EMPATHY TRAINING AND STRESS:

THEIR ROLE IN MEDICAL STUDENTS' RESPONSES

TO EMOTIONAL PATIENTS

by

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Abstract

This study investigated the effects of empathy training on
medical students' responses to emotionally intense situations.
It also explored the interaction between empathy and stress.
Thirteen volunteers from a second-year medical class completed
the study which utilized a two-factor crossover design. In
the first of three testing situations, each subject
participated in a 15-minute videotaped interview with an actor
who portrayed an angry, fearful, or grieving patient. Each
medical student then completed measures of empathic
understanding and perceived stress regarding the encounter, as
well as scales of coping and hardiness. Each simulated
patient rated the medical student's level of empathic
understanding. Two raters, blind to the experimental design,
analyzed the tapes and rated the medical students' degree of
communicated empathy. Subjects were then randomly assigned to
one of two groups: training with follow-up, or control with
delayed training. The first group received four 3-hour weekly
sessions in empathy training while the second group served as
a wait-list control. All subjects then participated in a
second taped interview and completed all measures again. The
subjects in group two received the training while the first
group received no further treatment. All subjects were tested
a third time which concluded the experimental procedure.

The principal statistical analyses comprised a series of 2 x 2 ANOVAS tested at the .05 level of significance. Results revealed that, following the training, subjects learned to interact in a more empathic manner; effect sizes ranged from 1.08 to 18.32. Also, subjects' stress levels regarding the emotionally intense encounters were reduced; the effect size was -1.95. As hypothesized, these changes in empathy and stress were not observed for the wait-list control group, while training effects were maintained for subjects in the follow-up group. Changes in hardiness and coping were not statistically significant. An outline is presented which illustrates the mediating function of empathic responding in stressful interactions. Also addressed are implications for empathy training in medical education and for communication in the physician-patient relationship.

Table of Contents

CHAPTER I: Introduction

CHAPTER II: Literature Review

List of Tables

List of Figures

Acknowledgements

In loving memory of my Mother,

Mary Kathleen

"In the earliest days and weeks of life,

the mother . . . initiates an empathic relationship. . . .

whereby the child can, in turn, be empathic with others."

--Gladstein, 1987: 122

CHAPTER I

Introduction

Background

The interaction between physicians and their patients has been said to be the keystone of medicine (Engel, 1973). An integral aspect of this interpersonal encounter is communication. It is through communication with patients that physicians are able to elicit and convey information which may have an impact upon the effective delivery of health care (White, 1988). Indeed, Cassell (1985) suggested that effective communication represents the central skill on which all other abilities in the practice of medicine depend.

Even though effective communication is vital in medicine, only recently has much emphasis has been placed on communication skills (Badenoch, 1986; Waitzkin, 1984). Most medical schools, until the last decade, did not offer interpersonal communication skills training (Kahn, Cohen, & Jason, 1979). The assumptions appeared to be that either a person had the instincts to be a good communicator or not, and that these skills would be developed with experience through intuition or imitation (Riccardi & Kurtz, 1983). Recent research, however, indicates that more attention needs to be given to the development of communication skills in medical students and physicians (Bernstein & Bernstein, 1985; Cassell, 1985; White, 1988).

One aspect of communication skills training which has been identified as lacking in medical schools is the teaching of empathy skills (Sanson-Fisher & Maguire, 1980). The main purpose of this study was to examine the effectiveness of empathy skills training for medical students, particularly when they are challenged by emotionally intense encounters with simulated patients.

Empathy, which is a core ingredient of the helping process in counselling and psychotherapy (e.g., Rogers, 1957; Egan, 1986), may help physicians in their clinical interviews to understand patients' emotional needs which often accompany illness. Dealing with such emotional needs often involves working with intense affect related to suffering, fear and death (McCue, 1982). Also, patients often expect counselling and help from their physicians in dealing with their psychosocial issues (Baker & Cassata, 1978; Good, Good, & Cleary, 1987; Hansen, Bobula, Meyer, Kushner, & Pridham, 1987; Herbert, Cooke, Gutman & Schechter, 1986).

Working with such intensely emotional aspects of patient care has been identified as a source of stress for practising physicians (Herbert & Grams, 1986; May & Revicki, 1985; McCranie, Hornsby, & Calvert, 1982). Medical students also reported that coping with intense emotions in their interactions with patients contributes to their high stress levels (Firth, 1986; Knight, 1983). Firth (1986) concluded that there is a need to identify means which can help

alleviate medical students' distress when dealing with stressful aspects of patient care such as suffering.

Branch (1987) suggested that the reason physicians experience discomfort in dealing with the emotional needs of patients is that they lack training in this area. Heavy (1988) pointed out that physicians, feeling a sense of failure in the curing role, may avoid dealing with patients' issues and so may appear aloof or insensitive. She concluded that it is necessary for medical practitioners to receive empathy training for the sake of both themselves and their patients.

Physicians themselves have indicated a need for training in dealing with psychosocial needs of patients. In a survey of 151 physicians from a variety of specialties, Lewis, Wells, and Ware (1986) found that 85 percent of them agreed that counselling patients was important; however, only 12 percent said they were effective in counselling. Medical students also have indicated a need for training in dealing with emotional issues. Batenburg and Gerritsma (1983) found that medical students indicated a need for further experience in coping with patients' emotions even though they had a basic interviewing skills course. It is important, then, for medical students to receive empathy communication skills training because they spend considerable time, both as students and as practising physicians, in emotionally intense involvement with patients which can be a significant source of stress.

Figure 1 illustrates some of the consequences of lack of training and ensuing stress experienced by medical students and physicians when they are presented with emotionally intense interactions.

| Presentation of intense emotional issue by patient | Expectations by patient of physician to deal with intense emotional issue | Lack of training in communication skills by physician to respond effectively to intense emotional issue | Strong emotional discomfort by physician and possible avoidance of patient's emotional issue | Stress for both physician and patient ensues, which may result in an unsatisfactory physician-patient relationship |

Figure 1. A transactional model illustrating some possible factors involved in the process of poor physician-patient communication.

Objectives of the Study

The recognition of the importance of good physician-patient communication highlights the need for research to determine the effectiveness of interpersonal communication skills training in this setting (Betchart, Anderson, Thompson, & Mumford, 1984). Poole and Sanson-Fisher (1979) recommended that training in empathic skills be provided, but only with continual evaluation of its effectiveness. However, a number of methodological issues have been identified which must be considered when determining the effectiveness of a communication skills training course.

Carroll and Munroe (1980) and Sanson-Fisher, Fairbairn, and Maquire (1981), in their two reviews of the methodologies

of studies used to evaluate the effects of communication skills training, suggested that the great majority of studies have employed weak research designs (e.g., no control group), and so the validity of the findings must be questioned. They suggested replicating studies with more control over potentially confounding factors.

Kahn et al. (1979) in another review of studies reported that while 95 percent of interviewing courses had an evaluation component, 87 percent of these used indirect methods such as class attendance or student knowledge. Few used direct observation of skills or criterion-referenced instruments. Wolraich, Albanese, and Stone (1986) pointed out that one of the barriers to evaluating physician-patient interactions is the dearth of reliable and valid instruments to assess communication skills. Gask, Goldberg, Lessar, and Millar (1988) suggested that few communication training courses evaluated the changes in skills by assessing videotaped interviews pre- and post-training.

The purpose of the present study was to examine the effectiveness of empathy communication skills training for medical students especially when they are challenged by emotionally intense clinical situations. To avoid some of the shortcomings of previous research in the area, this study employed a "true" experimental design (Cook & Campbell, 1979), direct observation of skills from videotaped interviews, and reliable and valid research instruments designed to measure aspects that the intervention was meant to affect.

Many studies have attempted to evaluate the effectiveness of physicians' communication skills in terms of patient satisfaction. However, one of the common reasons why communication skills training is not offered in medical schools as suggested by Wakeford (1983) is "You haven't proved that it will help the medical students" (p. 245).

This study investigated whether empathy skills training would help medical students by decreasing their stress levels in emotionally intense situations. The main research question of this study was: What is the impact of empathy training for medical students, both in terms of increasing their levels of empathy as well as decreasing their levels of perceived stress in emotionally intense clinical interactions?

Exploratory questions which were addressed also in this study included:

(1) Do certain personality characteristics and behavioural coping strategies change as a result of empathy training?

(2) What kinds of coping strategies are most commonly used by medical students to cope with the stress of medical training?

(3) What processes of the training do the trainees like the best, the least, and learn by the most?

Operational Definitions

Empathy

Barrett-Lennard (1981) suggested that the process of empathy involves three distinct phases. Phase one refers to the inner process of empathic listening and understanding by the clinician. Phase two refers to the communicated or expressed empathic understanding by the clinician. The third phase of the empathy cycle is received empathy by the client.

Barrett-Lennard differed from Truax and Carkhuff with regard to the operational definition of empathy. Truax and Carkhuff (1967) held the view that empathy may be defined in terms of the therapist's behavior alone. Barrett-Lennard maintained that the clinician's and client's subjective experience partly defines the empathic process, and he included the clinician's and client's inner processing in his operational definition (Barrett-Lennard, 1962, 1981).

In this study, medical student experienced empathy, or empathic understanding, is operationally defined as a score on the clinician form (MO) of the Empathy scale of the Barrett-Lennard Relationship Inventory (Barrett-Lennard, 1962). Communicated empathy is defined as the degree to which medical students' statements expressed empathic understanding as measured by Carkhuff's (1969) 5-point scale. Received empathy, or how empathic the simulated patient perceived the medical student to be, is operationally defined as the score on the client form (OS) of the Empathy scale of the Barrett-Lennard Relationship Inventory (Barrett-Lennard, 1962).

