total Change Scores on the ATDP Scale

During Training				Non-Training Segments			
Subject	Pre	Post	Total Change	Subject	Scores		Total Change
(1)	115	129	14	(1)	129	104	-25
(2)	50	58	82		104	119	15
(3)	104	88	-16	(2)	70	50	-20
(4)	131	137	6		58	82	24
			$\bar{X}=\pm 11$	(3)	105	104	-1
				(4)	133	138	5
					138	131	-7
							$\bar{X}=\pm 13.86$

Sources of variation: ATDP

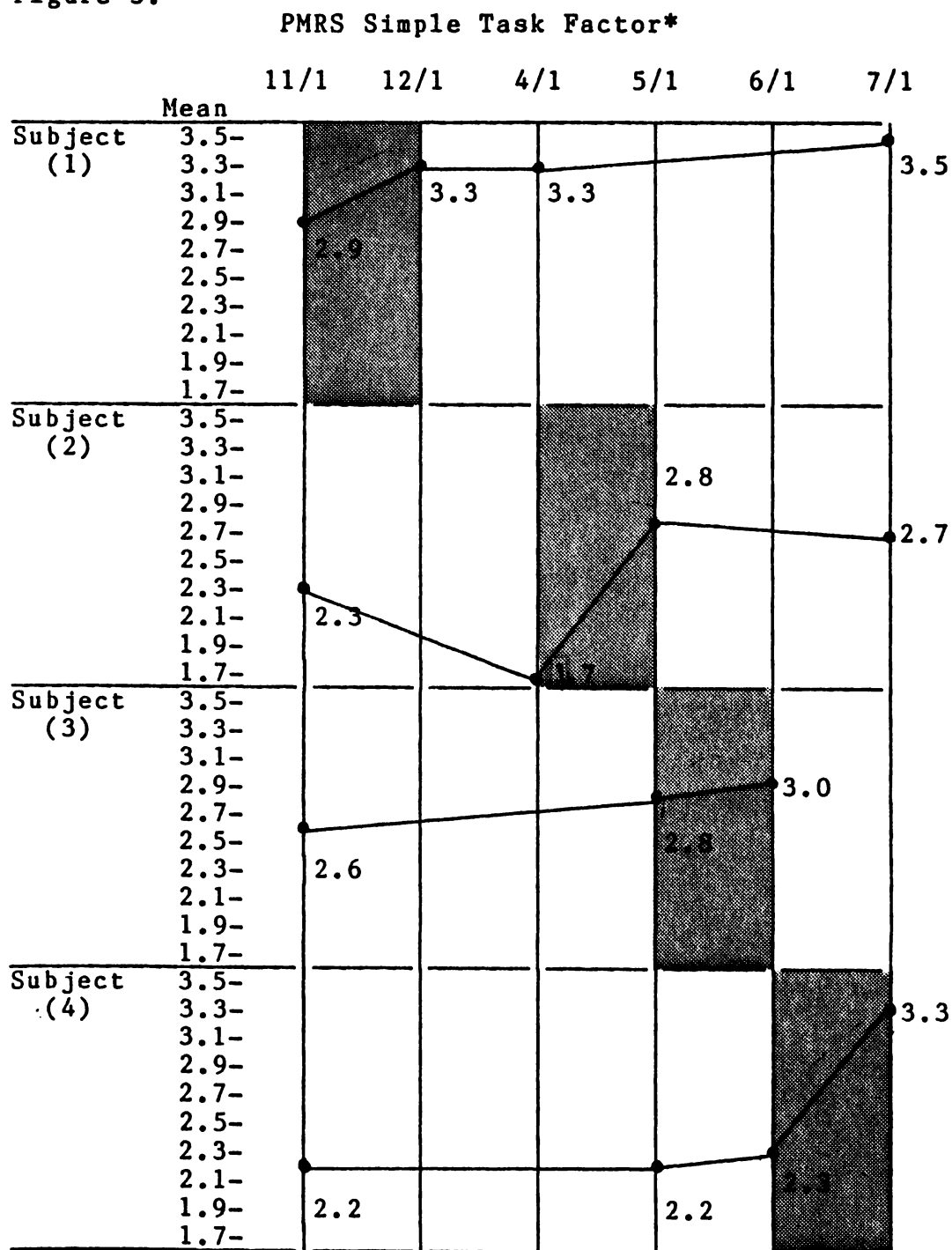
These findings lead to the possibility that certain groups of factors changed on the PMRS during training, while others did not change, or changed in the opposite direction. Wolraich & Siperstein (1983) speculate that the PMRS measures two main factors: a simple task factor and a complex/social factor. In the present study items that clustered together in a positive direction included simple task items as follows:

- (1) is independent in dressing

- (4) drinks from a cup unassisted
- (8) is able to use a lock and key
- (12) does own laundry
- (13) makes change for a dollar
- (11) uses utensils when eating
- (14) tells time
- (31) can live in a group home
- (34) can work in supervised employment
(sheltered workshop)
- (36) can attend a daily activities center

In assessing overall change in the simple task factor it can be noted that changes on all subjects were either in a positive or no change direction. Changes in these items were much more marked than changes in the overall scale. Subsequent follow-up measures also indicate that the changes were relatively stable and durable across time.

