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UNIVERSITY OF ALBERTA

ATTITUDES TOWARD DISABLED PEOPLE

BY

TATIA M. C. LEE-CHAN

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND
RESEARCH IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR
THE DEGREE OF

MASTER OF EDUCATION

IN

SCHOOL PSYCHOLOGY

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

EDMONTON, ALBERTA

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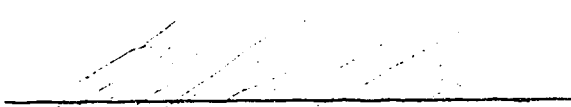
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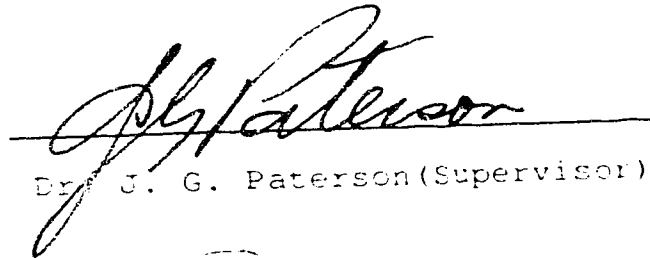
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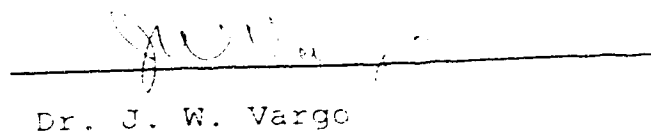
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The undersigned certify they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled Attitudes Toward Disabled People submitted by Tatia M. C. Lee-Chan in partial fulfilment of the requirements for the degree of Master of Education in School Psychology.


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ABSTRACT

The combined effect of exposure to accurate information about and contact with disabled people on attitudes toward people with disability was examined. All second, third, and fourth year full-time occupational therapy students at the University of Alberta were invited to participate in the study. Their attitudes toward disabled people prior to (pretest) and after (posttest) attending the formal occupational therapy program at the university were measured by the Attitudes Towards Disabled Persons Scale - Form A. It was hypothesized that level of occupational therapy training, gender differences, age differences, and previous experience with disabled people would have no significant effect on attitudes toward disabled people. A causal-comparative and a retrospective pretest-posttest design were employed to test the hypotheses.

One hundred and forty-four subjects participated in this study. The findings indicated that the posttest scores were significantly higher than the pretest scores, but the posttest scores of students at various levels of training did not show any significant

differences. A positive non-linear relationship between the level of occupational therapy training and attitudes toward disabled people was postulated. Exposure to accurate information about disability during the first semester of the second year of occupational therapy training played a significant role in initiating the observed attitude change. Subsequent opportunities of exposure to more information regarding disability and contact with disabled people seem to have operated to maintain the positive attitudes of the students while they progressed through the training. In this study, female occupational therapy students scored significantly higher than their male colleagues in the posttest. Age differences and previous experience with disabled people did not seem to exert any significant effect on occupational therapy students' attitudes toward disabled people.

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CHAPTER I

INTRODUCTION

Advancement of medical knowledge and technology continues to save human lives threatened by conditions once thought to be incurable. Some examples are cerebral palsy, spina bifida, and cerebral vascular accident. This implies a continuous increase in the number of surviving disabled people (Bray, 1978) with the result that their successful social integration becomes a major issue and an ultimate goal of rehabilitation.

Most disabled people want to be viewed as a part of mainstream society, not as a separate minority. The desire of disabled individuals to participate fully in society is aptly reflected by the following poem written during the International Year of Disabled People,

"So don't forget us after this year
Just understand us because we are here
Help us indeed but do not pity
Because we only want to be part of the community"
(Turner, 1981)

The barriers hindering the successful social integration of disabled people are complex, but there is a general consensus among researchers that negative attitudes toward disabilities is one of the most significant factors (Wilgosh & Skaret, 1987). Indeed social science literature itself provides abundant evidence of pejorative attitudes toward persons with disabling conditions (Yuker & Block, 1979). Negative attitudes of the non-disabled populations toward the disabled population have been well documented (Mauer, 1985; Mitchell, Hayes, Gordon, & Wallis, 1984; Wetstein-Kroft & Vargo, 1984; Wright, 1983; Bender, 1981; Westwood, Vargo, & Vargo, 1981; Bowe, 1978; Hanssen & Duffield, 1976; Harasymin, Horul, & Lewis, 1976; Pulton, 1976; Richardson, Ronald, & Kleck, 1974; Kutner, 1971; Harasymin, 1971; Doob & Ecker, 1970; Tringo, 1970).

Negative attitudes toward disabled people reflect sexual, social, educational, and vocational discrimination and prejudice (Westwood et al., 1981). These negative attitudes encourage isolation and segregation of the disabled from the rest of the population (Safilios-Rothschild, 1970). Perception,

thought, and feelings toward disabled people steered along these negative lines tend to emphasize disabilities to such a degree that positive values remain hidden (Wright, 1988). In fact, these active prejudicial and negative attitudes may be more an impediment to disabled people than their disabilities (Vash, 1981; Schneider & Anderson, 1980) and an hindrance to full realization of human potential (Fouch, 1986; Roeher, 1961). Furthermore, the distorted social interaction between able-bodied and disabled people may eventually lead to maladjustment among the disabled (Mitchell et al., 1984), which ultimately limits the successful rehabilitation, integration, and independence of disabled people in the community (Antonak & Livneh, 1988).

The devastating effects of prejudice are effectively communicated by LaBar, a disabled person:

"The biggest single barrier I have encountered is one of attitude, society's attitude towards me, my attitude towards both society and myself...I am suddenly considered by both society and myself to be an unequal, unacceptable and inferior human being who needs to be protected, controlled and

segregated..." (LaBar, 1976, p.403)

Psychologically, socially, and legally, the disabled throughout history have been equally mistrusted, equally misunderstood, mistreated, and impoverished (Rioux, 1981). Rectification of society's negative attitudes toward people with disabilities is urgently required to create new opportunities for the disabled and society.

Strategies for Positive Attitude Acquisition

The subject of attitudes toward disabled people has received wide attention (Kirchman, 1987). There has been considerable research on identifying strategies for modifying the negative attitudes toward people with disabilities. So far two methods have gained much attention. They are:

- (1) exposure to accurate information about the ability and potential of disabled people; and
- (2) contact with disabled people.

Anthony (1972) reviewed studies using a combination of approaches under different conditions. He concluded that positive changes were most consistently revealed

when both information and contact were used in combination.

Some investigators have attempted to examine the combined effect of accurate information about and experience with disabled persons on attitudes toward disabled individuals. Positive findings were reported (Jones, Sowell, Jones, & Butler, 1981; Lazar, Gensley, & Orpet, 1971). In contrast, Simpson, Parrish, and Cook's (1976) study of attitude modification, using the two strategies, failed to yield significant results. The findings on the combined effect of accurate information about and contact with disabled people on attitude modification are presently inconclusive.

Research Problem

It is these contradictory findings on which the present study is based. The author examined the combined effect of exposure to information about and contact with disabled people on positive attitude acquisition. The population studied was occupational therapy students at the University of Alberta.

Research Design - An Overview

All full-time, second, third, and fourth year occupational therapy (OT) students attending the University of Alberta were invited to participate in the study. The aims of this study were explained to all potential subjects and their verbal consent to participation was obtained prior to the administration of the questionnaire. Anonymity of the subjects and their right to withdraw from participation were guaranteed.

The independent variables are: level of OT training, gender differences, age differences, and previous experience with disabled people. The dependent variable is OT students' attitudes toward disabled people measured by Form A of the Attitude Toward Disabled Persons (ATDP) scale. The ATDP scale, developed by Yuker, Block, and Youngg (1966), consists of 30 Likert-type attitude statements. These statements suggest that people with disabilities are either similar to, or different from, non-disabled people. When a difference is perceived, it is deemed negative. Scores on the ATDP scale can range from 0 to 180 with higher scores representing more positive

attitudes toward disabled people.