Stress

Researchers who study stress have been unable to reach general agreement regarding a definition of stress. Monat and Lazarus (1985) suggested that stress is a general label for a complex and interdisciplinary area of study. Stress generally refers to "any event in which environmental demands, internal demands, or both tax or exceed the adaptive resources of an individual" (Monat & Lazarus, 1985, p. 3).

Folkman and Lazarus (1980) defined two important processes involved when a person is affected by a stressful occurrence in the environment. One is appraisal and the other is coping. Appraisal refers to the cognitive processes used to evaluate the stressful situation and the options available to deal with it. In this study, appraisal by the subjects of the emotionally intense interactions with the simulated patient is operationally defined as scores on the Perceived Stress Scale which I developed for the purposes of this research.

Coping

Coping refers to an individual's response to stress or one's efforts to adapt in situations which one appraises as being harmful, threatening, or challenging (Lazarus & Folkman, 1984). There appears to be two different approaches to the study of coping. Some investigators have emphasized coping traits or personality dispositions (Goldstein, 1973), while

other researchers have studied active, ongoing coping strategies used in particular stressful situations (Folkman & Lazarus, 1980). Monat and Lazarus (1985) suggested that the study of coping, which is tied to the study of stress, should focus on measuring both coping processes and personality dispositions.

In the present study, coping with stress with respect to personality disposition was operationally defined by scores on Kobasa's (1979) personality-based Hardiness measure comprised of commitment, control and challenge.

Stress with respect to coping behaviours used to cope with the stress of medical training was operationally defined as the number and types of coping strategies used (problem focused and emotion focused) as indicated on the Ways of Coping Scale (Donnelly, 1979).

Assumptions and Limitations

The context for examining the research question was an interaction between a medical student and a simulated patient. One assumption of this study was that the analog would be sufficiently similar to a session of an actual medical interview to enable the results to be generalized to such a session and that simulated patients could be regarded as similar to patients in general, who are functioning normally and who are free of gross psychopathology.

Researchers have found that the use of simulated patients has been effective in assessing medical students'

communication skills (e.g., Sanson-Fisher & Poole, 1980;
Hannay, 1980). One of the advantages of using simulated
patients in the study of physician-patient interactions is
that it is possible to have more control over maintaining
similar intensity levels and nature of emotions presented.
Further, simulated patients were found to be so authentic that
medical students and physicians could not distinguish them
from real patients (Norman, Tugwell, & Feightner, 1982;
O'Hagan, 1986; Sanson-Fisher & Poole, 1980). Also Zimbardo
(1977) found, in his mock prison research, that the guards and
prisoner subjects developed attitudes which were quite
indistinguishable from real guards and prisoners. Thus the
assumption that results can be generalized to real patient-
physician interactions has some empirical support.

The experiencing of intense emotions was assumed to be a
universal human experience which is consistent across persons
from all cultures (Buck, 1984).

A further assumption was that only those professionals
who have professional training and experience in interpersonal
skills are able to assess empathy accurately (Carkhuff &
Burstein, 1970).

Regarding limitations, the subjects were all volunteers
which may have been a source of bias in the sample.
Participation in the study was time-consuming, so that those
subjects who were most motivated to learn empathy
communication skills may have volunteered.

This study was conducted with subjects from a second year medical class. Strictly speaking, results may be generalized to those medical students in this class year. However, it possesses implications for physician-patient interactions in general. I assume that empathy is a core facilitative condition in any helping relationship and that high levels of helper empathy may help to increase helpee self awareness and release the potential for the helpee to make constructive changes with regard to the problem presented.

Overview of the Document

Chapter two contains a review of the relevant literature and a rationale for the research problem. Chapter three provides details about the research design and experimental procedures. Results of the statistical treatment of the data are presented in chapter four. Chapter five includes a discussion of the results and suggestions for further research.

CHAPTER II

Literature Review

Introduction

The purposes of the first part of this literature review are to provide a rationale for the study and to clearly define the research problem. The chapter opens with a discussion of the value of effective communication and skill training for medical practitioners. The trend toward adopting a biopsychosocial model of medicine and training physicians to be more humane is examined. A discussion of the concept of empathy is followed by an exploration of the importance of empathy in the physician-patient relationship, especially in emotionally laden encounters which can be a source of stress for medical practitioners. Previous research linking the topics of empathy and stress are examined. Statements of the hypotheses addressed in this investigation are included. Literature relevant to the exploratory questions is also reviewed.

The second part of this chapter contains a review of some of the empirical studies relevant to the research problem and a discussion of issues involved in empathy training for practicing physicians and medical students.

Value of Effective Communication in the

Medical Interview

Effective communication between physicians and their patients is an important component of medical care. Patients value and appreciate good communication with their physicians. Matthews, Sledge, and Lieberman (1987) found through an evaluation of 27 interns by 212 inpatients that the patients valued interpersonal skills and clinical skills equally. Buller and Buller (1987) also found that patients' evaluations of medical care and patients' evaluations of their physicians' communication competence were strongly associated.

Positive communication influences not only patients' subjective evaluations, but biochemical processes as well. Kaplan, Greenfield, and Ware (1989) found that patients' health outcomes whether measured physiologically, behaviourally, or subjectively were all related to aspects of the interactions between physicians and their patients. Indeed scholars have concluded that the process of healing is partially interpersonal, and is greatly influenced by physician-patient communication (Cousins, 1982). According to Friedman and DiMatteo (1979), to ignore this fact is a scientific error.

Physicians also recognize that effective communication with patients is important. For instance, in a survey of 387 general practitioners concerning their role in the health care system, 92.9% of the respondents indicated their strong support of the view that communication is important (Cockburn,

Killer, Campbell, & Sanson-Fisher, 1987). The advantages of effective communication are not limited to specialties such as family practice. In surgery, for instance, effective communication reduces post-operative complications and analgesic requirements (Richards & McDonald, 1985).

Effects of Miscommunication in the Medical Interview

Poor communication in the physician-patient relationship can lead to negative consequences. For instance, miscommunication in the medical interview can lead to poor rapport, patient noncompliance and dissatisfaction, errors in diagnosis and "doctor-shopping" (DiMatteo, Prince, & Hays, 1986; Harrigan & Rosenthal, 1986; Jarski, Gjerde, Bratton, Brown, & Matthes, 1985; Lavin, 1983; Ley, 1982; Riccardi & Kurtz, 1983). Patients complain more about poor communication with their physicians than about any thing else (Murtagh & Elliott, 1987). In fact, poor communication between patients and their physicians has been cited as the most common cause of malpractice litigation (Garr & Marsh, 1986; Numann, 1988).

Because of the public dissatisfaction with the quality of the physician-patient relationship, one remedy may be to give more attention to the development of communication skills in medical students and physicians (Bernstein & Bernstein, 1985; Cassell, 1985). Carroll and Monroe (1979) reviewed 73 studies on medical interviewing and concluded that ". . . the importance of medical interviewing skills is demonstrated by recent research identifying interpersonal communication as a

major cause of variance in patient satisfaction, patient compliance, and the incidence of malpractice litigation" (p. 498).

The Emergence of Communication Skills Training in Medical Education

In spite of the fact that communication between physicians and patients has been acknowledged as being important, it has only been in recent years that any emphasis has been placed on teaching or researching the effectiveness of communication skills training.

A number of reasons can be identified why medical schools have not focused attention on teaching communication skills until recently. First of all, there seemed to be the assumption that the ability to communicate effectively was innate and that these skills would be developed through intuition or imitation (Riccardi & Kurtz, 1983). However, a recent study by Kramer, Ber, and Moore (1989) revealed that in order for students to learn communication skills, they had to participate in training; being taught regular classes by instructors who received the training and who acted as role models was not effective in improving medical students' skills.

Another reason that communication skills were not offered is that the biomedical model which has been the dominant clinical method in medicine for over 100 years focuses primarily on the physical aspects of illness. It is purely

objective and does not focus on such subjective processes as interpersonal relationships and feelings (McWhinney, 1986). Traditional medical training has concentrated on teaching technical and scientific material, taking a more mechanistic approach (Cockburn et al., 1987; Numann, 1988; Putnam, Stiles, Jacob, & James et al., 1988). Further, there have been many advances in technology and medical knowledge (Schwartz & Wiggins, 1985). Consequently, the traditional biomedical method, which was based on the notion of Cartesian dualism, resulted in the split in focus between the psyche and soma (Carek, 1987). Unfortunately, what seems to have occurred is a polarity between the science and the art of medicine, between "compassion and competence," between caring and curing, between technology and human factors (Cousins, 1988).

As a result of this mind-body split the physician-patient relationship has suffered. Physicians themselves are recognizing the consequences of the imbalance in focus between technological advances and emotional aspects of curing. As stated by Gorlin and Zucker (1983) in a special article in the New England Journal of Medicine:

> Something has gone wrong in the practice of medicine, and we all know it. It is ironic that in this era, dominated by technical prowess and rapid biomedical advances, patient and physician each feels increasingly rejected by the other. Clearly, one root of the problem lies in the patient-doctor relationship. (p. 1059)

Lipkin (1987) further elaborates on the breakdown in physician-patient relationships:

> Patients have been alienated by the growing schism
> between the human and the medical. The prestige of
> the physician has appeared to dwindle: increasingly,
> people feel that their doctors do not or cannot
> listen . . .   The skills of interviewing and
> physical examination that once linked the doctor and
> the patient have rusted. There has been a breakdown
> in communication here. (p. 363)

There appears to be an effort towards finding a balance

between natural science and humanism. Recent attempts to

conjoin natural sciences and humanism have been called the

"doctor's dilemma" (Moulyn 1988, p.149) and the "challenge for

the 1980's and beyond" (Arnold, Povar, & Howell, 1987, p.3).