Figure 3.

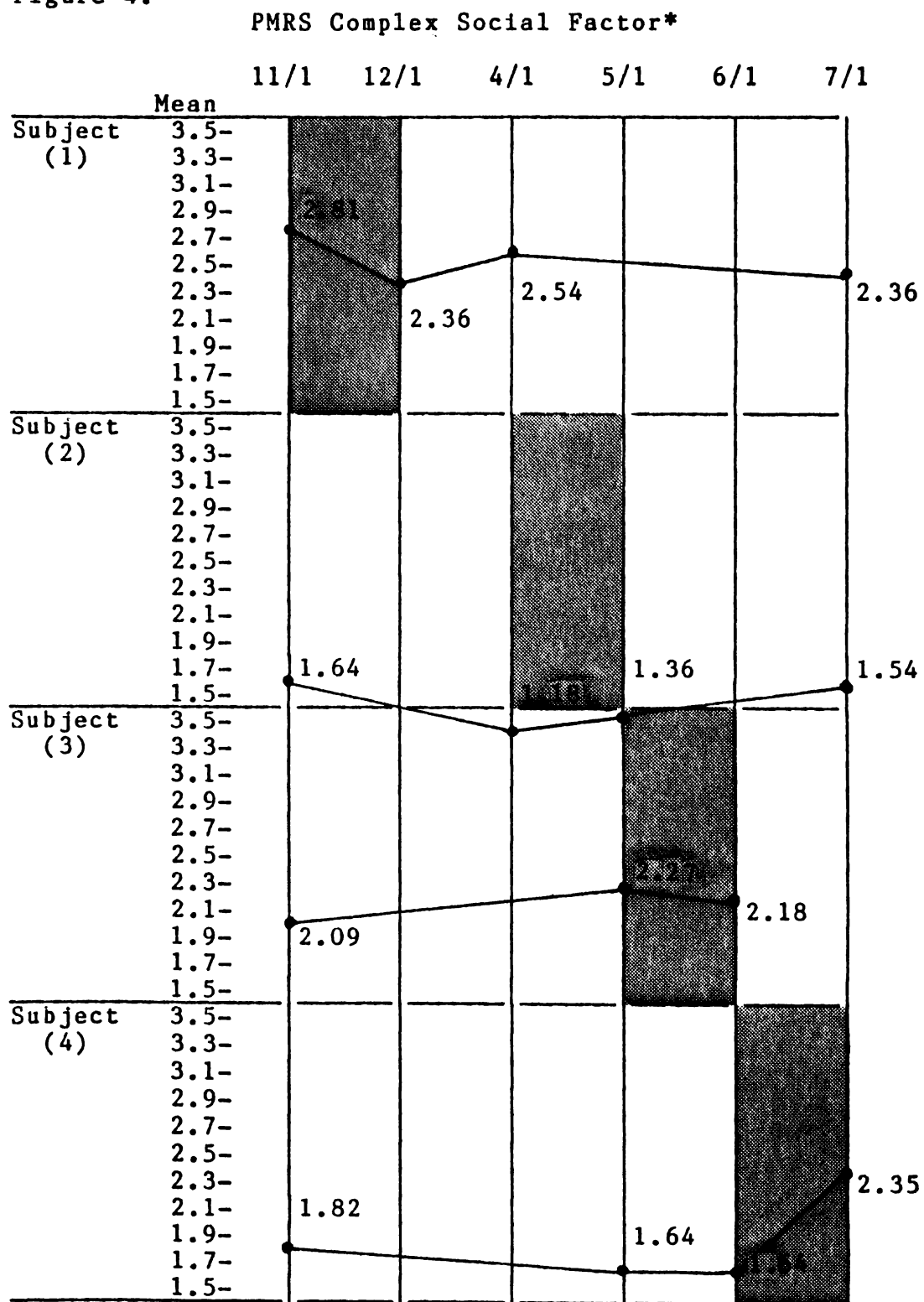


*Items 1, 4, 8, 10, 12, 13, 14, 31, 34, 36

On the other hand, the complex/social task factor which includes the following items tended to account for negative change in some individuals, or at least changed less positively than simple task factors:

- (3) is able to enter into a marriage contract
- (5) cooks a meal unsupervised
- (6) is capable of raising children
- (7) is able to find way in unfamiliar surroundings
- (15) can have discrete/intimate relationships with the opposite sex
- (20) can independently schedule daily activities
- (23) is capable of following national news events
- (25) sustains a friendship with another person
- (26) anticipates hazards appropriately
- (29) can live unsupervised in an apartment
- (33) can work in competitive employment

Figure 4.



*Items 3, 5, 6, 7, 15, 20, 23, 25, 26, 29, 33

These two clusters represent most of the variance across and between subjects. Items 3, 11, 19, 24, 25 and 28 on the PMRS accounted for 28% of the total variance.

In examining which specific items represented the most variance in a particular direction over all measurement segments mean change scores were assessed for all subjects on all items. Table 7 represents items which changed most substantially either positively or negatively during the study.

Table 7.