A six-page questionnaire (Appendix 1) was administered to all subjects. The meaning of disability was given on the front page of the questionnaire so as to provide a standardized definition of the term.

A retrospective pretest-posttest design was used. All subjects were required to complete two sets of the ATDP scale. The first one required them to recall their responses prior to attending the program (pretest score), and the second one was to tap their present responses (posttest score). The analysis of variance (ANOVA) and the Scheffe procedure were used to test the significance of the difference in relation to the seniority in the program. In addition, t-tests were employed to examine the difference between the pretest and posttest ATDP scores of the participants.

Null Hypotheses

1. There would be no significant difference in the ATDP scores among the OT students at different levels of training.
2. There would be no significant difference between the

pretest and the respective posttest ATDP scores of OT students at each level of training.

3. There would be no significant difference in the ATDP scores between the male and the female OT students.
4. There would be no significant difference in the ATDP scores among OT students at different ages.
5. There would be no significant difference in the ATDP scores between the OT students who have and do not have previous experience with disabled people.

CHAPTER II

LITERATURE REVIEW

In this chapter, the author presents a comprehensive review of the literature dealing with past and current attitudes toward disabled people. The theoretical framework of the study is derived from the understanding of the origins and the operating mechanisms of the negative attitudes toward people with disability. Different attitude modification strategies are also examined.

The terms 'impairment' and 'disability' often cause confusion. In this study, the definitions in the International Classification of Impairments and Disabilities (WHO, 1980) were adopted.

"An impairment is any loss or abnormality of psychological, physiological or anatomical structure or function." (p.47)

"A disability is any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being."
(p.143)

Disability and disabled people are used as general terms to provide a more complete portrayal of the situation.

Attitudes - An Understanding of the Term

Attitudes are complex, multi-component structures which have a specific social object as a referent, e.g., people, situations, events, ideas (Antonak & Livneh, 1988). Although attitudes are neither necessary nor sufficient causes for behaviors (Triandis, 1971), they consist of cognitive, affective, and behavioral intentions (Bohlander, 1985). These intentions determine what people think and feel about the attitude object (Triandis, 1971), which eventually exert both a directive (target-related) and a dynamic (energetic) influence on behaviors (McGuire, 1969). Therefore, attitudes may be interpreted as an affective or evaluative predisposition of favorable or unfavorable reaction to a class of objects (Ajzen & Fishbein, 1980). People's perceptions of, and hence their reactions to objects, reflect their attitudes toward the objects. Negative attitudes lead to negative reactions, which mean avoidance and rejection.

Positive attitudes elicit positive reactions, which indicate acceptance (Yuker, 1965).

Fishbein and Ajzen (1975) provided a useful framework for understanding attitudes. They have suggested that belief about object X influences attitudes toward object X which influences intentions with respect to object X and ultimately influences behaviors with respect to object X. Attitudes should be distinguished from beliefs in that attitudes refer to people's favorable or unfavorable evaluations of an object; beliefs represent the information they have about the object (Fishbein & Ajzen, 1975).

Negative Attitudes toward Disabled People

Insensitive treatment and negative attitudes toward disabled people are not new. In the most primitive societies, disabled individuals were abandoned and left to fend for themselves (Gerston, 1970). More advanced societies developed complex ideologies, attributing the origin of diseases to magic and to the wills of the gods or to the influence of devils. The ancient Hebrews saw illness and physical defects as the mark of a sinner, and in the middle ages

disabled individuals, particularly the mentally ill, were seen as possessed by the devil (Warnemuende, 1986). These beliefs in Judaeo-Christian cultures view physical and mental disorders as punishments inflicted by God for disobeying His laws (Vargo, 1989). The triad of sin, punishment, and disability identified the source of the disabled person's suffering as being attributable to either a personally committed evil act or to an ancestral wrongdoing (Livneh, 1982). Disability was viewed as the consequence of a sinful and evil act - "a twisted mind in a twisted body". (Livneh, 1982, p.340)

As society became more industrialized, disabled people became more accepted into mainstream society (Jordan & Friesen, 1967) because of modern cultural factors (Schneider & Anderson, 1980). Nevertheless, social consciousness is more developed than in the past, but it is still generally agreed that contemporary society accords the disabled a sympathetic and charitable status, rather than one of equality (Roeher, 1961). Devaluation of the person and negative discrimination in work and social life are frequent. The primitive expression of fear of those who are

severely disabled, as expressed by aversion, hostility, and direct avoidance, is still a part of our social values (Wright, 1960).

The Origins

Livneh (1982) provides a comprehensive review of the origins of negative attitudes toward disabled people. He claims that the origins are complex and intertwined and do not easily lend themselves to study.

Fishbein and Ajzen (1975) suggest that attitudes have consistency, are predispositions, and are learned. Development of negative attitudes toward people with disability, therefore, should be traced to the socialization process that begins in childhood.

Childhood fear. Roeher (1961) asserts that negative attitudes toward disabled people originate in early childhood. Richardson, Hastorf, Goodman, and Dornbusch (1961) showed that children of various cultures consistently preferred the able-bodied child to children with various physical disabilities, when asked to rank pictures (Richardson, Hastorf, Goodman & Dornbusch, 1961). Centers and Centers (1963) indicated that a significantly greater number of rejecting

attitudes were expressed toward the students with amputations by their classmates than were expressed toward other able-bodied children in the class. Forer (1956) studied the social status of the physically disabled and concluded that they were less well accepted in integrated classes at the elementary school level.

These findings may be explained by the many expectations, feelings, beliefs, and interpersonal behavioral tendencies acquired by people during their early years (Gerber, 1977; Kogan, Henker, Hen-Tov, Lewis, & Lewis, 1966). Children's understanding of disablement increased dramatically at about ages three to five (Weinberg, 1978a; Jones & Sisk, 1967). The impact of child-rearing practices and parental emphasis on the importance of health and normality on the growing child's belief and value system (Livneh, 1982) is apparent. Observational learning and multiple modelling (Liebert, 1977; Bandura & Walter, 1963) of others' negative reactions toward disabled people (Liebert, 1977) and inaccurate portrayals of disabilities by the media (Vargo, 1989) encourage children to develop anxiety-laden beliefs and pseudos-

beliefs concerning the etiology of a variety of disabilities. This establishes a foundation of misunderstanding by able-bodied children toward their exceptional peers (Gerber, 1977).

Sociocultural conditioning. Pervasive sociocultural conditioning continues to reinforce the false beliefs acquired about disability in childhood. Prevailing social and cultural norms, standards, and expectations place high stress on the body beautiful, body whole, health, athletic prowess, and personal productiveness (Roessler & Bolton, 1978; Wright, 1960; Gellman, 1959). These standards portray the disabled as social deviants who are outsiders, offenders, and different from able-bodied people (Barker, 1948). As explained by the Michigan group dynamics theory, which stresses 'discrepancy' and 'group norm' (Zimbardo Ebbesen, & Maslach, 1977), a disability signals differences which threaten the uniformity of the group norm. Disabled people, therefore, are socially excluded from the group.

Spread phenomenon. The disability of a person also tends to negatively distort other people's perception of that disabled individual's other

attributes. This distortion operates under the mechanism of 'halo effect', or 'spread phenomenon' (Wright, 1960) due to the pervasive negative correlates of a pure deviance (Thoreson & Kerr, 1978; Heider, 1958). The disability becomes the distinctive characteristic masking other traits and potentials of the disabled person.

Social ostracism. The fear of social ostracism encourages further isolation of disabled people. Able-bodied people's fears that association with disabled persons may be seen as an implication of their psychological maladjustment (Siller, Chipman, Ferguson, & Vann, 1967) are among the main operating mechanisms of negative attitudes toward disabled people. Furthermore, if disability is linked with sin and punishment, as in Judaeo-Christian cultures, the able-bodied people may be fearful of imminent punishment by association (Gellman, 1959).