Questions ensuing from this challenge include: "How is

humanism to be incorporated with the traditional biomedical

model?" and "How can humanism be taught?"

There have been some attempts to introduce alternatives

to the traditional biomedical model in order to increase

physicians' sensitivities to patients' emotional concerns.

For instance, Balint in the late 1950's introduced his notion

of patient-centred medicine as opposed to disease-centred

medicine, and he began to offer groups for general

practitioners in order to focus on physicians' feelings about

interactions with patients (Balint, 1957).

Later, in 1977, Engel introduced an alternative model to

the traditional one, which he termed the biopsychosocial

model. He proposed that psychological and social aspects of a

person be considered in medical interactions because the

current biomedical model was inadequate in this regard. More

recently, Levenstein, McCracken, McWhinney, Stewart, and Brown

(1986) introduced the patient-centred clinical method for family medicine. In this model inclusion is made of not only doctors' agendas, as is the case in disease-centred medicine, but of patients' agendas as well. These scholars encouraged physicians to make efforts to understand patients' experiences of their illnesses.

With the emergence of new trends in medicine, and value being placed on positive physician-patient communication, medical educators are now placing focus on acquiring effective communication skills (Bernstein & Bernstein, 1986; Cassell, 1985). As Reiser pointed out in Cassell (1985):

> It is crucial for modern medicine to establish a balance between understanding general biologic processes that make us ill and understanding the illness as experienced and produced by the patient. To learn of the latter, the verbal and nonverbal elements of human communication in medical care must be understood and mastered. (p. x)

A conclusion resulting from a conference in which 40 physicians and other scholars met to discuss the biopsychosocial model of health and disease was that "acquisition of interviewing and communications skills is not only a desirable means, but probably the only means, for both appreciating and applying a more inclusive model of health and disease" (White, 1988, p. 37). A recommendation made at this conference was that further research using sound empirical methods is needed to support the adoption of the more inclusive medical model. To date, much of the evidence has

been anecdotal and descriptive. In particular, more research is needed which demonstrates the effectiveness of communication skills training (White, 1988). One of the goals of the present study is to provide such research.

Increasing Humanism in Medical Students

In order to improve the quality of the physician-patient relationship so that good communication can occur, attempts are being made by medical educators to enhance humanistic qualities such as compassion and caring in medical students (Henderson, 1981; Robinson & Billings, 1985). In 1980, the American Board of Internal Medicine Committee on the Definition of Clinical Competence identified six basic elements of clinical competence, two of which were humanistic qualities and communication skills (Blurton, & Mazzaferri, 1985). The Committee, concluded in 1983 that medical training programs had a major responsibility to stress human qualities, especially integrity, respect, and compassion in the physician-patient relationship (Benson et al., 1983). The Board now requires that all residents be assessed for their humanistic qualities and behavior in order for them to be certified (Krevans, 1983). Also, in 1987, the medical ethics subcommittee of the American Board of Pediatrics published a paper indicating that interpersonal skills was one of the subject areas in which their candidates would be examined for certification. Included was the requirement that physicians should have some knowledge of and skills in counselling

techniques to enhance positive communication with patients and their families (Daeschner, 1987).

Harvard University has begun a new Pathway Program with the goals of creating more humane and caring physicians so that relationships with patients can be improved (Stark, 1986). Herbert (1986) stated that "the approach at U.B.C. Medical School circa 1986 is to emphasize the biopsychosocial model of disease and illness as the context for all teaching and treatment" (p. 537). It was recommended by a U.B.C. Faculty of Medicine Subcommittee that behavioral science as it applies to medicine, including the skill area of the doctor-patient relationship, be integrated into all medical disciplines (Herbert, 1986). In his President's address to the American Medical Association in June, 1989, Nelson urged that research be done to investigate ways to increase such values as humanism and altruism in medicine and also to develop ways to measure humanism in attempts to meet the challenge of reducing the imbalance between the art and science of medicine. Nelson (1989) suggested, "The ability to provide the scientific miracles of the future will depend on our understanding and application of the art of medicine" (p. 1230).

While there appears to be widespread agreement that attempts must be made to create more humane physicians, scholars in the area have recognized that there is a lack of agreement as to the definition of humanism. Arnold et al. (1987) suggested that a humane physician possesses not only

technical competence, but also humanistic attitudes, behavior
and knowledge of humanistic concepts. Linn, DiMatteo, Cope,
and Robbins, (1987) suggested that humanism be measured in
terms of attitudes, values and behaviors. In order to
investigate the way in which "humanism" was defined and
measured, Linn et al. (1987) conducted both a literature
review and a survey of researchers and clinicians who were
interested in the area of patient-physician relationships.
They found that there were 132 different definitions of
"humanism"; however, the most frequently mentioned quality of
a humanistic physician was empathy. Similarly, Kramer,Ber,
and Moore (1987) defined "dehumanization" in part as the
reduction of empathic behaviors. Empathy, then, may be
considered to be one key dimension of "humanism". Also
research has shown a link exists between empathy and altruism
(Batson, Fultz, & Schoenrade, 1987). One way to increase
humanism and altruism therefore may be to offer empathy
communication skills training. Before a discussion of issues
involved in empathy training however, the topic of defining
the concept of empathy will be addressed.

The Concept of Empathy

The word "empathy" was translated in the early 1900s by
E.B. Tirchener from the German word "Einfühlung" which means
"feeling together with" (Goldstein & Michaels, 1985). The
early Greek word "empatheia" means a strong feeling of
connection with another person, with a quality of suffering.

Empathy in the general sense may refer to the process of understanding others (Allport, 1963) or to a "connectional quality" which has to do with the meaning of being human (Barrett-Lennard, 1981). For example, one person may imagine another who has suffered a tragedy as feeling sad, because she herself has felt sad, although the circumstances for the two individuals which give rise to the feeling may be very different. This felt sense of "putting oneself in another's shoes and understanding how the other is thinking and feeling" can occur without two people necessarily interacting.

Observational empathy (i.e., being emotionally moved while observing others and not necessarily interacting with them), is a common everyday experience, and "may make the difference between a world of profound alienation or danger for humankind, and a progression toward the common experience of humanity as familiar" (Barrett-Lennard, 1981, p. 98). Indeed, some people hold the view that empathy can help to resolve tensions not only between individuals, but among nations and terrorist groups as well (Gladstein, 1987).

In the early 1950s, Carl Rogers presented the first therapeutic application of the word "empathy" at the time when he led the humanistic movement in psychology. The term became well known after Rogers introduced empathic understanding as one core attitudinal condition of his client-centered (later known as person-centered) psychotherapy. His definition of empathy was "to perceive the internal frame of reference of another with accuracy, and with the emotional components and

meanings which pertain thereto, as if one were the other person, but without ever losing the 'as if' condition" (1959, p. 210). According to Rogers, empathy is not only a basic element of effective interpersonal relationships, but also one of the three essential characteristics of a successful therapeutic relationship, along with helper genuineness and unconditional positive regard. Although Rogers suggested that the three are essential, he was of the opinion that empathy was of prime importance.

From Roger's perspective, empathy is vital for any therapeutic interaction. If a helper is empathic, that is, acknowledges the helpee's inner world of feelings and meanings, and communicates this understanding, then the helpee feels accepted and safe enough to continue self-exploration, thus allowing positive change to occur. Rogers believed that when the helpee experiences this caring ". . . the growthful potential of any individual will tend to be released . . ." (Meador & Rogers, 1982, p.131). Research has revealed that effective therapists, regardless of their theoretical orientation or training, convey empathic understanding to their clients (Baruth & Huber, 1985). Empathy, then, is a crucial element which has application in interpersonal helping relationships where the healthy psychological growth of individuals is a goal.

Elliott (1982) observed that "empathy is probably the most widely cited and studied process variable in counselling and psychotherapy literature" (p. 379). However, as a number

of scholars have noted, the concept of empathy is both complex and elusive (e.g., Batson et al., 1987; Gladstein, 1987; Goldstein, & Michaels, 1985). Batson et al. (1987) have said "Psychologists are noted for using terms loosely, but in our use of empathy we have outdone ourselves," (p. 19). Hackney (1978) pointed out that by 1968, in the counselling psychology literature alone, there were 21 definitions of empathy.

While Rogers' definition focused more on the empathic state or condition of a helper, Truax and Carkhuff (1967) included emphasis on the communication of empathic understanding, that is, behavioral and verbal expressions by the helper, in their definition of empathy. Thus there was a shift of emphasis from internal state to external skill, from qualitative condition to quantifiable skill (Hackney, 1978).

As the definitions of empathy since the introduction of the therapeutic meaning of the term by Rogers evolved and moved away from a qualitative attitude toward a quantifiable process, training procedures changed in this direction also. Empathy training models began to focus less on helper attitudes and more on behavioural helping skills (Kurtz & Marshall, 1982). Although the core conditions of Rogers' theory have been emphasized as key elements in widely practised helping models such as those of Carkhuff (1969), Gazda, Walters, and Childers (1975) and Egan (1986), the emphasis of these training models appears to be on developing helper communication skills.