Mean Change Scores on the PMRS Scale - All Segments

Mean Change*	Item
<hr/>	
Positive Change:	
+ 1.00	is able to use a lock and a key
+ .75	is independent in dressing
+ .75	does own laundry
+ .75	makes change for a dollar
+ .75	can attend a daily activities center
+ .50	uses a pay phone
+ .50	is able to wash hands and face independently
+ .50	recognizes traffic and exit signs
+ .50	can live in a supervised apartment
Negative Change:	
- .25	is able to enter into a marriage contract
- .25	sustains a friendship with another person
- .25	fills out job applications
- .25	finds way in unfamiliar surroundings

* A positive change indicates that the subjects felt that a lower level of adult intelligence would be needed to perform the function; a negative change indicates the subjects felt a higher level of intelligence would be needed to perform the function.

One main question arises as to what was the lowest level of adult intelligence the subjects overall thought was necessary to perform the functions listed on the scale. Table 8 presents each item rank ordered according to how the residents responded. On the PMRS Scale, a score of 1 indicates normal intelligence is required, a 5

indicates that the function can be accomplished by someone with profound mental retardation. It is interesting to note that deviations in the mean score vary little throughout the ranking, except for the last two items. Overall, the pediatric residents felt that individuals below an IQ of approximately 30 could not accomplish any of the tasks with the exception of residing in an institution.

Table 8.

Overall Mean Scores on the PMRS Scale - All Measurement Segments

Mean	Item
1.50	Is capable of keeping and balancing a checkbook.
1.57	Can live unsupervised in an apartment.
1.57	Can work in competitive employment.
1.71	fills out job applications
1.71	is capable of following national news events
1.79	is capable of raising children
1.85	is able to enter into a marriage contract
1.85	can have discrete relationships with the opposite sex
2.00	cooks a meal unsupervised
2.07	can independently schedule activities
2.14	is able to find way in unfamiliar surroundings
2.21	anticipates hazards appropriately
2.21	makes change for a dollar
2.28	recognizes traffic and exit signs
2.29	uses public transportation independently
2.35	uses pay phone
2.42	tells time
2.64	can verbally indicate symptoms to a physician when ill
2.64	communicates using understandable oral language

Table 8. [cont.]

Mean	Item
2.64	can choose appropriate clothes to wear
2.64	is able to play baseball
2.64	can work in supervised employment (sheltered workshop)
2.64	acts appropriately toward strangers
2.71	can live in a supervised apartment
2.85	is independent in toileting
2.92	is independent in dressing
3.00	uses utensils when eating
3.07	drinks from a cup unassisted
3.14	sustains a friendship with another person
3.28	is able to wash hands and face independently
3.28	can live in a group home
3.28	can attend a daily activities center
4.57	can live in an institution for the mentally retarded
4.57	incapable of any productive employment

Respondents were asked to select the lowest level of adult intelligence needed to perform each of the functions. A score of 1.00 indicates normal intelligence; a score of 5.00 indicates profound retardation (IQ 0-25).

Mean change scores on items with the greatest variance on the ATDP were examined to ascertain the extent the direction of change during pre/post segments and overall.

In general, during the pre/post segment changes occurred in a number of items that would indicate residents tended to view disabled people as more sociable, ambitious, more intelligent than they had originally believed. They also tended to report that disabled people should not live and work with non-disabled people, that

they can not make much of a contribution to society, that they were perceived as being more emotional, less successful as workers expected more sympathy, and were more resentful of non-disabled people.

Table 9.

Mean Change Scores for Items on the ATDP Scale -
Pre/Post Segments Only

Mean Change*	Item Number	Item
\bar{X}		
+ 1.25	(14)	Disabled people are usually sociable.
- 1.25	(23)	It would be best if disabled persons would live and work with non-disabled persons.
+ 1.25	(24)	Most severely disabled people are just as ambitious as physically normal persons.
+ .75	(7)	Disabled people usually do not make much of a contribution to society.
+ .75	(3)	Disabled people are more emotional than other people.
+ .75	(20)	Most disabled people resent physically normal people.
+ .75	(6)	Disabled workers cannot be as successful as other workers.
+ .75	(13)	The driving test given to disabled persons should be more severe than the one given to non-disabled persons.
- .75	(27)	Physically disabled persons are often less intelligent than non-disabled persons.
- .75	(29)	Disabled people don't want any more sympathy than other people.

* The sign of + or - indicates the direction of change: a + sign indicates that the subjects agreed more strongly with the statement; a - sign indicates that they began disagreeing more strongly with the statement.

In comparison, throughout the overall study (all measurement segments) the direction of change shows that subjects began viewing disabled people as being more different than non-disabled persons, more emotional, less

intelligent, and that most non-disabled people would not want to marry a disabled person. On the other hand, the subjects tended to agree more with items that indicate disabled people are self-confident, are not dissatisfied with themselves, do not worry more about their health than non-disabled people, and that they do not want sympathy.

Table 10.

Mean Change Scores for Items on the ATDP Scale -
All Measurement Segments

Mean Change*	Item Number	Item
\bar{X}		
+ 1.50	(28)	Most disabled people are different from non-disabled people.
+ 1.50	(27)	Physically disabled people are often less intelligent than non-disabled ones.
+ 1.25	(8)	Most non-disabled people would not want to marry anyone who is physically disabled.
+ 1.25	(14)	Disabled people are usually sociable.
- 1.25	(16)	Severely disabled persons probably worry more about their health than those who have minor disabilities.
+ 1.00	(3)	Disabled people are more emotional than other people.
+ .75	(6)	Disabled workers cannot be as successful as other workers.
+ .75	(7)	Disabled people usually do not make much of a contribution to society.
+ .75	(12)	Most disabled people feel that they are as good as other people.
+ .75	(17)	Most disabled persons are not dissatisfied with themselves.
- .75	(20)	Most disabled persons resent physically normal people.