Unfamiliar situation. Unfamiliar situations can create anxiety and confusion (Hebb, 1946; Heider, 1944; Heider, 1958). During the initial interaction with a disabled person, the able-bodied person is faced with an unstructured situation in which most socially

accepted rules and regulations for proper interaction are not well-defined (Livneh, 1982). Based on Festinger's (1975) cognitive dissonance theory, such a unfamiliarity presents an incongruent cognitive gestalt, which may cause withdrawal from the situation so as to reduce inner tensions experienced within an individual's own cognitive system (Williams, 1989). This is similar to the stranger relationships described by Wright (1988). Kleck and his associates (1968, 1966) concluded in their studies that able-bodied people felt uncomfortable interacting with disabled individuals and therefore maintained a greater physical distance and terminated the interaction sooner than when interacting with a non-disabled person. Thus, the lack of experiential contact and exposure to people with disabilities appears to relate to able-bodied individuals' avoidance of disabled people in work or social interaction.

Attitude Change

Based on Fishbein's and Ajzen's (1975) framework of attitude formation, negative attitudes are a function of beliefs about that object. These beliefs

are derived from information, accurate or otherwise. The continuous and dynamic attitude-belief relationship implies that attitudes can only be changed with new information or beliefs (Ajzen & Fishbein, 1980). This is concurrent with the Yale Attitude Change Theory which suggests that attitude modification requires a change in beliefs brought about by introducing new information via persuasive communication to promote learning (Zimbardo et al., 1977). Negative attitudes toward disabled people appear to have stemmed from faulty information in the belief system about disability, information originating from irrational childhood fears of disabled people, pervasive sociocultural conditioning, the 'spread phenomenon', and the fear of social ostracism. The lack of social exposure to disabled individuals further fosters these negative attitudes by creating anxiety and confusion when able-bodied people are interacting with individuals who are disabled.

The root of negative attitudes toward disabled people appears to arise from misconceptions about and the lack of opportunities to interact with disabled people. It, thus, seems logical to postulate that

effective attitude modification must begin with one's belief system. The focus must be on providing a belief system with correct information regarding rational explanations of disabilities, as well as about the functional capabilities of disabled people. In addition, increased contact with disabled people must be encouraged to reduce the psychic tension and anxiety occurring in the interaction between the two groups.

Accurate Information

'Accurate information' refers to the medical, as opposed to the mythical or fictitious, explanations of disabilities. It also means focusing on the functional capabilities and potential of disabled people. The importance of accurate information about disability in attitude modification is suggested by Roeher (1961). When people cannot find factual answers, they fabricate answers and distort information to reinforce an attitude they have already established (Goldberg, 1961). This assertion is concurrent with the findings of Bartlett's (1932) study which showed that when subjects read a story that does not fit with their own schema, they will exhibit a powerful tendency to

distort the story to make it fit. Furthermore, as reflected in Florian's (1978) research, a large percentage of a sample of employers who did not possess specific knowledge of the actual output and performance of disabled people tended to make inaccurate assumptions about the work habits of people with disabilities. Cole and Bragman (1983) point out that abled-bodied people's lacking information about disability may lead to their uncomfortable feelings when interacting with disabled people.

The role of active dissemination of information about various disabled groups and their respective potential through educational programs, such as role plays, film or slide shows, and disability simulation (Wetstein-Kroft & Vargo, 1984; Westwood et al., 1981), in enhancing a more positive attitude toward disabled people has been widely discussed. Roeher (1961) suggests that having accurate information about the competency of disabled people can contribute significantly to the modification of negative attitudes toward people with disability. This contention is supported by Golin (1970) who reported that negative stereotyping of disabled people was reduced by

increasing the amount of information about the disability. In Ibrahim's and Herr's (1982) study, they found that exposure to information about the disabled at a cognitive level is effective in creating the conditions necessary to change attitudes in a positive direction. It seems that accurate information does play a significant role in altering negative attitudes toward the disabled; and the public's deep-rooted negative perceptions of disabled people may be supplanted by appropriate education programs.

Contradictory findings are found in the Hafer and Narcus study (1979). Subjects were shown a 37-minute color movie portraying the lives of individuals with cerebral palsy in an English residential home. The educational film, designed to advance positive attitudes toward disabled people, in fact promoted initially negative attitudes toward disabled people. In this case, the content of the movie may be one of the confounding variables. In addition, the subjects' exposure to the disabling condition without the opportunity to interact with disabled individuals may create psychic tension initially leading to a negative generalization toward all disabled people found in this

study. Horne (1988) suggests that an attitude change is more likely if the viewing is followed by activity, i.e. interaction with disabled individuals.

Contact

'Contact' refers to interpersonal interaction in social, educational, and work situations. The amount of previous contact with disabled people is thought to enhance positive attitudes toward disabled people (Schneider & Anderson, 1980). Increased exposure to disabled people may eventually decrease the tension and discomfort felt by many people when in the presence of disabled people (Westwood et al., 1981). Roeher (1961) suggests that familiarity with disabled people helps diminish unconscious fears of able-bodied people. In addition, Palmerton and Frumkin (1969) suggest that the amount of contact may predict both the probability of attitude change and the likelihood of positive or negative action toward disabled people.

The role of contact in attitude modification is further supported by Rapier, Adelson, Carey, and Croke (1972) and Evans (1976). They found that, in the presence of positive reinforcement, able-bodied people

positively changed their attitudes toward disabled people. Weinberg (1978b) concluded that the stereotype of disabled people as different diminished as contact between able-bodied and disabled people was intensified. Wright (1960) also contends that positive attitudes are developed through repeated contact with handicapped persons. Begab (1968) indicates that more positive attitudes toward the disabled is envisaged as a result of experience with disabled individuals, which produces superior levels of knowledge and relatively. Lazar, Orpet, and Demos (1976) claim that students' contacts with disabled individuals may account for the positive attitude changes demonstrated in their study. Anthony (1969) reported that contact with disabled people play a significant role in changing the attitudes toward people with disability. Other studies based on the 'contact model' of attitude change also suggest that contact improves attitudes toward disabled people (Esposito & Reed, 1986; Furnham & Gibbs, 1984; Ladd, Munson, & Miller, 1984; Towfighy-Hooshyar & Zingle, 1984; Esposito & Peach, 1983; Voeltz, 1982, 1980; Handlers & Austin, 1980; Ballard, Corman, Gottlieb, & Kaufman, 1977; Sheare, 1974).

Despite the positive findings cited above, a review of other studies reveals contradictory findings. Some studies suggest that contact produces no significant changes in attitudes (Asmus Jr. & Galloway, 1985; Barton, Snart, and Hillyard 1985; Sandberg, 1982; McHale & Simeonsson, 1980; Cole, 1971; Granofsky, 1956), and others report that attitudes toward disabled people are more negative as a result of contact (Gottlieb, Cohen, & Goldstein, 1974; Gottlieb & Budoff, 1973; Cobun, 1972; Goodman, Gottlieb & Harrison, 1972). These insignificant or even negative findings may be explained by the impact of the conditions of the contact. Contact with a disabled person is more likely to produce an attitudinal shift if the two individuals share equal status, are working toward common goals, experience more intimate rather than casual contact, and experience a pleasant or rewarding contact (Yuker, 1983).

Given that the conditions of contact are controlled, according to Yuker (1983), increased contact alone may still not be sufficient for attitude modification. Contact without accurate information about disability may increase the psychic tension

during the interaction. The anxiety arising from unfamiliarity may further reinforce the pre-existing faulty beliefs. Harper and Wacker (1985) asserts that interaction with disabled people does not appear to be a sufficient attitude modifier. Proper supports are necessary or the shift in attitude may be negative.