Barrett-Lennard (1981) suggested that, in order to fully understand the concept of empathy, it must be viewed as a process, not only as verbal communication by the clinician. The process of empathy involves three distinct phases. Phase one refers to the inner process of empathic listening and understanding by the clinician. Phase two refers to the communicated or expressed empathic understanding by the clinician. The third phase of the empathy cycle is received empathy by the client. This empathy cycle takes into account both affect and cognition as well as the experience of both client and clinician.

Several instruments have been developed designed to measure the various aspects of empathy. Barrett-Lennard developed the Empathic Understanding Scales which are part of the Relationship Inventory that measures the first and third phase of empathy cycles. These subjective scales are completed by both the helper (phase one) and helpee (phase three). Truax and Carkhuff (1967) hold the view that empathy may be defined in terms of the helper's behaviour alone, and they developed a 5-point rating scale which measures phase two of the empathy cycle.

The rating scales developed by Barrett-Lennard and Truax and Carkhuff are the two most common instruments used to measure empathy. Together they are effective in measuring the effectiveness of an empathy training model because they measure all components of the empathy cycle. Little research however, has been done to test the validity of the empathy

cycle, and the effects of empathy training for medical students on the three phases has not been examined. In fact, Gladstein (1987) is of the opinion that well-founded empirical evidence in the area of empathy is lacking.

Empathy in the Physician-Patient Relationship

One of the goals of both the biopsychosocial model and the patient-centred clinical method in family practice appears to be for physicians to achieve an understanding of patients' experiences of their illnesses (Levenstein et al., 1986; Weston, Brown, & Stewart, 1989) and to gain some insight into patients' "lifeworlds" (White, 1988). Understanding patients from their point of view gives information to physicians about the factors involved in illness. Levenstein et al. (1986) have pointed out that the idea of a patient-centred approach is similar to Rogers' person-centred approach in counselling. One of the goals of both is to understand patients from their point of view. One of the most important ways to accomplish this goal would appear to be to develop a strong sense of empathy for patients because, according to Rogers, empathy is the ability to understand the "internal frame of reference of another" and communicate this understanding in terms of feelings and meanings. Carkhuff (1969) wrote of the general importance of empathy in the helping process:

> Empathy is the key ingredient of helping. Its
> explicit communication, particularly during early
> phases of helping is critical. Without an empathic
> understanding of the helpee's world and his
> difficulties as he sees them there is no basis for
> helping. (p. 173)

The ability of physicians to project empathic understanding may be particularly important for a number of reasons. First of all, patients are now taking more responsibility for their health and they have ideas and are making more decisions about what kind of medical treatment they want (Tuckett et al., 1986). Patients want their physicians to show caring, support, and concern towards them (Ben-Sira, 1980; Campion, 1987, Korsch & Negrete, 1972; Wolinsky & Steiber, 1982). A study of 800 interactions between physicians and mothers who brought their children to a pediatric clinic showed that the main reasons for mothers' dissatisfaction were physicians' lack of warmth and failure to show interest in the mothers' concerns (Korsch & Negrete, 1972). Empathy is a way of demonstrating interest and support towards patients.

A second reason physicians need empathy skills is that many patients expect help from physicians in managing their psychosocial concerns. Studies have shown that patients want to be asked about (Yaffe & Stewart, 1986) and provided help with their psychosocial problems by their family physicians. Indeed a high percentage of patient visits in primary care settings have a psychosocial component (Baker & Cassata, 1978; Good et al., 1987; Hansen et al., 1987; Herbert et al., 1986).

Psychosocial problems may be the primary or secondary complaint (Frowick, Schank, Doherty, & Powell, 1986). Bernstein and Bernstein (1985) wrote: "As Rakel (1977) points out, primary care physicians need to be prepared to deal with emotional problems since patients tend to cast them in the counsellor role, prepared or not" (p. 137).

It has been documented that physicians need training in counselling skills (Hansen et al., 1987; Jaffe, Radius, & Gall, 1988). A group of participants at the 1979 National Conference of Family Practice Residents ranked counselling skills as the area from behavioral sciences which was most relevant to family medicine (Shienvold, Asken, & Cincotta, 1979) . Agras (1982) suggested that physicians must be able to identify those situations in which patients need counselling.

Physicians have identified that they do not have the skills to counsel patients, but they have acknowledged they need them. For instance, in a survey conducted on 151 physicians, which included 45 general and family physicians, 44 internists, 49 surgeons, and 11 obstetrician-gynecologists, 85 percent agreed that counselling is important and 87 percent agreed that physicians have an obligation to counsel. However, only 21 percent agreed that physicians knew how to counsel and only 12 percent agreed that they themselves were effective in counselling (Lewis et al., 1986). Empathy, which is a core skill in most counselling models, can be useful to physicians in situations requiring counselling.

A third reason that it is important for physicians to convey empathic understanding to patients is that many clinical encounters are affectively laden such as in the care of terminally ill people and in communicating with grieving families (Cassidy, 1986; Fletcher & Sarin, 1988; Fuller & Geis, 1985; Tolle, Bascom, Hickam, & Benson, 1986). Effective communication is also important when interacting with angry patients. For example, in a survey of physicians concerning the risk and incidents of abuse by aggressive patients, the respondents indicated that good interpersonal skills were the most important factors in limiting aggressive incidents (D'Urso & Hobbs, 1989). Empathy has been specifically suggested as a valuable communication skill physicians can use when interacting with terminally ill cancer patients (Kinzel, 1988), depressed patients (Peteet, 1979), and angry patients (Lane, 1986).

Intense Emotions as Sources of Stress for
Medical Practitioners

Working with highly emotional aspects of patient care such as grief, anger, fear, and death is a source of stress for physicians (Herbert & Grams, 1986; McCranie et al., 1982; McCue, 1982). Intense emotions have been found to be stressful for medical students as well. For instance, Firth (1986), in a study of fourth year medical students, found that two of the four categories most commonly reported as stressful

were talking to psychiatric patients, and dealing with death and suffering.

The stress caused as a result of working with highly emotional aspects of patient care can evoke intense emotions for physicians and medical students. Powers (1985) suggested that problem patients can evoke negative feelings such as frustration and apathy on the part of physicians. Medical students have difficulty addressing emotional issues with patients as well as coping with their own emotions during such interactions (Batenburg & Gerritsma, 1983). Knight (1983) found that medical students experienced feelings of insecurity, anxiety, hostility, and destructive argumentativeness, as well as a sense of guilt and helplessness when confronted with seriously ill or dying patients.

If physicians and medical students have not learned to deal with emotionally intense encounters, they may also feel embarrassed and ill at ease (Slevin, 1987). Buckman (1984), in his discussion of physicians' feelings of inadequacy when dealing with patients' emotional reactions to medical treatment stated:

> Not knowing how to deal with the consequences of
> what we do breaks one of the most important rules of
> accepted medical behaviour. It makes us inadequate
> in our own eyes and those of others. There is also
> the embarrassment. . . . (p. 1598)

Other reactions that physicians might have when presented with highly emotional and stressful aspects of patient care include

denying their pain (Buckman, 1984; Slevin, 1987), appearing aloof or insensitive, avoiding the obviously painful issues, or being inappropriately optimistic (Heavey, 1988). They may interact with patients or family members in a very harsh manner or be overly hasty in emotional situations because of their discomfort (Fletcher & Sarin, 1988).

A further reason which contributes to emotionally intense encounters being stressful for physicians is that they may not have had any training to cope with their own reactions. By being trained in the traditional medical model they may have been taught to not show emotion. Thus, they may be overwhelmed by their own feelings such as guilt, shame or a sense of failure if they are not able to offer a cure for a situation (Heavey, 1988). Cassidy (1986) pointed out that part of the distress caused by dealing with intense emotions associated with terminal illness (e.g. fear, grief, anger) is due to the fact that caregivers are reminded of their own mortality.

Such stress may lead to emotional impairment of medical students. For instance, Smith, Denny, and Witzke (1986) reported that, over a 5 year period, 55.5% of internal medicine training programs granted leaves of absence to medical residents due mainly to depression. Girard et al. (1986) also found that depression and fatigue increased while satisfaction with the decision to become a physician decreased during education. Firth (1986) concluded that "stress among

medical students should be acknowledged and attempts made to alleviate it" (p. 1177).

Need for Empathy Training

There is a need to train medical practitioners in communication skills to use when interacting with patients in emotionally intense situations (Herbert & Grams, 1986). Branch (1983) suggested that the reason physicians feel so uncomfortable in emotionally intense situations is that they have not received enough training to deal with such encounters. Medical students should also receive systematic training in how to deal specifically with emotionally laden encounters (Hornblow, Kidson, & Ironside, 1988; Sanson-Fisher and Maquire, 1980) and in counselling skills (Lewis & Freeman, 1987). Poole & Sanson-Fisher (1979) suggested that empathy is not being acquired by medical students or residents and they concluded that the skill of empathic communication does not necessarily develop with experience. In fact Engler, Saltzman, Walker, and Wolf (1981) found that as medical students advanced through training, their medical-technical skill increased, but the ability to relate well to patients interpersonally decreased if students were not involved in appropriate communication training.