Table 10. [cont.]

Mean Change*	Item Number	Item
\bar{X}		
- .75	(25)	Disabled people are just as self-confident as other people.
- .75	(29)	Disabled people don't want any more sympathy than other people.

* The sign of + or - indicates the direction of change: a + sign indicates that the subjects agreed more strongly with the statement; a - sign indicates that they began disagreeing more strongly with the statement.

The developers of the ATDP report numerous attempts at conducting factor analyses of the ATDP with little success. An analysis of the items and change scores on the scale did not result in any consistent groupings or clustering of factors which tended to vary together. Overall, the general results and item analysis tend to elicit inconsistent results on the ATDP.

Interview Results

At the end of the study, subjects were asked regarding the following four questions: a) what may have accounted for any change in their attitudes toward handicapped persons or mental retardation, b) implications of the Developmentally Disabled rotation on referral patterns, c) feelings about the rotation itself, and d) feelings about participation in the study.

1. What experience did you have that may have influenced your attitude toward working with handicapped children?

Going to K.N.I. really affected me. I hadn't dealt with severe/profound patients before and I hadn't realized how little is really done in an institution. They just sit there all day. They were all severe and profound and I know things were being done, but I just didn't see it. Because of laws you have to provide an education, so they were all taken to school rooms and so then nothing was done. Well, I guess it made me realize a little bit more what I'm dealing with. I can't really expect as much as I wanted to. And they all started out in NICU, and we do all we can possibly do for them, but now I sometimes wonder why. We really don't know where they can go--chances of severe disability are high. You can't tell what's going to happen, but everyone here always does as much as they can.

I just wish I knew the right answers on these tests. What influenced me most was seeing some of the programs where they live. I didn't know we had those kinds of programs and they could do so much.

Your expectations might get lower on the rotation. I guess the more you know about capabilities then the more you realize they have limits. We see that a fair amount. We try to tell parents about neurological deficits and they just can't accept it.

We all want something we can treat. You can't give medicine for a developmental disability. But our orientation is in that direction. You have a problem, you treat it, and physicians can't treat it--it's taken care of by other health care professionals so sometimes we feel ill equipped.

2. Regarding referral patterns: How do you feel your experience in the rotation may affect your future referral patterns?

You're always affected by knowing people; more likely to refer to them in a positive sense. I learned a lot about an area I knew little about. But, if I leave here, I might not have the time to find out about what's available in another area.

I feel positive about it because now I know I can help the mentally retarded child as well as the

family. ...being aware of all the possibilities we have to help is important.

3. In general, how do you feel about the Developmental Disability Rotation?

One month is not enough. I enjoyed that rotation. I wish we could have a little more responsibility--a more active part. It would be harder, but you would learn more. When I was there I would act as an observer. I was surprised at the residential services--that's neat.

The best I guess you can do is expose us as much as you can to special education and developmental disabilities and you can't expect to go much more in depth than that. Because we're a center we have a higher percentage of Developmental Disability than in the rest of the community so I think we get a good exposure to children with Developmental Disabilities. Day to day exposure is about as much as you can expect. It's such a broad field that you can't get much out of it in a month.

I was really surprised about some of the things mentally retarded people could do. I feel that since I have a good friend who is disabled I feel pretty accepting of them in general, but that's totally different than mental retardation. I was impressed with some of the residential programs. I was surprised that really, they were more retarded, I mean in an IQ sense, than I would have thought at first.

4. How did you feel about the study and taking the measurements more than once?

I think with me the tests were far enough apart that I could never remember the answers, but I'm just tired--not with the test, I'm just tired.

The same questions every time--maybe I'm tired of it, I don't think it influenced my answers. But last night I got two hours of sleep. I slept in the emergency room so I don't know how I'll do.

When I'm on NICU I don't even get a lunch break sometimes, and I know this is important and doesn't take a lot of time. I just wish I had more time.

CHAPTER V

Discussion and Conclusions

Overview

This chapter will discuss (a) the appropriateness of using the ATDP Scale and the PMRS Scale for measuring changes in attitudes of pediatric residents as a result of a one month rotation in developmental disabilities; (b) the advantages and limitations of the design employed in the study; (c) the overall implications of the findings and specific recommendations for training and (e) suggestions for further research.

Instrumentation

The results of the present study seem to indicate that the PMRS scale was an appropriate instrument to measure changes in prognostication brought about by training. It was a fairly reliable instrument with a relatively low standard error of measurement. The scale also elicited results that could be divided into discrete clusters of factors. The PMRS was also sensitive to changes attributable to training: changes in scores during the treatment segments were greater than baseline or follow up changes in scores. Although the overall scores were inconsistent, a single cluster of items was identified that changed consistently in a positive direction across all subjects.