Combined Strategies

While some discrepancies exist when information or contact is considered separately as a attitudinal-change agent, the combined effect of accurate information and increased contact appears to yield the most positive result in attitude modification. Berrol (1984) reported that contact and information working together is a powerful attitude change agent. Rusalem (1967) reported a significant change in the attitudes of a group of adolescent girls, who were initially identified as less positive, when they were provided information about the disability and opportunities to interact with the disabled.

Anthony (1972), in a comprehensive article on attitude change, concluded that :

"The attitudes of nondisabled persons toward

persons with a disability can be influenced positively by providing the nondisabled individual with an experience which includes contact with disabled persons and information about the disability. Neither alone is a sufficient, significantly and consistently, to have a favorable impact on attitudes toward disabled persons. It appears that, without information, contact has only a limited positive effect or may even reinforce existing negative attitudes. Similarly, information without contact increased knowledge about the disability only but appears to have little or no effect on attitudes." (p.123)

The combined effect of accurate information and contact with disabled people is apparent. The former serves to rectify the misconceptions of disability by providing new information to the belief system, leading to an attitude change; whereas the latter serves to reinforce the validity of the information acquired and to reduce the initial contact anxiety between able-bodied and disabled people.

Rehabilitation

The decade of the 1990's marks further improvement in the standard of living of the able-bodied population in general. In contrast, most disabled people continue to live in poverty resulting from negative discrimination from society. Thus, the true challenge for rehabilitation is not the development of new technology and treatments, but the overcoming of attitudinal barriers to interaction and relationships through understanding and acceptance (Roush, 1986).

Rehabilitation professionals are the chief providers of information regarding disability. Their attitudes have an enormous impact on adjustment to and attitudes toward disabled people (Antonak & Livneh, 1988). The implications of health care workers' negative attitudes toward disabled people and their effect on the rehabilitation process are not very encouraging (Kohrman, 1986; Berdie, 1951; Snyder, 1946). Narrow viewpoints regarding disability are generated if rehabilitation professional's attitudes toward disabled people are negative (Altman, 1981).

McDaniel (1969) suggests that the attitudes of

health care workers are more important in determining the disabled persons' response to treatment than any other force. If they view their disabled clients as incapable of decision making and independent thinking or planning, these unconscious attitudes may impede the rehabilitation process through such things as an excessive need to nurture (Versluys, 1983). This may lead to the clients' overdependence on the professionals. Furthermore, these negative attitudes often shape the development of disabled persons and narrow their roles in society (Benham, 1988).

While attitudes toward the disabled appear to be an integral component in rehabilitation (McDaniel, 1976), the attitudes of professionals in rehabilitation toward their clients have not been thoroughly examined. Among the few studies that ascertain rehabilitation workers' attitudes toward disabled people, equivocal findings have been reported. Several researchers suggest the existence of negative attitudes among health care professionals toward their disabled clients (Antonak & Livneh, 1988; Wolraich, 1982; Dufree, 1971; Begab, 1970; Belinkoff, 1960). In contrast, some other investigators propose that rehabilitation workers

appear to have more positive attitudes toward disabled people than does the general public (Eberly, Eberly, & Wright., 1981; Kleck, 1968; Kleck, Ono, & Hastorf, 1966). The significant impact of rehabilitation workers' attitudes on the success or failure of the rehabilitation process implies the need for further investigation in this area.

Occupational Therapy

Occupational therapists are among the many health related professionals whose attitudes toward disabled people are particularly crucial in the rehabilitation process. Since the early days of the profession, occupational therapists have endorsed a humanistic and holistic philosophy that values individual choice, engagement in productive activity, and the right to self-fulfilment and equal opportunity for each individual (Bruce & Christiansen, 1988). Inherent in this philosophy is a clear decrrier of prejudicial attitudes toward people with disabilities. This implies that therapists should have positive attitudes, acquired during their professional training, toward their disabled clients.

Professional education for OT students consists of two components - formal academic education within an institution, and a period of practical clinical training in various clinical or community settings (Sabari, 1985). The goal of the program is the students' acquisition of certain ideas, skills, values, and attitudes which enable them to be competent practitioners after graduation (Bucher & Stelling, 1977; Gartner, 1976; Jarvis, 1983; Simpson, 1979). Whereas occupational therapy educators continually strive to maintain high quality academic and clinical preparation for entry into the profession (Sabari, 1985) through routine assessment of students' acquisition of knowledge and skills, examination of changes in values and attitudes is less frequent. This may be due to the difficulty inherent in measuring and describing these latter qualities (Barris, Kiehlhoffer, & Bauer, 1985). In fact, ascertaining of attitude is important because its positive relationship with professional competence (Wright, 1960) serves to give insight into students' progress in their training.

Jacobs (1968) said that learning can be thought of as a change in a student's way of thinking, feeling,

and acting due to experiences. In OT education, these experiences include exposure to accurate information about and contact with disabled people offered in formal academic and clinical training. Accurate information of disabilities is delivered by accredited persons, professors, and clinical experts, an educational milieu persuasive enough, as suggested in the Yale attitude change theory (Zimbardo et al., 1977), to rectify the faulty information about disability, if any, in students' belief system. Contact with disabled clients is carried out under conditions which are similar to the ones proposed by Yunker (1983). The emphasis of equal therapeutic rapport in the interaction between therapists and clients and the increased focus on client-centered treatment approaches imply the equal status of both parties working toward a common therapeutic goal. The more intimate rather than casual interaction resulting from the daily therapeutic contacts and the rewarding experiences envisaged as the rehabilitation progresses serve to provide favorable conditions for therapists to acquire positive attitudes toward disabled people. If the combined effect of accurate information and

increased contact does bring about a positive attitude change toward disabled people as postulated, i.e., accurate information rectifies the students' biased beliefs, and increased contact helps reduce the students' psychic tension and anxiety as a result of cognitive dissonance, one would expect to see OT students' attitudes toward disabled people changing positively as they progress through the professional education. This becomes the central issue to be examined in this study.

Some researchers have examined attitude change of OT students during the period of professional training. Estes and her associates (1990) reported that fourth-semester OT students demonstrated attitudes that were significantly more positive toward the disabled than first-semester OT students. Kirchman (1987) concluded in her study that attitudes of OT students toward disabled people were significantly more positive following formal instruction. In contrast, a study by Belinsky (1972) of OT students' attitudes toward disabled persons showed that senior OT students did not score significantly higher than freshman OT students on the ATDP scale. Differences in the design of curricula

studied may be one of the confounding variables. Furthermore, these contradictory findings may be explained by the researchers' failure to address the effect of some other variables on attitude change. These variables include gender subjects' previous experience of interacting with disabled people, gender differences, and age differences.

The effect of contact with disabled people on attitudes toward people with disability has been discussed. The relationships between gender and attitudes have appeared in many studies that used the ATDP scales (Yuker & Block, 1986). Yuker, Block, and Youngg (1966) suggest that female gender may be one of the factors fostering a positive attitude toward disabled people. This proposal has been supported in a study by Mitchell and his associates (1984), who found that female medical students were more positive toward physically disabled people than their male colleagues. The relationship between gender differences and attitude change is apparent. In contrast, the relationship between age and attitude is unclear, and no conclusive results have been identified (Yuker & Block, 1986).

CHAPTER III

METHODOLOGY

In this chapter, the design of the study is presented. Subject selection criteria are reviewed. The instrument used and the procedures for its administration are discussed. Finally, the delimitations and the limitations of the study are examined.

Design

A causal-comparative study was used to evaluate the combined effect of exposure to accurate information about and contact with the disabled on attitudes toward disabled people. The independent variables are: level of OT training, gender differences, age differences, and previous experience with disabled people. The dependent variable is the attitudes toward disabled people measured by the ATDP Scale - Form A (Yuker & Block, 1986, 1966). The operational definitions of some of the terms used in this study are as follows:

Accurate information - The knowledge regarding the medical pathology of disabilities and the

functional capabilities and potential of disabled people inherent in the OT curriculum at the University of Alberta.