Medical students who have taken a basic interviewing skills course have indicated they would like further training to acquire skills to use when dealing with patients' emotions (Batenburg & Gerritsma, 1983). As was discussed earlier,

coping with emotionally intense encounters has been shown to be a source of stress for medical students (Firth, 1986). And Burnett and Thompson (1987) suggested that the problems which medical students experience when talking to patients in their early clinical years will not be resolved if the issues are not dealt with then.

Even though there seems to be agreement in the literature that effective physician-patient communication is crucial, and empathy is a desirable characteristic of physicians, and one which can be developed, Wakeford (1983) pointed out that introducing courses on communication skills into undergraduate medical education in the United Kingdom is often not supported. A common reason for this, he suggested, is that there is little proof that teaching such skills will help the medical students (p. 245). There have been articles which suggested how patients benefit from effective physician-patient communication, and how it can lead to increased satisfaction or compliance. There is little evidence, however, which suggests that teaching communication skills benefits medical students directly. One of the aims of this study, in addition to measuring the development of medical students' empathic responses, was to examine whether their stress levels in emotionally intense encounters would decrease, as a result of empathy skills training.

Effectiveness of Empathy in Emotionally-Intense Situations

Empathic responding may be a particularly useful and relevant intervention for medical practitioners to use in emotionally laden encounters. By using the skills of empathic communication, medical students and physicians may feel confident knowing that, in situations where no concrete medical treatment can solve a patient's problem, they have useful skills which can help patients. As one subject in this study wrote "The thrust of medicine is to do something." In a study by Putnam et al. (1988) in which interviewing techniques were taught to medical residents, the residents reported feeling worried that patients would bring up emotional issues with which they could not deal. However, these researchers found that the underlying reason for the residents' anxiety was that the residents were concerned that they could not "do something" to solve patients' psychosocial concerns.

Even though empathic responding may not seem as concrete as a biochemical event or a medical procedure, which may be used to heal a physical wound, it may be therapeutic when patient's have an "emotional wound" (C.P. Herbert, personal communication, 1989). In emotionally intense situations when the patient knows that the physician cannot solve his or her problems, the patient may be appreciative of the opportunity to express feelings and receive some empathic understanding (Lidz, 1976). Rogers believed that empathy conveyed through a therapeutic relationship was curative and that "it is the

experience of feeling understood itself that effects growthful change" (Meador & Rogers, 1979, p. 152).

In addition to believing that they are doing something helpful for their patients, medical practitioners may also find they can remain more objective in emotionally intense encounters. One stressor for physicians appears to be attempting to prevent themselves from becoming too deeply emotionally involved with their patients (Korsch and Negrete, 1972). The practice of empathic responding means "putting yourself in the other person's shoes" while never losing your own perspective. Empathy is not sympathy which is feeling sorry for the other person, nor is it identification which is feeling the same as the other person. Rather, empathy is a feeling with another person, which means having a continuous awareness your own experience (Muldary, 1983). Rogers' spoke about experiencing another person's feelings as if they were your own, but never losing the "as if" aspect. Thus, the skill of empathic responding may enable physicians and medical students to acknowledge patients' difficult and intense emotions while keeping their own perspective, which may help decrease their stress levels.

During the past decade, much has been written about patients' reactions concerning affective aspects of interactions with their physicians. However, relatively little emphasis seems to have been placed on emotional reactions of physicians in such emotionally-laden encounters (Buckman, 1984). Physicians themselves are suggesting that,

it may be helpful for physicians to become aware of their own feelings in clinical encounters (Longhurst, 1988; Zinn, 1988) and this may be another way to increase humanism. As was stated by Gorlin and Zucker (1983) "awareness of one's own feelings and the ability to cope with them constructively is an essential aspect of humanistic medical teaching" (p. 1061). Indeed Longhurst (1988) suggested that self-awareness is "the neglected insight" (p. 121), and he suggested that self awareness builds compassion which is so helpful in the physician-patient relationship.

One advantage of empathy training may be that through role-playing and other exercises, trainees learn to become aware of emotions, both their own and patients'. By attending to patients' feelings through both role reversal and empathic responses, trainees attend to affect in addition to medical aspects of the interviews. Through awareness of their own feelings, physicians' abilities to learn empathic responding may be enhanced. Also it might help to alleviate the stress of emotionally intense situations for physicians to acknowledge their own feelings rather than to try to deny or suppress them. By being aware of their own feelings, physicians may be in a position to better cope with patients' emotional reactions. Also Smith (1986) suggested that, in addition to teaching cognitive aspects of improving the physician-patient relationship, there is a need to develop teaching methods in order to help medical students become aware of and manage their emotional responses to patients.

However, as Mengel and Mauksch (1989) pointed out, it remains to be empirically demonstrated that self-evaluation by the physicians of their own feelings would be related to improvements in their relationships with patients.

Previous Research Examining Empathy and Stress

While a number of studies were found in the literature on the subjects of either empathy or stress, few attempted to link the two topics. Also, no intervention studies were noted which examined how the two constructs may be causally connected.

Letourneau (1981) compared the levels of stress of mothers who were physically abusive with their children with mothers who were identified as not abusive. Levels of stress were measured by the Schedule of Recent Life Experiences devised by Holmes and Rahe (1969). Two indices were used to measure empathy in the subjects, the Hogan Empathy Test (Hogan, 1969) and a questionnaire devised by Mehrabian and Epstein (1972). Letourneau predicted that mothers who experienced high empathy and low stress would be much less abusive than mothers who experienced low empathy and high stress. T-tests revealed that the more abusive mothers scored significantly lower on measures of empathy. However, the abusive mothers did not score significantly higher on measures of stress. Further, Letourneau found that empathy was negatively correlated with aggression, a finding which

supported her theory that empathy serves as a mediator for the stress - abuse relationship.

Letourneau also compared the categories of high empathy and high stress to low empathy and low stress to assess whether empathy or stress was the more important predictor of abuse. Following the categorization of subjects around the grand mean, Fisher's exact test was used to examine the conditions under which abuse was more likely to occur and to examine the interaction between empathy and stress. Letourneau found that the percentage of abusive mothers in the category of low empathy and low stress was much higher that these mothers in the category of high empathy and high stress. Further, for mothers who scored low in empathy, the percentages of abusive mothers in the categories of high and low stress were not significantly different. The degree to which mothers were empathic as opposed to how much stress they experienced seemed to be the more critical factor in predicting abusive behaviour. Letourneau concluded that "the fact that many mothers apparently function adequately in the presence of high stress, or inadequately even when experiencing low levels of stress, suggests that empathy and stress somehow interact and that empathy serves a mediating function" (p. 387).

In Letourneau's study, however, only the stressful life events indicated by the subjects were measured. Coping dispositions or strategies were not investigated as suggested by Monat and Lazarus (1985). Nor was a behaviourally-based

measure of empathy used; Hogan's empathy scale is a self-assessed trait scale. Jarski et al. (1985), in a comparison of four empathy instruments in simulated patient-medical student interactions, found that empathy which was assessed on the Hogan's Scale did not correlate significantly with any of the behavior-based measures. The present study used empathy measures which are recommended in the literature to examine physician-patient interactions in an attempt to gain a better understanding of the relationship between empathy and stress.

Batson et al. (1987) suggested that empathy and distress (i.e., the emotion experienced as a result of stress) are qualitatively very different emotions. When a person perceives another who is suffering, he/she can have one of two reactions. One response can involve feelings of personal distress (e.g., upset, worried) and the other response can involve feelings of empathy (e.g., compassion, tenderness). Distress may be viewed as evoking an egoistic motivation to help another in need. That is, the desired consequence is to reduce one's own aversive response. Empathy, however, may evoke an altruistic motivation to help another. That is, the ultimate goal is to help the other person in need; to reduce one's own distress is not the primary motivation. Empathy may be viewed as more other-focused, while distress may be viewed as more self-focused. This two-part model is similar to the view held by McDougall (1908). A more recent view presented by Hull (1943) was that empathy and distress are similar in that the ultimate goal of both emotions is to reduce one's own

level of arousal whether or not this process involves helping

another person in need.

Batson et al. (1987, 1988) provided empirical evidence in

support of the view that empathy and distress are

qualitatively different emotions and that experiencing empathy

toward a person is associated with the ultimate goal of

helping that person. They suggested that further research is

needed to support the view that distress leads to egoistic and

empathy leads to altruistic motivation to help.

Little is known about the function of empathy in the

interaction of empathy and stress as suggested by Letourneau

(1981). Folkman and Lazarus (1988) suggested that coping

affects emotion possibly by acting as a mediator.

Traditionally, theory and research focused on how emotion

affects coping, but little attention has been given to

studying whether the reverse is true. Folkman and Lazarus

suggested that coping affects emotion in a bi-directional

manner, that is, each affects the other. First a situation is

appraised as stressful. This generates emotion which in turn

influences coping processes which alters the person-

environment relationship. This reappraised person-environment

relationship results in a change in emotion. Empathic

responding may be evaluated by medical students as an

effective means of coping which, in turn, decreases the

stressfulness of the encounter. Thus empathic responding may

be viewed as a mediator to reduce the stress of emotionally

intense clinical encounters. More research however, is needed

to clarify the nature of the buffering aspects of empathy in stressful situations.

Hypotheses Related to Empathy and Stress

The following hypotheses were tested in the present study.

Hypothesis 1A: Subjects who receive empathy skill training will demonstrate significantly higher scores on measures of empathy than will subjects who are in a wait-list (delayed-treatment) control group.

Hypothesis 1B: Subjects who receive empathy skill training will demonstrate significantly lower scores on a measure of perceived stress than will subjects who are in a wait-list (delayed-treatment) control group.