The ATDP scale, on the other hand also yielded

inconsistent overall results, but these are much more difficult to analyze due to the low test/retest reliability of the scale as found in the present study. Consistent with previous literature, the scale did not break down into discrete groups of clusters of items that consistently changed in any one direction. Because of these factors, it would be premature to make any definitive statements about changes in the ATDP scores. Scores on the ATDP tended to fluctuate more widely during the non-training segments (baseline and follow-up) than during the rotation.

Design

The design employed in the current study was more rigorous than those previously reported to measure similar training effects. The use of repeated measures in a time series fashion controlled measurement error which may have accounted for change during the intervention segment. The multiple baseline design allowed subjects during non-treatment segments to act as controls for the study. The design also controlled for maturational processes which may have accounted for change. Likewise, it was possible through the use of this design, to ascertain durability of change through the use of follow-up measures. However, the sample size was small ($N=4$) allowing for little confidence in statistical inference regarding actual significance of change scores.

Interpretation of Results

The most consistent and substantial change observed in the study was in the identification of a particular cluster of items (Simple task factor) on the PMRs Scale that represented the greatest degree of positive change attributable to training across all subjects. After the rotation the subjects recognized that simple functional tasks such as drinking from a cup, doing laundry, using utensils when eating, dressing, etc. (see page 78) could be accomplished by individuals with lower levels of intelligence than they had previously thought. These changes also remained durable. Even subjects whose overall scores decreased on the PMRS during training, reported positive changes on these items.

Although more tentative, the PMRS results also seem to indicate that residents' scores changed less favorably toward complex/social items such as entering into a marriage contract, raising children, having intimate relationships with opposite sex, working in competitive employment, etc. (see page 81). After the rotation, the residents tended to feel that these skills required either the same or a higher level of intelligence than they had previously thought.

The results of the ATDP also seem to lend support to these overall changes. Changes in measurements taken prior to and after the rotation indicate that residents

(after the rotation) tended to feel that disabled persons are more sociable, intelligent, and ambitious than they had previously believed. On the other hand (in terms of complex skill requirements), they began agreeing more strongly that disabled people do not make much of a contribution to society, that they cannot be as successful as other workers, and that it would be best if they didn't live and work with non-disabled persons. (See page 88).

It seems reasonable to speculate that these findings imply that a dichotomy in "attitudes" (as measured on the PMRS & ATDP) may have taken place as a result of the rotation. Specifically, a more optimistic, positive attitude or set of expectations took place regarding mentally retarded and disabled persons in terms of accomplishing simple functional tasks, and conversely, a more negative or less optimistic set of expectations regarding complex tasks or complex social skills.

There are at least three possible factors that may have influenced these changes:

- (a) The contact factor - as noted in previous literature, contact in medical (or rehabilitation) settings that focus on limitations of an individual may result in recognition of limitations, and weakness, resulting in lower attitude scores.
- (b) The skills represented in the simple task factor

may have been observed in residential settings for adults (such as group homes and intermediate care facilities) and classroom settings for children that are task oriented providing new information for residents, thereby influencing their expectations in a positive direction.

- (c) Due to the nature of the rotation, the residents quite likely did not observe adult individuals participating in complex social skills or tasks outside of a treatment or rehabilitation setting, thereby receiving little observational information upon which to make any changes in their assumptions or expectations.

Another finding that warrants further comment is that residents did not differentiate any tasks on the PMRS that could be accomplished by profoundly mentally retarded persons other than residing in an institution. (See page 85).

Implications for Training

As noted in the interviews, the settings that seemed to have most impact on residents' attitudes were those of a residential nature and not medical/clinical settings. When asked what influenced their attitudes the most, they all responded with residential or institutional services. Likewise, the most positive changes in the prognostication measure were in the simple task factor composed of

functional tasks that most likely were observed in residential (group homes) or community agencies serving developmentally disabled adults or preschool classroom settings. Although no clear cause and effect relationship has been established, it is quite possible that observing individuals accomplishing these functional tasks did lead to the more optimistic and favorable results on the PMRS. It is likely that medical settings do not allow this observation of complex skills and social relationships (e.g., marriage, cooking a meal, living unsupervised) to be made.

These results indicate that in order to improve expectations regarding complex/social skills the following suggestions may warrant consideration:

(a) Observing developmentally disabled individuals functioning in semi-independent living situations or within the context of a family may yield positive results in terms of prognostication because an emphasis would be placed on the strengths and capabilities of individuals in both accomplishing simple tasks and more complex/social skills.

(b) The depth of contact or participation may also influence attitudes. It is likely that more depth of participation (as opposed to observation) with individuals in settings that emphasize strengths and capabilities in complex skills may result in more favorable attitudes and

expectations.

(c) One addition to the rotation that may prove to be appropriate would be to allow residents to observe or participate in services provided by an independent living center (ILC). Independent living centers tend to emphasize development of independent/complex and social skills of disabled individuals in a non-treatment setting so designed to capitalize on strengths and capabilities.

Limitations of the Study

There are a number of limitations to the present study that could limit the generalizability of results beyond the sample studied. The design employed was more rigorous in some ways than those previously reported.