Contact - The therapeutic interaction with disabled clients during fieldwork placements specified in the OT curriculum at University of Alberta.

Attitudes toward disabled people - The score of the ATDP scale - Form A.

The null hypotheses tested were: (1) There would be no significant difference in the ATDP scores among the OT students at different levels of training; (2) there would be no significant difference between the pretest and the respective posttest ATDP scores of OT students at each level of training; (3) there would be no significant difference in the ATDP scores between the male and the female OT students; (4) there would be no significant difference in the ATDP scores among OT students at different ages; and (5) there would be no significant difference in the ATDP scores between the OT students who have and do not have previous experience with disabled people.

Two kinds of design were used to test the proposed hypotheses. A between-groups and a retrospective pretest-posttest designs were employed. In the between-groups design, the posttest ATDP scores of subjects were classified according to their levels of professional training, namely second, third, and fourth year. In the retrospective pretest-posttest design, the subjects were requested to complete two sets of the ATDP scale - Form A. The first set required the subjects to recall their responses prior to attending the OT training (pretest score), and the second set was used to tap their present responses (posttest score). The retrospective pretest-posttest design was used because the impact of social desirability was less when utilizing the retrospective than a traditional pretest-posttest design (Howard, Millham, Slaten, & O'Donnell, 1981). Furthermore, retrospective pretest design was more sensitive to perceived attitudinal change (Perry, Apostol, Scott, 1987). In addition, Howard and his associates (1979) report that a retrospective pretest-posttest design works to counteract the tendency of type II error resulting from response-shift bias (Perry et al., 1987) pertinent to self-report measures.

Subjects

A convenience sample was used. All full-time, second, third, and fourth year OT students at the University of Alberta were invited to participate in the study. The subject selection criteria are presented in Table 1.

Table 1

Subject Selection Criteria

Age:	Non-specific
Gender:	Non-specific
Status:	Full-time student
Program:	Bachelor of Science in OT at the University of Alberta
Level of Training*:	Year Two, Three, and Four

*Since the completion of the pre-professional year is an admission criterion rather than part of the formal OT program, students in the pre-professional year (first year OT student) were not included in this study.

Method

Arrangement was made through the Faculty of Rehabilitation Medicine, Department of OT, for the subjects to be seen by the author during their class hours. While in their classes, the author read a standardized script (Appendix 2) which explained the aim of the study and the kind of participation required. Voluntary participation was sought and subjects' verbal consent to participation was obtained before data collection proceeded. Ethical issues pertinent to the use of human subjects have been considered. The study has gained approval from the ethical committees of the Department of Educational Psychology and the Faculty of Rehabilitation Medicine. Furthermore, the subjects were guaranteed the rights of participation and withdrawal during any stage of the study. Anonymity of the subjects was ensured, and they were not required to identify themselves in the study. Furthermore, the information they provided was kept confidential and was erased after the project was completed.

Instrument

The instrument used in the study was a six-page questionnaire (Appendix 1). The definition of disability (WHO, 1980) used in this study was presented on the first page. This was done to provide a standardized definition of the term for all the subjects. Page two consisted of questions aimed at collecting demographic information. The first set of the ATDP scale - Form A was on pages three and four. It was used to obtain the retrospective pretest scores. The second set of the scale for obtaining the posttest score was on pages five and six.

A written consent was obtained from Professor Yuker regarding the use of the ATDP scale - Form A in this study. A copy of his written consent has been presented in Appendix 3.

Antonak and Livneh (1988) give a very comprehensive description of the ATDP scale - Form A, which is summarised as follows:

The ATDP scale - Form A consists of 30 Likert-type attitude statements which suggest that disabled people are either similar to, or different from able-bodied persons. The items depict two types of statements -

characteristics of disabled individuals (e.g. personal, intellectual, emotional, and social) and treatment modalities (e.g. educational, vocational, social integration). The subjects are to express their agreement or disagreement with each item on a six point scale ranging from -3 [I disagree very much] to +3 [I agree very much]. No neutral response can be given. Subjects are requested to enter their numerical response in the space provided to the left of each item. Scoring of the ATDP scale (Appendix 4) requires careful consideration of the signs of the responses. The signs of the positively worded items are to be altered first before all responses are summed. Then the sign of this sum is reversed and a constant is added to eliminate any negative value. This set of operations provides scores which range from 0 to 180, with a high score indicating a positive attitude in each case.

A series of monographs (Antonak & Livneh, 1988; Yunker & Block, 1986; Block, 1974; Yunker, Block, & Young, 1970; Yunker, Block, & Young, 1966) discuss the reliability and validity of the scale. Some of the findings are presented as follows (Antonak & Livneh,

1988):

Test-retest reliability - + 0.79

Alternate - forms reliability - + 0.83 (Form A&B)

Split - half reliability - + 0.89

Content validity was ensured by undertaking an extensive literature review of statements describing disabled persons. The literature review was further evaluated by several psychologists who assessed the relevance of the extracted items for use in the scale (Yuker et al., 1970). Construct validity of the scale was assessed by examining the relationships of the scores of the scale to scores of many other variables. Convergent and discriminant validity were examined. The data provided by Yuker and Block (1986) show that correlations with measures similar to the ATDP scale are high while those with dissimilar measures are low.

According to Yuker and Block (1986), factor analysis was not employed in constructing the ATDP. The two types of items used in developing the scale, which can be considered to contribute approximately equally to the total score, were based on theory rather than upon factor analysis. Although there have been previous studies on the factor analyses of the ATDP

scale, the different factors identified due to the use of different methods make the results difficult to interpret. Nevertheless, Yuker and Block (1986) argue that the adequacy of the scale should be judged on the basis of the reliability and validity data.

Recent studies showed that the ATDP scale is susceptible to faking (Hagler, Vargo, & Semple, 1987; Vargo & Semple, 1984; Scott & Rohrbach, 1977; Vargo, Vargo, & Semple, 1981). Furthermore, other investigations have found that the scores on the ATDP scale to be influenced by social desirability (Feinberg, 1967). In order to answer to all these criticisms, Yuker (1986) suggests that the scale can be used in research as long as it is not employed under conditions in which the subjects have a high motivation to fake their answers, such as in screening situations for admission to a program or promotion. In the present study, as the scale is not used to reflect subjects' progress in the program nor is it employed as a screening device, it is then assumed that the subjects should have very low motivation to fake their answers. Anonymity of the subjects should help decrease the influence of perceived social

desirability.

Procedures

Group administration of the questionnaire was conducted. The author was present throughout the process. Objectivity and consistency of each group administration was ensured by standardizing all procedures and instructions.

The response rates are presented in Table 2.

Table 2

Response Rates

Year	No. of Students	No. of Participants	Rate
Two	77	66	85.7%
Three	62	43	69.4%*
Four	40	35	87.5%
Total	179	144	80.5%

*Participants in the first visit = 36 (58.1%)

Participants in the second visit = 7 (11.3%)

It was intended that the questionnaire be administered to all subjects within the same time frame. Unfortunately, due to the conflict of their class schedules, fourth year OT students were seen in December, 1991, prior to the Christmas break, whereas second year OT students were tested in January, 1992, after the Christmas break. As the subjects were not attending any formal instruction or fieldwork placement during the holiday, the time gap is assumed to have had minimal impact on the subjects' attitudes toward disabled people. Third year OT students were initially tested in December, 1991. Due to the relatively low response rate (58.1%), a follow-up visit was arranged in February, 1992. The response rate was increased to 69.4%. Nevertheless, readers are reminded of the fact that the relatively low response rate of year three students and the time gap in between the two visits might have brought an unknown bias to the sample, which could have confounded the findings of the study.

During the group administration of the questionnaire, instructions were given according to the standardized script (Appendix 2). The subjects were reminded to read the instructions on the questionnaire

and clarify any confusion. Definitions of words or terms used in the questionnaire were not to be elaborated. This is to ensure the ascertainment of the subjects' rather than the author's interpretation of the questions.