Hypothesis 2Ai: Subjects who are in the post-training follow-up group will demonstrate significantly higher scores on measures of empathy than will subjects in the wait-list control group.

Hypothesis 2Aii: Subjects who are in the post-training group will maintain scores on measures of empathy during the follow-up time period.

Hypothesis 2Aiii: Subjects who are in the wait-list (delayed-treatment) control group will not increase in scores on measures of empathy during the wait-list control time period.

Hypothesis 2Bi: Subjects who are in the post-training follow-up group will demonstrate significantly lower scores on

a measure of perceived stress than will subjects in the wait-list control group.

Hypothesis 2Bii: Subjects who are in the post-training group will maintain scores on a measure of perceived stress during the follow-up time period.

Hypothesis 2Biii: Subjects who are in the wait-list (delayed-treatment) control group will not decrease in scores on a measure of perceived stress during the wait-list control time period.

Hypothesis 3A: Subjects who receive empathy skills training at different points in time will increase in scores on measures of empathy.

Hypothesis 3B: Subjects who receive empathy skills training at different points in time will decrease in scores of a measure of perceived stress.

Previous Research Related to
Exploratory Analyses

Hardiness

Antonovsky (1979) suggested that research in stress and illness has begun to shift toward the study of resistance resources which help a person cope with stressful events. Folkman and Lazarus (1980), defined two important processes involved when a person is affected by a stressful occurrence in the environment. One is appraisal which refers to the cognitive processes used to evaluate the stressful situation and the options available to deal with it. Appraisal or

evaluation of the stressful situation has been discussed in terms of the Perceived Stress Questionnaire.

The second process involves the coping approach to the appraisals of stress. The coping responses may refer to actual processes used, such as problem-focused or emotion-focused efforts (Folkman, Lazarus, Gruen, & DeLongis, 1986), or they can refer to antecedents of coping such as personality characteristics or traits such as hardiness (Kobasa, 1979). May and Revicki (1985) have illustrated a stress and coping model for primary care physicians in which two of the four moderators of stress mentioned, which may determine successful or unsuccessful coping, were coping skills and personality style. May and Revicki (1985) specifically stated that hardiness is one example of a personality style which may be a critical moderating factor in coping with the stress of medical practice. Fain and Schreier (1989) recommended that the personality variable of hardiness should be considered in the selection of medical personnel for disaster or emergency situations.

Hardiness was conceptualized by Kobasa (1979) as having three components; commitment, control and challenge. Commitment refers to being actively involved in one's growth and being in touch with one's own feelings and values as opposed to being alienated from one's self. Control refers to having a belief that one is able to influence one's environment rather than being totally influenced by others.

Challenge refers to viewing life as having opportunities for change and growth rather than threats to security.

Kobasa's (1982) research suggested that the personality characteristic of psychological hardiness functions as a resistance resource in buffering the effects of stressful events. Kobasa, Maddi, and Kahn (1982) viewed this concept from an existential perspective. Hardiness was considered to be a moderator of stress because stressful events would not be appraised to be uncontrollable or meaningless.

Just as empathic skill can be learned, Kobasa (1982) suggested that the personality characteristic of hardiness or "stress resistance" could be developed. She recommended that research be conducted to gain an understanding of how hardiness develops, and indicated that there is a need to devise interventions to develop this trait. Although studies have examined whether health professionals who have high levels of hardiness allowed them to better cope with work stress (e.g. Maloney & Bartz, 1983), no studies were found which examined whether an intervention (designed to reduce the stress of medical situations) was associated with a change in hardiness or "stress-resistance." One of the goals of this study was to investigate whether hardiness would develop in medical students who received empathy skills training.

Ways of Coping

In order to investigate the type of responses used by
interns to cope with the stress of internship, Donnelly (1979)
devised a Ways of Coping Scale based on the coping strategies
which were reported by the interns. The strategies fell into
the two categories of (a) non-palliative or problem-focused
coping (problem-solving actions to try to alleviate the stress
or alter the environment) and (b) palliative or emotion-
focused coping (actions to try to alleviate the emotional
distress caused by the situation). Donnelly found that the
interns who had higher ego development used strategies from
both categories in coping with the stress of internship.
Subjects who had lower ego development used mainly non-
palliative (problem-focused) coping strategies. Further, the
interns who had a combination of high ego development and used
both problem-focused and emotion-focused coping strategies
received the highest clinical performance ratings by a group
of university faculty and house medical officers.

The subjects with low ego development who used mainly
problem-focused coping were more concerned with trying to
alter the environment to cope with stress because, perhaps,
they viewed stress as being caused more by external events.
The subjects with high ego development who used both types of
coping strategies, on the other hand, tried to alter
themselves as well as the environment. The interns in the
high performance group were flexible in their use of coping
strategies and had a wider range of responses to stress.

Donnelly suggested that medical education should make attempts to try to design ways to reduce the stress of medical education and to increase coping abilities of students. She recommended that further research examine coping styles of students and the contribution of coping strategies to the stages of medical education, because coping strategies used during medical training may predict a future ability to deal with stress in medical practice.

No further studies were found which used Donnelly's Ways of Coping Scale. However, the problem of stress among medical students is the subject of recent research. For instance, Spiegel, Smolen, and Hopfensperger (1986) who examined medical student stress and how it related to clinical performance found an inverse relationship between medical students' ratings of interpersonal conflicts and measures of their academic performance. They suggested that, in order to understand this relationship further, research is needed on how coping resources, among other factors, contribute to students' performance in medical school. Vitaliano, Masuro, Mitchell, and Russo (1989) pointed out that while many studies have examined the reactions of medical students to stressful situations, (e.g., suicide, drug abuse), few have examined individual vulnerabilities and internal resources of medical students which influence how they cope with the stress of medical training. These scholars recommended that interventions should be designed to assist medical students cope with stress. One of the purposes of this present study

was to investigate whether the number of coping strategies changed for medical students who received the intervention of empathy skills training.

Methodological Issues Identified in
Relevant Previous Research

In 1980, Carroll and Munroe published a review of the empirical research on instructional programs for teaching clinical interviewing. They reported that the great majority of these studies had employed weak research designs. Therefore, the validity of reported findings must be questioned. Many of the studies were One Group Pretest-Posttest Designs, that is, pre-experimental designs, and thus were susceptible to many confounding factors. Studies often used nonequivalent control groups, that is, the assignment of students to the experimental condition was by means of intact groups rather than by random assignment.

Only five out of twenty-seven studies which compared interpersonal skills training with no interpersonal skills training incorporated true experimental designs. In these studies, participants were randomly assigned to groups, and were tested before and after instruction. Carroll and Monroe suggested that there is a need to replicate studies and control for potential confounding factors such as history, practice, maturation and interaction effects.

Sanson-Fisher et al. (1981) also published a review of the methodology of studies designed to teach communication

skills specifically to medical students. They conducted a
survey of experienced researchers in order to determine what
constituted adequate methodology for such studies. Among the
criteria indicated for adequate studies of the teaching of
communication skills were: a) random allocation or matched
control group, b) assessments of medical students' abilities
using direct methods (e.g., interviews and reliable test shown
to measure skill) versus indirect measures such as pencil and
paper tests, or comments, and c) estimates of reliability of
ratings.

To examine how adequately studies were designed to teach
communication skills to medical students using the criteria
listed above, Sanson-Fisher et al. reviewed 46 studies. They
found that 28 (61 percent) of the studies were descriptive,
containing no experimental evidence that the teaching methods
improved communication skills. Of the 18 studies which were
determined to be experimental, few met the criteria. For
instance, out of the 18 experimental studies, only half used a
control group, and only 39 percent used random allocation or a
matched control group. Only 11 percent presented and
described a statistical index of reliability. Sanson-Fisher
et al. concluded that "those who advocate new approaches must
demonstrate that they are effective and superior to existing
methods. They can only do this if they adopt an adequate
methodology" (p.37). DiMatteo (1979) echoed the suggestions
of Sanson-Fisher et al. (1981), as he also reported that many
studies lacked sound evaluation techniques due to such factors

as inadequate experimental designs and lack of control groups.
He suggested that future research must be designed to provide
physicians with effective methods of developing interpersonal
aspects of patient care such as empathy. DiMatteo (1989)
suggested that medical educators will probably consider the
recommendations of social scientists concerning such things as
communication skills only if the information is grounded upon
"methodologically sound research findings" (p. 29).

Recommendations have been made by other researchers about
considerations when designing research to evaluate the
effectiveness of communication skills training for medical
students and physicians. For instance, there is a need to
investigate the effects of training on ratings of both the
trainees and the simulated patients (Carroll & Munroe, 1980).
Such evaluation outcome measures should be directly relevant
to patient variables such as satisfaction (Carroll & Munroe,
1980, DiMatteo, 1979). A suggestion made by other
investigators included the objective evaluation of skills of
trainees (Betchart et al., 1984). Kahn et al. (1979) in their
review of interviewing skill courses found that 87 percent
used indirect methods such as student satisfaction, while only
a few used criterion-referenced instruments or direct
observation of skills. Gask et al. (1988) suggested that few
studies evaluated change in interviewing by the rating of
skills using videotaped sessions with real or simulated
patients. Jarski et al. (1985) suggested that studies
designed to examine changes in empathy should have objective

measures by external raters which can be compared with the perceptions of patients because patients' ratings are closely related to therapeutic outcomes.