The instruments used could possibly present serious threats to internal and/or external validity. Although test/retest reliability for the sample on the PMRS was high (.825), the ATDP represented only a .192 test/retest reliability across non-training segments of the study. Since the reliability of the ATDP was so low it is difficult to determine whether effects were true or simply random error which could be expected. Serious problems with any attitude measure or self reporting technique include the possibility of sensitization and demand characteristics (Wood, 1977). These two problems refer to the fact that the changes noted may have in actuality been brought about by the assessment process

itself, and not the treatment. The fact that the subjects were being assessed on attitudes may have sensitized them to examining and reevaluating their attitudes and subsequently changing what they reported on the measurement scales. Demand characteristics refer to cues available to subjects that may enable them to determine the "purpose" of the experiment. It is possible that the responses were influenced by what the subjects perceived as the expected or socially desirable responses. Indeed, as noted in the interviews, one of the subjects remarked that she would have liked to have known the "right" answers. The effect of repeating the same measures may have introduced a practice effect. In addition, the exposure to the same measurement four different times may have led the subjects to begin disliking the entire procedure, consequently influencing their responses in a negative direction. When asked at the end of the study how they felt about filling out the questionnaires, all of the residents mentioned that they were "tired".

Other confounding variables which may have had interactive or reactive effects on the reported measures may include the often varying levels of stress experienced by some of the subjects at the times of measurement. The treatment/training segment (Developmental Disability rotation) itself is usually considered to be much less stressful than some other rotations and may have

influenced scores in a positive direction. High stress levels may have influenced the immediate responses to testing procedures. One resident reported that she had been on call the night before one session in a very busy emergency room, and had two hours of sleep before getting up at 6:00 for morning rounds the next day. Most residents involved in on call in emergency room, or neonatal intensive care unit (NICU) reported exhaustion and high levels of stress. Their schedules were extremely busy and toward the end of the project they began to view the testing sessions as a nuisance. Although it was made clear to them that the evaluation being conducted was a programmatic evaluation, it is possible that they tended to view it as an evaluation of them personally, and may have resented the intrusion.

The design of the present study only allowed for assessing global changes that took place somewhere within the one month rotation and does not allow for specifying which particular experience or component of the rotation actually had the greatest influence on attitude scores.

Because of these inherent threats to internal and external validity, the results of this study should not be generalized beyond the sample of subjects. Further replication of the study would allow for making more firm conclusions based on the results of this study.

Suggestions for future research

The results of this study suggest that providing a one month rotation in developmental disabilities may influence separate components of residents' attitudes in different ways. The dichotomy between attitudes regarding the simple task factor (which changed positively) and the complex/social factors (which changed negatively) presents an interesting question for further research. Would the same results occur with a larger sample of the same population? Further replication may shed some light on whether or not this is a general trend. Increasing contact with handicapped persons in medical/rehabilitation settings is often undertaken with the goal in mind of changing or improving attitudes toward persons with disabilities. This assumption may be only partially correct; further empirical evidence is needed to determine which parts or components of "attitude" are amenable to change and those that are stable. It is important to distinguish those that change in a positive direction from those that change in a negative direction as a result of contact or exposure in a rotational setting.

Likewise, as this study suggests, it is possible to change prognostication and/or expectations regarding the acquisition of simple functional skills by exposing residents to a one month rotation. Can the same be accomplished for prognostication regarding social skills

and complex tasks? If so, what specific factors need to be included in the rotation to bring about these changes? At this point, there is a lack of empirical evidence that clearly indicates what these components may be.

It would also be useful to the field to continue the line of inquiry into the area of prognostication, moving beyond simply measuring this construct to correlating it with measurable/observable behavior. How do physicians and other professionals with an optimistic prognosis differ in their behavior (decision making, referral patterns, interactions, etc.) from professionals with a poor prognosis for disabled or handicapped children? It is also important that the efforts at evaluating training rotations for medical trainees or residents in the field of developmental disabilities continue to be refined. This information is crucial if the traditionally short amount of time a resident spends in this broad field is to be used most effectively and productively.

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Appendix A

Student initials _____
 Date _____

ATDP Scale - Form A

Instructions: Mark each statement in the left margin according to how much you agree or disagree with it. Please mark every one.

Write +1, +2, +3; or -1, -2, -3;
 depending on how you feel in each case.

+3	I agree very much	-1	I disagree a little
+2	I agree pretty much	-2	I disagree pretty much
+1	I agree a little	-3	I disagree very much

- _____ 1 Disabled people are often unfriendly.
- _____ 2 Disabled people should not have to compete for jobs with physically normal people.
- _____ 3 Disabled people are more emotional than other people.
- _____ 4 Most disabled persons are more self-conscious than other people.
- _____ 5 We should expect just as much from disabled as from non-disabled people.
- _____ 6 Disabled workers cannot be as successful as other workers.
- _____ 7 Disabled people usually do not make much of a contribution to society.
- _____ 8 Most non-disabled people would not want to marry anyone who is physically disabled.
- _____ 9 Disabled people show as much enthusiasm as other people.
- _____ 10 Disabled persons are usually more sensitive than other people.
- _____ 11 Severely disabled persons are usually untidy.
- _____ 12 Most disabled people feel that they are as good as other people.
- _____ 13 The driving test given to disabled persons should be more severe than the one given to non-disabled persons.
- _____ 14 Disabled people are usually sociable.
- _____ 15 Disabled persons usually are not as conscientious as physically normal persons.