After reading the script (Appendix 2), questionnaires were passed out to those students who volunteered to participate in the study. The finished questionnaires were collected before the subjects left the room.

Delimitations and Limitations

The ethical concerns of using human subjects and the time and resource constraints imposed on this study delimited the choice of research design that could be employed. A true experimental design, which can control the independent variable and establish the temporal sequence of independent variable changes preceding dependent variable changes (Smith & Glass, 1987), should yield a pure effect of the independent variable on the dependent variables. In consideration of the delimitations of this study, a causal-comparative design was used.

Random sampling of full-time students in OT schools across the nation should give a more representative sample. The strategy used to increase the power of generalisation in this study was to use as large a sample size as available (in this study, the size of different sample groups was well over 30).

Although a retrospective pretest-posttest design seems to be superior to a traditional longitudinal pretest-posttest design in some respects, as have already been discussed, the tendency of the subjects to have greater familiarity with the goals of intervention and their personal involvement in treatment might have increased the negative impact of social desirability effect on the ATEP scores (Perry et al., 1987). Furthermore, possible errors in the recall of pretest responses might have decreased the reliability of the pretest scores. To increase the validity of the observation, the retrospective pretest-posttest procedure was administered at all levels of OT training. Information obtained from the comparison of the trend of observations at each level should help determine the degree of confidence in the derived conclusion.

CHAPTER IV

RESULTS

In this chapter, the demographic data delineating the characteristics of the sample are presented. The effect of exposure to accurate information about and contact with disabled people on attitude change is analyzed, and the proposed hypotheses are tested. The effect of subjects' level of training, gender, age, and previous experience with disabled people on the ATDP scores are examined.

Computation

Questionnaires of the study were scored, and the data obtained were analyzed using the Statistical Package for the Social Sciences - Revised (SPSSx). The t-test computed by the SPSSx program provides two independent estimates of population variances of the measurements in the groups. It also tests for the homogeneity of variance. This is particularly useful when comparing independent groups of unequal sizes (Wilson, 1990), which is the case in this study. Within the context of this study, alpha level of 0.05

was chosen.

Internal consistency of the ATDP scale - form A was analyzed using the SPSSx program. Cronbach's alpha equals to about 0.9 for the ATDP scale in the pretest and the posttest was generated. The ATDP scale used in this study can be regarded as internally consistent.

Characteristics of the Sample

Demographic data were obtained on page 1 of the questionnaire (Appendix 1). The factors examined include subjects' gender, age, and previous experience with disabled people.

Gender

The gender distribution of the subjects is presented in Table 3.

Table 3
Gender Distribution

	Male	Female	Total
	n (%)	n (%)	n (%)
Year Two	9 (13.6)	57 (86.4)	66 (100)
Year Three	6 (14.0)	37 (86.0)	43 (100)
Year Four	2 (5.7)	33 (94.3)	35 (100)
Total	17 (11.8)	127 (88.2)	144 (100)

The majority of the subjects were females. The sample size of the male subjects, especially in year four, was relatively small as compared with that of the female subjects.

Age

The age distribution of the subjects is presented in Table 4.

Table 4
Age Distribution

	≤ 20	21 to 25	≥ 26	Total
	n (%)	n (%)	n (%)	n (%)
Year Two	9 (13.6)	43 (65.2)	14 (21.2)	66 (100)
Year Three	6 (14.0)	29 (67.4)	8 (18.6)	43 (100)
Year Four	1 (2.9)	25 (71.4)	9 (25.7)	35 (100)
Total	16 (11.1)	97 (67.4)	31 (21.5)	144 (100)

About 67% of the subjects fell within the age range of 21 and 25. About 11% of them were at 20 or below, and 21% of them were at 26 or above.

Previous experience interacting with disabled people

The subjects' previous experience with disabled people is depicted in Table 5.

Table 5

Previous Interaction with Disabled People

	Yes	No	Total
	n (%)	n (%)	n (%)
Year Two	50 (75.8)	16 (24.2)	66 (100)
Year Three	25 (58.1)	18 (41.9)	43 (100)
Year Four	23 (65.7)	12 (34.3)	35 (100)
Total	98 (68.1)	46 (31.9)	144 (100)

About 68% of the subjects have had previous interaction with the disabled people. For those subjects who have previously interacted with disabled people, the situations in which the experience was acquired are summarised in Table 6. The meanings of the variables used are defined as follows:

'Work' refers to any paid or voluntary work in health care institutes or social services settings.

'Home' is used to represent situations where experience with disabled people is acquired through the interaction with family member(s) who is(are) disabled.

'Social' means the interaction with friends who are disabled.

'Others' include the interaction in 'work', 'home', and/or 'social' as defined.

Table 6

Situations in which the Experience was acquired

	Work	Home	Social	Others	Total
	n (%)	n (%)	n (%)	n (%)	n (%)
Yr. Two	41 (85.4)	1 (2.1)	0 (0)	6 (12.5)	48 (100)
Yr. Three	19 (67.9)	2 (7.1)	3 (10.7)	4 (14.3)	28 (100)
Yr. Four	13 (59.1)	3 (13.6)	0 (0)	6 (27.3)	22 (100)
Total	73 (74.5)	6 (6.1)	3 (3.1)	16 (16.3)	98 (100)

An uneven distribution was observed, with the

majority of the subjects who had previous interaction with disabled people acquired the experience under the 'work' category.

Hypotheses Testing

The mean pretest and posttest ATDP scores of students in year two, three, and four are computed and presented in Table 7.

Table 7

Means and Standard Deviations (SD) of ATDP Scores

	Pretest		Posttest	
	Mean	SD	Mean	SD
Year Two	122.8	23.4	131.8	21.3
Year Three	107.6	25.0	137.3	17.3
Year Four	105.7	26.7	136.2	27.0

Hypothesis (1)

Hypothesis (1) stated that there would be no significant difference in the ATDP scores among OT

students at different levels of training. The posttest scores of the subjects in year two, three, and four are compared and the observed difference is tested by the ANOVA and the Scheffe test. No significant difference in the posttest scores among the three groups and between any two groups was observed ($F\text{-ratio}=1.00$, $p=0.37$). Although there was a concern regarding the potential biases inherent in using the data obtained from year three OT students, the results of the Scheffe test indicated that Hypothesis (1) was supported even if only year two and year four subjects were compared. Therefore, Hypothesis (1) was supported at the 0.05 level.

Hypothesis (2)

Hypothesis (2) stated that there would be no significant difference between the pretest and the respective posttest ATDP scores of OT students at each level of training. The t-tests for paired observations, which have greater power than t-test for independent groups, are employed to test the significance of the observed difference between the pretest and the posttest scores. The results are

summarized in Table 8.

Table 8
t-tests Summary Results for Difference between
Pretest and Posttest Scores

	Difference in Means	p (2-tail)
Year Two	8.9	0.00*
Year Three	29.7	0.00*
Year Four	30.5	0.00*

* Significance at the 0.05 level

As indicated in Table 8, the difference in the pretest and posttest scores at each level of training was statistically significant, with the subjects' posttest ATDP scores being significantly higher than their pretest scores. Therefore, Hypothesis (2) in this study was not supported.

Hypothesis (3)

Hypothesis (3) stated that there would be no significant difference in the ATDP scores between the

male and the female OT students. The results of the t test are presented in Table 9.

Table 9

t-test Summary Results for Gender Differences

	n	Mean	p(2-tail)
Pretest			
Male	17	106.9	0.22
Female	127	115.1	
Posttest			
Male	17	117.4	0.00*
Female	127	136.6	

* Significant at 0.05 level

Hypothesis (3) was supported in the pretest situation. The 8-point difference in favour of the female subjects in the pretest is not indicative of any significant difference. Hypothesis (3), however, was not supported in the posttest when the female subjects scored significantly higher than the male subjects.