Another recommendation made by Shore and Franks (1986) was that while most instruments examine patients' satisfaction regarding encounters with physicians, the examination and study of physician satisfaction has been neglected. Physician satisfaction with clinical encounters would be an important outcome measure since it would provide a more complete analysis of physician-patient interactions. Such a measure would lend empirical support in response to Wakeford's suggestion that the reason communication skills courses are not taught more frequently is that there is no evidence which shows how programs help medical students.

I reviewed the literature to examine if studies employed methodology which included the criteria discussed above. While several of these studies examined levels of empathy in medical students and physicians and correlated them with other measures through a one-time testing occasion (e.g., Dornbush et al. 1984; Evans, Kiellerup, Stanley, Burrows, & Sweet, 1987; Hornblow, Kidson, & Jones, 1977; Linn et al. 1987), few intervention studies designed to increase empathy levels using pre- and post-measures were noted.

Some studies (e.g., Dickinson, Huels, & Murphy, 1983; Wolf, Woolliscroft, Calhoun, & Boxer, 1987) reported the effects of a general communication skills training courses on measures of empathy. For instance Wolf et al., 1987, in a

study of communication skills training for first year medical
students, included in their course strategies for responding
empathically. They found that average scores on an
understanding scale which measured preferences for written
empathic responses of patients emotional needs increased
significantly after training. However, direct observation of
skills was not examined. Dickinson et al. (1983) examined
empathy of pediatric house officers as rated by observers on
the Clinical Assessment Scale for Pediatric Interviewing
before and after an interviewing course. They found that
empathy scores did not increase.

Weihs and Chapados (1986) conducted a study of the
effects of an interviewing skills course, based on Carkhuff's
model, on verbal responses by first year medical students.
The study involved a treatment group (n = 16) and a control
group (n = 16). Scores based on Carkhuff's 5-point model were
significantly higher after training for the treatment group as
compared with the control group. These results are similar to
the ones presented by Poole and Sanson-Fisher (1979) who
demonstrated a significant increase in empathy by objective
raters based on Truax and Carkhuff's 9-point scale after an
empathy training program for preclinical medical students as
compared with a control group.

Kramer et al. (1989) used an observational schedule
developed by Alroy, Ber, and Kramer (1984) to observe verbal
and non-verbal supporting behaviours of which empathic
responses were a part. Fifth year Israeli medical students

were observed before and after a course in empathy training and results showed that there was a significant and lasting increase over time in the number of supporting behaviours and a significant decrease in number of rejecting behaviours. The reverse was true for the control group.

Elizur and Rosenheim (1982) conducted a study also of Israeli medical students to determine whether a psychiatric clerkship combined with group experience, compared to a clerkship with no group experience had any impact on levels of empathy. These researchers used Mehrabian's Emotional Empathic Tendency Scale (Mehrabian & Epstein, 1972) as a written self-rated empathy scale as well as ratings by peers using a sociometric technique. They found that the students who participated in a group experience had significantly higher scores on the Empathic Tendency Scale than those who had the clerkship alone. Further, after the clerkship, there was a significant correlation between self-reported and other-reported empathy for the students with group experience. The authors concluded that the group experience contributed to increased sensitivity and a deepening of empathy.

None of the four studies mentioned above nor any other study was found which evaluated the effects of an empathy training program using students' self-assessment of skills in comparison to the assessments of simulated patients. This is important because patients' responses may be linked to outcome and therefore have important implications for the understanding of physician-patient relationships.

Jarski et al. (1985) presented an argument that "studies should be devised where the results of empathy ratings by external observers can be compared with the perceptions of patients and objective therapeutic outcomes" (p. 550). Based on his findings, he recommended the Barrett-Lennard Relationship Inventory for use in medicine. He also suggested that objective ratings of empathy, such as Carkhuff's, 1969 rating scale, be completed by professionals trained in scoring them. In spite of Jarski et al.'s suggestions, and the fact that the Barrett-Lennard and Carkhuff's Scales are the most extensively used subjective and objective measures of empathy (Barrett-Lennard 1981), no study was found where they were all used as outcome measures to determine the effectiveness of empathy training programs for medical students or physicians.

In view of the above discussion and based on recommendations of previous researchers, this study was designed to incorporate recommended methodological features including using a control group, direct assessments of communication skills with criterion-referenced instruments, students' assessments of their own communication skills using reliable instruments which could be compared to assessments by simulated patients, and students' responses to the interview as measures of the impact of empathy training.

CHAPTER III

Method

Introduction

This chapter opens with the rationale and details of the experimental design chosen to test the hypotheses in this study. Information about people who participated in the study is followed by a description of measures and other materials required for the execution of the research. Details concerning the experimental procedures are included and a description of data analyses close the chapter.

Experimental Design

The design employed in this study was a crossover control design for two equivalent groups. In Campbell and Stanley's (1963) terminology the design is illustrated as:

$$R \quad O_1 \quad X \quad O_2 \quad \quad O_3$$
$$R \quad O_4 \quad \quad O_5 \quad X \quad O_6$$

where R indicates random assignment of subjects, X indicates training, and O represents testing using the research measures. In this design all subjects are measured on the dependent variables and randomly assigned to one of two groups. The first group receives the treatment (experimental group), while the second group serves as a wait-list control. Measures are then collected for all subjects, halfway through the study. The treatment crossover then takes place and

subjects in group two receive treatment. The first group receives no further intervention and so serves as a control or follow-up group. Measures are collected a third time, completing the procedure.

The crossover design allows for an examination of the effects of treatment compared with a no-treatment condition for all subjects. (Epstein & Tripodi, 1977). Campbell and Stanley (1963) place such a design under the heading of "counterbalanced" design. This type of design is referred to also as a "change-over design" (Gill, 1978; Neter & Wasserman, 1974) a "cross-over design" (Cochran & Cox, 1957, Neter & Wasserman, 1974), and a time-lagged crossover or crossover comparative experimental design (Epstein & Tripodi, 1977).

The crossover control design has several advantages. First, it is a "true" experimental design because subjects are randomly assigned to treatments. Random assignment helps a researcher make causal inferences because it is the best way to ensure that the groups are genuinely comparable. In other words, it can be assumed that the features of subjects in one group will be counterbalanced by comparable, but not identical, features of subjects in the other group (Cook & Campbell, 1979). Also because one of the "treatments" used in this crossover design is a no-treatment control, and because subjects are randomly assigned to the two groups, threats to internal validity (i.e., factors identified by Campbell and Stanley, 1963) are controlled (Epstein & Tripodi, 1977; Cates, 1985). For instance, the effects of contemporary history and

maturation processes are limited and the effects of testing are reduced by assessing the control group.

Cook and Campbell (1979) identify four threats to internal validity that randomization does not rule out. These threats will now be identified and suggestions given as to why they are probably not valid threats to this study.

(1)   Imitation of Treatment - While it is true that there was no certain method to prevent the possibility of subjects who were involved in the second training period from learning about the details of the empathy training, the subjects who received the training first were asked not to reveal the nature of the training to the people in the delayed training group. Imitation of treatment is more likely to be a threat if two different types of training were to be used in the study.

(2)   Compensatory equalization - There was no need for compensation since every subject received the treatment; thus no inequality resulted from random assignment.

(3)   Compensatory Rivalry - All subjects received the same training. Each subject was tested individually in a one-to-one therapeutic interaction. Further, the type of emotion presented at each testing occasion was counterbalanced so that each subject had experience with each type of emotion. It would seem unlikely, then, especially since subjects were asked not to discuss details about the training to subjects in the wait-list group, that subjects would want to prove that their training group's performance was superior over the

other. I believe that because the one-to-one encounters of the testing occasions were somewhat stressful, that subjects did the best they could given their training. There were, in fact, no verbal expressions of such rivalry by the control subjects during the testing occasions.

(4) Demoralization in Groups - This may happen if subjects in a group learn that they will receive a less desirable treatment and thus they become resentful. Certainly individual subjects want to receive the more desirable treatment or else they may feel deprived when compared to the other group. However, in this study subjects knew they would all receive the same training.

In summary, Cook and Campbell (1979) stated that these four threats result from the "focused inequities that inevitably accompany experimentation because some people receive one treatment and others receive different treatments or no treatment at all" (pp 56-57). In other words there is a violation of what is fair and just. One of the advantages of this crossover design, and something that all subjects were told during the pretest interview, was that they were to receive equivalent treatment. That is, all subjects participated in the same empathy training and three testing occasions.

Cook and Campbell (1979) suggested that threats to internal validity are caused by atypical behaviour of subjects in a no-treatment control group or groups that receive less desirable treatments. They suggested the best way to ensure

that these threats do not operate in an experiment is to have direct measures for all groups of the process that the treatment was to effect in order to make a valid causal connection. Such measures were taken in this study, as indicated by the several dependent measures of empathy and distress which the empathy training was meant to influence. Also the behaviour of the no-treatment control group was examined to control for imitation of treatment. Furthermore, statistical procedures examined the presence of a group main effect to assess whether there was compensatory rivalry between groups. Thus, a further advantage of the crossover control design is that to some extent it controls for these four threats to internal validity that randomization does not rule out.

A second advantage, as Cook and Campbell (1979) pointed out, is that designs in which an effect can be demonstrated with two samples at different moments in time have the potential for extending construct and external validity. The built-in replication of the experiment in the second group of the crossover design makes it possible to infer that findings from the experiment can be generalized to other similar subject populations. A further advantage of the built-in replication in this design is that, for studies which have a small sample size, the problem of low power is partially overcome. Providing the treatment at different times for the two similar samples drawn from the same population confirms the findings (Cates, 1985).