ATDP Scale - Form A [cont.]

- ____16 Severely disabled persons probably worry more about their health than those who have minor disabilities.
- ____17 Most disabled persons are not dissatisfied with themselves.
- ____18 There are more misfits among disabled persons than among non-disabled persons.
- ____19 Most disabled persons do not get discouraged easily.
- ____20 Most disabled people resent physically normal people.
- ____21 Disabled children should compete with physically normal people.
- ____22 Most disabled persons can take care of themselves.
- ____23 It would be best if disabled persons would live and work with non-disabled persons.
- ____24 Most severely disabled people are just as ambitious as physically normal persons.
- ____25 Disabled people are just as self-confident as other people.
- ____26 Most disabled persons want more affection and praise than other people.
- ____27 Physically disabled persons are often less intelligent than non-disabled ones.
- ____28 Most disabled people are different from non-disabled people.
- ____29 Disabled people don't want any more sympathy than other people.
- ____30 The way disabled people act is irritating.

Appendix BPROGNOSTICATION ABOUT MENTAL RETARDATION SCALE*

Student's initials _____

Date _____

* From Mark Wolraich and Gary Siperstein, 1982.

Definitions

- (1) Normal intelligence - IQ 100-75 with no deficits in adaptive behavior.
- (2) Mild Mental Retardation - IQ 75-55 with one or more deficits in adaptive behavior.
- (3) Moderate Mental Retardation - IQ 55-40 with one or more deficits in adaptive behavior.
- (4) Severe Mental Retardation - IQ 40-25 with one or more deficits in adaptive behavior.
- (5) Profound Mental Retardation - IQ less than 25 with one or more deficits in adaptive behavior.

Instructions: Please select the lowest level of adult intelligence that you feel an individual must possess in order to perform each of these functions. Place the number which corresponds to the definitions on the facing page in the blank next to each function.

Example: 1 a. Can fly an airplane

PMRS Scale [cont.]

- _____ is independent in dressing
- _____ is independent in toileting
- _____ is able to enter into a marriage contract
- _____ drinks from a cup unassisted
- _____ cooks a meal unsupervised
- _____ is capable of raising children
- _____ is able to find way in unfamiliar surroundings
- _____ is able to use a lock and key
- _____ can verbally indicate symptoms to a physician when ill
- _____ is capable of keeping and balancing a checkbook
- _____ uses utensils when eating (knife, fork, and spoon)
- _____ does own laundry
- _____ makes change for a dollar
- _____ tells time
- _____ can have discrete intimate relationships with the opposite sex
- _____ fills out job applications
- _____ communicates using understandable oral language
- _____ uses public transportation independently
- _____ recognizes traffic and exit signs
- _____ can independently schedule daily activities
- _____ uses a pay phone
- _____ can choose appropriate clothes to wear
- _____ is capable of following national news events
- _____ acts appropriately toward strangers
- _____ sustains a friendship with another person
- _____ anticipates hazards appropriately
- _____ is able to play baseball
- _____ is able to wash hands and face independently
- _____ can live unsupervised in an apartment
- _____ can live in a supervised apartment
- _____ can live in a group home
- _____ can live in an institution for the mentally retarded
- _____ can work in competitive employment
- _____ can work in supervised employment (sheltered workshop)
- _____ incapable of any productive employment
- _____ can attend a daily activities center

Appendix C

INSTRUCTIONS FOR ADMINISTERING THE QUESTIONNAIRES:

For the next twenty minutes or so I will be asking you to fill out two brief questionnaires. The first is called the PMRS Scale (Prognostication About Mental Retardation Scale) developed by Wolraich and Siperstein, 1982. We would like to know in general what level of intelligence you feel an individual needs to perform certain tasks or functions as an adult.

- (1) Please put your initials and today's date on the front page.
- (2) Please keep in mind that all of your responses will remain confidential and will not be compared with anyone else's responses.
- (3) Read the definitions on page two (2) of the questionnaire.
- (4) After you have read the definitions, please read the instructions for completing the form on page three (3), and read the example given.
- (5) When filling out the questionnaire, please answer each question by giving your initial impression or feeling. Do not allow previous answers to influence other answers. It is not necessary to try to be consistent.
- (6) Remember to give your impression of the LOWEST level of adult intelligence necessary to perform each task or function.
- (7) When you are finished please return the questionnaire to me.
- (8) Do you have any questions?

The second questionnaire is one called the ATDP Scale (Attitudes Toward Disabled People) developed by Yuker, Block, and Campbell. For purposes of this questionnaire, disabled persons are those who are disabled mentally or physically in some way (unless otherwise specified).

Please read the directions and the answer key. Answers should range from a +3 (I agree very much) to a -3 (I disagree very much). Please give your initial

Instructions [cont.]

reaction and do not try to let one answer influence another. All responses will remain confidential, and will not be compared to any other student's responses.

- (1) Put your initials and today's date at the top of the form.
- (2) Please answer all the questions.
- (3) When you are finished, return the questionnaire to me.
- (4) Do you have any questions?

Thank you for your time &
cooperation.

We ask that throughout the study you do not
discuss the questionnaires with others.