The effect of gender differences on the pretest and the posttest scores is further analyzed by comparing the trend of male and female subjects' scores at each level of OT training. The respective pretest and posttest scores of the male and female subjects in year two, three, and four are presented in Table 10.

Table 10
Scores by Gender by Level of Training

	Pretest		Posttest	
	Male	Female	Male	Female
Year Two	108.6	125.1	112.7	134.8
Year Three	99.5	108.9	132.7	138.1
Year Four*	122.0	104.7	93.0	138.8

*The sample size of male subjects is two

Female OT students' ATDP scores were relatively higher than their male colleagues. This trend was observed in almost all the pretest and the posttest situations, except in the pretest in year four, when

the male subjects scored higher than their female colleagues. The exception may be explained by the relatively small sample size of male subjects in year four ($n=2$).

Based on the results of the t-test and the observed trend of male and female subjects' ATDP in year two and three (year four is not included due to the small sample size of male subjects), female OT students seem to have more positive attitudes toward disabled people than do male OT students.

Hypothesis (4)

Hypothesis (4) stated that there would be no significant difference in the ATDP scores among OT students at different ages. The ANOVA and the Scheffe procedure were implemented to evaluate the significance of age differences on the ATDP scores. No significant difference in the pretest and the posttest scores among the different age groups and between any two groups was observed (Pretest: $F\text{-ratio}=0.62$, $p=0.54$; Posttest: $F\text{-ratio}=1.95$, $p=0.15$). Hypothesis (4) was supported.

Hypothesis (5)

Hypothesis (5) stated that there would be no significant difference in the ATDP scores between the OT students who have and do not have previous experience with disabled people. The ANOVA and the Scheffe procedure were done to test the difference in the ATDP scores between those subjects who had previous experience interacting with disabled people and those subjects who did not. The results of the ANOVA and the Scheffe test suggest that the difference in the pretest and posttest scores between the two groups is not significant (Pretest: F-ratio=1.96 $p=0.16$; Posttest: F-ratio=0.02, $p=0.90$).

The ANOVA and the Scheffe test were employed to test whether the different situations in which the experience was acquired will have any significant effect on the ATDP scores. No significant difference in the pretest and the posttest scores among the different groups and between any two groups was observed (Pretest: F-ratio=0.85, $p=0.50$; Posttest: F-ratio=0.43, $p=0.79$). Hypothesis (5) was supported at the 0.05 level.

Summary

The findings of this study support Hypotheses (1), (4), and (5). The results, however, did not support Hypothesis (2). The attitudes of OT students are significantly more positive after attending the program; however, a significant attitude change among the students is not observed while they progressed through the OT program.

Hypothesis (3) was supported in the pretest situation, but is not supported in the posttest situation. Gender differences appear to have an effect on attitudes toward disabled people.

CHAPTER V

DISCUSSION

The combined effect of exposure to accurate information about and contact with disabled people on attitudes toward people with disability was examined in this study. The second, third, and fourth year full-time OT students at the University of Alberta were recruited as subjects, whose attitudes toward disabled people prior to (pretest) and after (posttest) attending the OT program at the university were measured by the AIDP scale - Form A.

Level of Training

The findings showed that the OT students at a senior level did not score significantly higher than the students at a junior level; however, the students' posttest scores were significantly higher than their respective pretest scores at each level of training. These observations suggest a positive non-linear relationship between the level of OT training and attitudes toward disabled people.

The use of a retrospective pretest-posttest

design, which relies on subjects' memory of their pretest responses, does impose threats to the validity of the findings. As the demand on memory is much lighter for students in year two than year three or four, the similar trend of attitude change observed in year two as well as in year three and four, with the posttest scores significantly higher than the pretest scores, adds confidence to the derived conclusion which suggests that the relationship between OT training and attitudes toward disabled people is a positive one.

The findings of the present study also suggest a non-linear relationship between level of training and attitudes toward people with disability. The posttest scores were significantly higher than their respective pretest scores at each level of training, yet no significant difference was observed between the posttest scores at different levels of training. These observations imply that OT students' attitudes toward disabled people shifted positively and reached a plateau shortly after they attended the formal professional training, and the resulting positive attitudes remained quite stable as they progressed in the program.

The curriculum of the OT program, issued by the Department of Occupational Therapy at the University of Alberta (1991), was reviewed so as to further understand the operating mechanism of the attitude change observed. Formal OT training begins in the second year after students have completed the pre-professional year. According to the time table of the first semester of the second year, students are to attend the assigned core courses, which offer them opportunities to acquire medical and professional knowledge regarding disabilities. The first clinical placement is not scheduled until the intersession.

Evaluation of the findings of this study based on the OT curriculum indicates that the information inherent in the curriculum content of the first semester of the second year functions to initiate a positive shift of students' attitudes toward disabled people. As there was no significant effect of students' previous experience with disabled people on the ATDP scores observed in this study, and there was no clinical placement scheduled during the time when attitude change took place, contact with disabled people does not seem to play a significant role in

initiating the positive attitude change observed. This concurs with Wise's and Page's (1980) contention that curriculum content can significantly affect attitude change.

The question becomes how the initially acquired positive attitudes toward disabled people are maintained throughout the CT program as observed. Wetstein-Kroft and Vargo (1984) propose that single experiences are not sufficient to produce long term changes. In this study, subsequent interaction with and further information about disabled people may combine to maintain students' positive attitudes toward disabled people acquired in the first semester of the second year. Clinical experience appears to have not maintain the positive attitudes acquired; however, it does not seem to play a significant role in initiating an attitude change. The maintenance function of clinical placement may explain the findings of Greenstein (1975) that there was no significant change in CT students' attitudes toward disabled people following their first clinical experience.

Horne (1988) suggests that an attitude change is more likely if information acquisition is followed by

interaction with disabled people. According to the observations in this study, Horn's suggestion may be modified to say that an attitude change resulting from information acquisition is more likely to be maintained if it is followed by subsequent interaction with and further information about disabled people. This postulation needs to be verified by future research.

Given the fact that the curriculum of an OT program remains constant, the time of training when students' attitude scores are obtained becomes critical in determining whether a significant attitude change is observed. If the baseline were measured prior to the beginning of the formal program, a significant attitude change might be envisaged. However, if the baseline were obtained after the first semester of the program, an attitude change probably would not be observed. In order to verify this postulation, the posttest scores of the fourth year OT students is compared to the pretest scores of the second year OT students. A significant difference was observed, with the former significantly higher than the latter ($t=-2.57$; $p<0.05$, two-tailed).

This observation may be used to explain the

discrepancies of research findings on OT students' attitude change while attending the professional training, such as the studies by Estes et al. (1990) and Belinsky (1972). As those studies did not specify the design of the OT curricula studied nor the point of training at which data were collected, the proposed explanation cannot be further verified.

Benham (1988) questions whether prospective OT students have already had favorable attitudes or that favorable attitudes are developed during their course of study. Furthermore, those therapists participating in Benham's study believe that the expression of a favorable attitude should be one of the criteria in the selection of OT students. The term 'favorable' depends on subjective evaluation according to Benham (1988). However, the findings of this study did show that OT students' attitudes toward disabled people became significantly more positive shortly after attending the formal professional training. This implies that 'Attitude' as a criterion of student selection is not necessary on the condition that the curriculum of the OT program is similar to the one examined in this study.

Previous Experience with Disabled People

The findings of this study showed that previous experiences with disabled people did not interact with subjects' attitude scores. This seems to contradict some previous literature which has suggested the possible effect of previous positive experience with disabled individuals in fostering a positive attitude toward disabled people (Florian, 1981). The conflicting findings may be explained by the fact that the present study did not identify whether the subjects' previous interaction with disabled people were positive or negative.

Age and Gender Differences

Age differences do not seem to have an effect on the attitude scores in this study. This observation adds to the inconclusive findings about relationships between age and the ATDP scores (Yuker & Block, 1986).