Appendix D

PARTICIPANT'S CONSENT FORM

I agree to participate in the study sponsored by the Kansas University Affiliated Facility regarding the effect of a one month rotation in developmental disabilities on attitudes, prognostic impressions, referral patterns and consumer satisfaction of residents. I have received an explanation of the nature of the study and time requirements on my part and I understand that I may withdraw from the study at any time without prejudice.

I also understand that all responses to questionnaires and other demographic information needed in the study will remain confidential and anonymous.

Name: _____

Date: _____

Appendix EPEDIATRIC CORE CURRICULUM
1983-1984Topics

---August 1983---

Adolescent Development
Child Abuse
Common Problems in the Adolescent Pt.
The Pregnant Adolescent
Adolescent Gynecology
Iron Poisoning
Theophylline and Use of Clinical Kinetics

---September 1983---

Aspirin and Acetaminophen Poisoning
Pediatric Clinical Pharmacology of the Pencillins
Basic Hemodynamic Principles-Part I
Basic EKG
Basic Pulmonary Physiology-Part I
Pediatric Code Blue Review
Pediatric EKG's
Basic Pulmonary Physiology-Part II

---October 1983---

Basic Pulmonary Physiology-Part I
Fetal Circulation
Shock
Bedside Physiologic Monitoring
Evaluation of Cyanosis in the Newborn
Congestive Heart Failure
Transitional Circulation/PFC
Respiratory Failure-Part II

Pediatric Core Curriculum, 1983-1984 [cont.]

Topics

---November 1983---

Respiratory Failure-Part I
 Hemodynamic and Clinical Signs of Common Congenital Heart
 Defects--VSD, ASD, TOFG, TGA, AS - Part I
 Hemodynamic and Clinical Signs of Common Congenital Heart
 Defects--VSD, ASD, TOFG, TGA, AS - Part II
 Clinical Uses of the Echocardiogram
 Workup of the Child with Systemic Hypertension
 Pediatric Core Curriculum, 1983-1984 [cont.]
 Evaluation of a Child with a Heart Murmur - Part I
 Evaluation of a Child with a Heart Murmur - Part II
 Neonatal Cardiovascular Emergencies PSVT, Ductus
 Dependent Defects, TGA - Part I

---December 1983---

Neonatal Cardiovascular Emergencies - Part II
 The Breastfed Infant
 Preventing & Solving Common Breastfeeding Problems
 Normal Nutrition
 Patient Relations
 Health Care Administrations

---January 1984---

Nutrition in Chronic Diseases
 Enteral and Parenteral Nutrition
 Nutrition for the Low Birthweight Infant
 Evaluation and Managmeent of Sexual Abuse
 Dealing with Sudden Death in a Child

---February 1984---

Evaluation and Management of C.P.
 Enteral/Parenteral Nutrition
 OT/PT Services for the Developmentally Disabled
 OT/PT Services for the Developmentally Disabled
 Pediatric Dentistry
 Oral Diagnosis/Oral Pathology
 Pediatric Gastroenterology

Pediatric Core Curriculum, 1983-1984 [cont.]

Topics

---March 1984---

Pediatric Gastroenterology x 2
Pediatric Gastroenterology x 2
Family Functioning with a Member who has a Developmental
Disability
Curriculum Revision

---April 1984---

Antimicrobial Therapy and Prophylaxis
Laboratory Approaches in Pediatric Infections
Infections of the Central Nervous System
Urinary Tract Infections
Infectious Diarrhea
Nosocomial Infections and Infection Control
Congenital and Perinatal Infections

---May 1984---

Sepsis and Septic Shock
The Child with Frequent Infections and Infections in
Children with Altered Host Defense
Skin Disease in the Newborn
Common Skin Problems
Dermatologic Sexuality
Inherited Skin Disorders
Skin Growth and Malformations

---June 1984---

DSM III, Diagnosis and Classification
Prenatal Counseling, Behavior Problems, Accident Prevention
Medical Compliance with Acute and Chronic Diseases
Developmental Assessment, Child Development
Toileting, Enuresis, Encopresis
School Problems; Habit Disorder, Fears
Securing Services for Handicapped Children
Hyperactivity

Pediatric Core Curriculum, 1983-1984 [cont.]

Topics

---July 1984---

Psychological Assessment of Children and Youth
Learning Disabilities



October 14, 1983

Dear Colleague,

As part of our efforts to improve the quality of training provided to interns who elect to participate in the one month rotation in developmental disabilities, the University of Kansas Affiliated Facility and the Children's Rehabilitation Unit are conducting an ongoing evaluation of the training program currently provided.

We would like to ask your assistance in helping us measure the effectiveness of the program. During the next few months each of you will be requested to respond to a few questionnaires regarding your impressions and attitudes toward individuals with developmental disabilities. In addition, we will be examining overall referral patterns and consumer satisfaction data as part of our ongoing evaluation of the program.

We anticipate that the time and effort on your part in assisting us in this process will be minimal. We are planning four brief sessions with you, which will take approximately twenty minutes each, over the next ten months. Each session can be scheduled so as not to interfere with your daily activities.

We hope that you will participate in our study and look forward to working with you. If you have any questions or would like further information about the project please feel free to call Linda Backus at (913) 864-4950.

Sincerely,

Linda Backus - KUAF/Lawrence

Sarah McCammon - CRU