Whereas age differences did not show any effect on students' attitudes toward disabled people in this study, the effect of gender differences on the ATDP scores was studied. Female OT students, in general, scored higher than their male colleagues in the pretest

and the posttest. The results concur with the findings of the study conducted by Mitchell et al. (1984), which showed that female medical students demonstrated a higher ATDP score than male subjects in their study. Yuker and Block (1986) have summarized 129 studies comparing scores obtained by males and females. Inconclusive results were observed, but median ATDP scores tended to be higher for females than males. A similar relationship between gender differences and attitude scores was observed in this study.

The interaction effect of gender differences and level of training on attitude toward disabled people was planned to be further examined by using the multivariate analysis of variance (MANOVA). The procedure was not implemented due to the small number of male subjects at each level of training, especially in year four which has only two male subjects. The results yielded by the MANOVA cannot be considered as valid and reliable estimates. The effect of gender differences should be considered when the findings of this study are to be generalised to other populations.

Female OT students' relatively high ATDP scores suggest that they may be more susceptible to the effect

of exposure to accurate information about and contact with disabled people. This phenomenon may be explained by the different values endorsed by males and females. Taylor (1988) showed that female occupational therapists endorsed social relations more highly than males. She further stated that this value appeared to be aligned to nurturing and caring. Moreover, Fryor (1983) suggested "females appeared more likely to associate helping others with personal achievement whereas males tended to see helping people in terms of controlling and organizing them" (p.233). Taylor's and Fryor's suggestions imply that females may be more likely to view disabled people as the same as able-bodied people. This matches with the construct of the ATDP scale, which defines positive attitude toward disabled people as one which denotes no difference between disabled and able-bodied people. Therefore, females in general have a more positive attitude score on the ATDP than males.

The effect of gender differences on attitudes toward disabled people may explain the conflicting findings in the field of attitudes toward disabled people. The number of males and females in a sample

can be a significant confounding factor. A prediction based on the observations of this study: A sample with more females should demonstrate a relatively more positive attitude toward disabled people than a sample containing a higher number of males on the ATSB model.

Conclusion

The findings of the present study suggest that exposure to accurate information about disabilities initiates a positive shift of CT students' attitudes toward disabled people. The maintenance of their positive attitudes is postulated to be done by subsequent opportunities to interact with disabled people and further exposure to accurate information about disabilities. Whereas the mechanism which initiates a positive attitude modification is delineated in this study, future research is required to verify the postulated maintenance mechanism. Furthermore, the atmosphere of CT department and the motivation to learn may be some of the confounding factors which contribute to the observed attitude change. Wetstein-Kroft and Vargo (1984) suggest that programs for changing attitudes must consider the

motivational aspect of change. More research effort is required to delineate the effects of these confounding factors so as to refine the understanding of the mechanism of attitude modification.

In this study, OT students' age differences and previous experience with disabled people did not significantly affect their ATDP scores. The effect of gender differences on attitudes toward disabled people was observed; however, the sample size of male subjects is too small to give a valid and a reliable estimate of the pattern of interaction between gender differences and other variables on attitudes toward disabled people. Future research to identify such a pattern is crucial to fine tune the understanding of the effectiveness of different attitude modification strategies.

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Appendix 1

Thank you for your participation. Please read the definition of 'disability' given below. Then turn to the following pages and answer the questions.

A **Disability** is defined as "any restriction or lack of ability to perform an activity in the manner or within the range considered normal for a human being." (WHO, 1980; p.143)

CONTINUE ON THE NEXT PAGE

IN THE FOLLOWING QUESTIONS, PLEASE CHECK THE MOST
APPROPRIATE BOX.

1. Gender:

[Male] [Female]

2. Age in years:

[under 20] [21 to 25] [26 to 30] [31 to 35]

[36 to 40] [41 to 45] [46 to 50] [over 50]

**3. Level of training in the present Occupational
Therapy (OT) education program:**

[2nd year] [3rd year] [4th year]

**4. Previous experiences with disabled people prior to
attending the OT program:**

[Yes] [No]

If your answer is 'yes' in #4, please list the
locations where you acquired the experiences:

CONTINUE ON THE NEXT PAGE

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Your responses PRIOR TO attending the OT program

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 nondisabled persons.
- _____ 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 nondisabled 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 a disabled person should be more severe than the one given to the nondisabled.

CONTINUE ON THE NEXT PAGE

- ___14.Disabled people are usually sociable.
- ___15.Disabled persons usually are not as conscientious as physically normal persons.
- ___16.Severe 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 nondisabled persons.
- ___19.Most disabled persons do not get discouraged easily.
- ___20.Most disabled persons resent physically normal people.
- ___21.Disabled children should compete with physically normal children.
- ___22.Most disabled persons can take care of themselves.
- ___23.It would be best if disabled persons would live and work with nondisabled 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 nondisabled people.
- ___28.Most disabled persons are different from nondisabled people.
- ___29.Disabled persons don't want any more sympathy than other people.
- ___30.The way disabled people act is irritating.

CONTINUE ON THE NEXT PAGE

Your present responses AFTER attending the OT program

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 normally 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 nondisabled persons.
 - _____ 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 nondisabled 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 a disabled person should be more severe than the one given to the nondisabled.

CONTINUE ON THE NEXT PAGE

- ___14.Disabled people are usually sociable.
- ___15.Disabled persons usually are not as conscientious as physically normal persons.
- ___16.Severe 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 nondisabled persons.
- ___19.Most disabled persons do not get discouraged easily.
- ___20.Most disabled persons resent physically normal people.
- ___21.Disabled children should compete with physically normal children.
- ___22.Most disabled persons can take care of themselves.
- ___23.It would be best if disabled persons would live and work with nondisabled 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 nondisabled people.
- ___28.Most disabled persons are different from nondisabled people.
- ___29.Disabled persons don't want any more sympathy than other people.
- ___30.The way disabled people act is irritating.

THANK YOU FOR YOUR PARTICIPATION!!!

Appendix 2

Thank you for your time and cooperation. I am currently studying the impact of an occupational therapy curriculum on the students, and your help is required to complete the project. All I need from you is 20 minutes of your time to fill out a questionnaire that I've prepared. You do not need to identify yourself in the questionnaire, and your information will be kept confidential. Besides, you can withdraw from the study at any time you want. Before I continue, may I know how many of you do not want to participate?

[Pause - continue after those students who do not want to participate in the study have left the room]

Thank you very much. **[Give out the questionnaire]** Each of you should have a questionnaire. Please read the instructions and the questions carefully. The questions on the middle two pages are the same as the questions on the last two pages, but if you read the instructions carefully, you will realise that the middle two pages ask your reactions to the questions PRIOR to attending the occupational therapy program; and the last two pages ask about your PRESENT responses. Please be careful about it. You may start now. If you have any questions, please feel free to ask me. After you have finished filling out the

and the last two pages ask about your PRESENT responses. Please be careful about it. You may start now. If you have any questions, please feel free to ask me. After you have finished filling out the questionnaire, please leave it on the desk here. **[Point to the desk]** Again, thank you for your participation!

Appendix 3

HOFSTRA HEMPSTEAD, NEW YORK 11550
UNIVERSITY

Center for the Study of Attitudes
Toward Persons with Disabilities

October 16, 1991

Tatia Lee-Chan
6-102 Education North
Faculty of Education
University of Alberta
Edmonton, Alberta
Canada T6G 2G5

Dear Tatia Lee-Chan:

You certainly have my permission to use the ATDP Scale and you can reproduce any of the three scales from the ATDP monograph. If you do not have a copy of the 1986 monograph, you can obtain one by writing to me. Enclose a check for \$10.00 payable to Hofstra University. Good luck in your research.

If there is any way I can be of help, feel free to write to me.

Sincerely,



H. E. Yuker, Ph.D.
Schloss Distinguished Professor
of Psychology

HEY:RM