A third advantage of this design is that all subjects receive the intervention. The denial of an intervention to subjects, especially in field studies, may be ethically and professionally unacceptable (Epstein & Tripodi, 1977). For instance, in this study, there may have been some emotional discomfort on the part of the medical students when they took the pretests because of the intensity of the emotions and subject matter. Therefore I thought that it would be unfair to have subjects complete testing only and not receive the training. In summary, Epstein and Tripodi (1977) stated that "the unique advantage of this (crossover control) design is that it provides the scientific rigor of a control group experiment without requiring any service denial to any agency clients" (p. 165).

As a number of scholars have indicated (e.g., Armitage & Hills, 1982; Millar, 1983), the crossover design has further advantages including economy of subjects and increased power. Because each subject provides more than one observation, fewer subjects are required for a within-subjects design than for a between-groups design. And not only does the crossover design in the present study have the advantage of having a control group, each subject also acts as his or her own control. Therefore, the source of error due to differences between subjects is removed as comparisons are made within subjects. Hills and Armitage (1979) stated, "A comparison of treatments on the same subject is expected to be more precise than a

comparison between subjects and therefore to require fewer subjects for the same precision" (p. 7).

A literature review revealed that few studies evaluating the effects of training utilized the crossover design. Repeated measures designs are the most commonly used designs when the effects of learning or transfer of training is of interest. Although repeated measures designs are common in learning studies, crossover designs may be under-utilized in research evaluating the effects of training. Given the advantages discussed above, this design should perhaps be employed more often.

Subjects

Populations and Samples

The target population in this study was medical students. The accessible population consisted of second year medical students at U.B.C. The actual sample consisted of volunteers from the second year medical class.

Recruitment and Selection

Following permission being granted by the U.B.C. Medical Faculty, the Behavioral Sciences Screening Committee, and Research Services, students were recruited from the second year medical class. A presentation was made to the entire class inviting the students to take part in a study, the purpose of which was to examine the various ways in which medical students respond to emotionally intense physician-

patient interactions. They were told they would have an opportunity to receive training in communication skills which would potentially enhance their ability to communicate with patients who were fearful, angry or grieving. Forty-one individuals indicated interest in the study. However, because the follow-up component of another study on communication skills training was being conducted concurrently, I was required to eliminate 17 subjects who were participating in the previous study. Of 24 volunteers who were available for the present study, 18 were still interested in participating when the training began. During the training 5 students felt it necessary to withdraw citing demands of medical training (e.g., exams) as the reasons. A t-test revealed that scores on the blocking variable for those subjects who withdrew did not differ from the pre-test scores for the 13 subjects who completed the study (p = .76). The 13 subjects who remained in the study completed all three testing occasions.

Selection of the Trainer, Raters, and Simulated Patients

Selection of the Trainer

A male who was a recent graduate of the U.B.C. master's program in Counselling Psychology was the empathy skills trainer. He had received at least 100 hours of intensive training in empathic responding, and he had had experience teaching empathic communication skills to groups. The same trainer was employed for all training sessions so that trainer

would not be an experimental variable which could confound the
results.

Selection of The Raters

One male doctoral student and one female master's student
in Counselling Psychology were the raters of empathic
responding as measured by the Carkhuff scale. Both had
received at least 100 hours of training in empathic responding
and were experienced in rating transcripts using the Carkhuff
method. The raters were blind as to which group the subjects
were in and blind to the nature of the experimental design.

Selection of the Simulated Patients

Individuals who were enrolled in the doctoral and
master's programs in the Counselling Psychology Department at
U.B.C. were the actors in the simulated physician-patient test
situations. From the doctoral program there were four males
and three females and from the master's program there were
three females and one male. Some of the same actors were used
across groups at each testing time, although the actors
sometimes differed at each testing occasion.

Supervision of the Trainer and Raters

I observed all training sessions and met with the trainer
before and after all sessions to discuss the training process.
I also met with the raters separately and reviewed the
Carkhuff scale with them before the rating procedure began.

Both raters rated all utterances in the study. An utterance
was defined as a medical student response of at least one
sentence separated by two simulated patient phrases or
sentences. The raters worked independently of one another and
rated the tapes at different points in time.

Research Measures

Carkhuff Empathy Rating Scale

Communicated empathy was measured by Carkhuff's (1969)
Empathic Understanding in Interpersonal Process 5-point Scale.
A level 1 response refers to one in which a helper obviously
does not show any sensitivity to another's expressed feelings
or experience. It detracts from the expressions of the
helpee. Level 2 refers to a response which indicates that the
helper shows some acknowledgement of the helpee's obvious
feelings and/or experiences, but does so in a way which
distorts the true meaning of what the helpee is expressing. A
level 2 response subtracts from what the helpee is attempting
to communicate. Level 3 refers to a helper's response which
is interchangeable with that of the helpee in that it
accurately expresses essentially the same feeling and content.
Responses at level 3 are considered to be minimally
facilitative empathic responses. A level 4 response adds to
the expressions of the helpee in that it acknowledges deeper
feelings of which the helpee may have been unaware. Level 5
refers to a highly additive helper response which leads to a

helpee experiencing his/her deepest feelings which had been previously unexplored (Carkhuff, 1969).

Level 3 responses are considered to be primary empathic statements and levels 4 and 5 responses are considered to be advanced empathic statements. The aim of the empathy training in the present study was to teach the medical students to respond to patients using primary accurate empathic responses (i.e., level 3). Responses at levels 4 or 5 would be more appropriately covered in counsellor training because deep exploration of clients' thoughts and feelings is part of a more extensive counselling process. The percentage of the responses which were at level 3 or higher was used in the analyses.

The Carkhuff Scale is the most commonly used objective scale to independently judge actual counselling sessions (Gladstein, 1987) and is the best available measure of expressed empathy. Carkhuff and Burstein (1970) reported reliabilities of .90 and .88 respectively on intra and intercorrelations among raters. There does not seem to be agreement on at what point in an interview ratings should be taken, and many studies randomly chose segments to be rated. However, in this study all utterances were rated by both raters.

In their review of the construct validity of Carkhuff's measure, Feldstein and Gladstein (1980) suggested that because this scale ignores nonverbal communication and affective experience of the counsellor, it should not be used alone in

research. Therefore, other measures of empathy were included
in this study.

Barrett-Lennard Relationship Inventories (BLRI)

Medical students' empathic understanding or experienced
empathy and simulated patients' received empathy or empathy
based on the experience of simulated patients were measured
using the two Empathic Understanding subscales of the Barrett-
Lennard Relationship Inventories, forms MO and OS respectively
(Barrett-Lennard, 1962). Each item of the scales has a
6-point scale anchored with -3 = "no I strongly feel that it
is not true" to +3 = "yes I strongly feel that it is true."
Each scale has eight negative items and eight positive items.
To score the inventory, the positive and negative items are
summed separately to form sub-totals; the negative sum score
is multiplied by -1 and the two sub-totals are then added to
obtain the total score. Possible scores ranged from -48 to
+48.

Jarski et al. (1985) suggested that this scale is the
best measure of empathy for use in medical research for a
number of reasons, including the fact that the scale has known
and acceptable validity and reliability, face validity, and
relevant items. Barrett-Lennard (1962) reported that the
split-half reliability of these two forms ranged from .75 to
.94, and a test-retest correlation over a two to six week
period was .92. The Barrett-Lennard Relationship Inventories
have been validated with a variety of populations and have

been used in over 100 studies, including at least two with medical personnel (Jarski et al., 1985).

Perceived Stress Questionnaire

I devised a scale consisting of four questions and scored it using a 7-point Likert scale (see Appendix A). This scale gave an indication of the stressfulness of the interaction with the simulated patient as experienced by the subjects. To compute the perceived stress score, the first two items were positively scored and the last two items (i.e., questions 4 and 5) were reversed scored. The items were summed for the total perceived stress score and the maximum possible score was 28. Internal consistencies as measured by Cronbach's alpha for the 4-item scale were .69 (scores for pre-trained S's, n = 19), .68 (scores for post-trained S's, n = 20), .84 (combined, N = 39). A fifth question concerning the subject's perception of the level of emotional distress of the simulated patient was included in the middle of the questionnaire. This was a measure to ensure that there was no significant difference in the amount of distress portrayed by the simulated patients over the different testing periods.

Hardiness Scale

The construct of psychological hardiness was measured using the scales employed by Kobasa et al. (1982). This instrument is a composite questionnaire made up of items from six instruments, all of which were chosen for their

theoretical relevance and empirical reliability. The hardiness measure was scored using the 4-point scale labeled 0, 1, 2, 3 for the items in the first four scales, as suggested by S.C. Kobasa and S.R. Maddi (personal communication, November 1, 1982). The majority of items are negatively keyed. The binary scored items from the Rotter External Locus of Control Scale (1966), were scored as 0 = .5 and 1 = 2.5. The maximum possible score was 102.5.

Kobasa and Maddi (1982) reported that estimates of internal consistency for the hardiness measure have been in the .80's and test-retest reliability over a five-year period was .61. The shortened, refined form of the hardiness scale, which was used in this study, showed internal consistency (coefficient alpha of .86), and correlated .89 with the longer composite. Kobasa and Maddi reported that this refined composite duplicates all the major findings reported with the longer one. The hardiness questionnaire measures a degree of control (internal rather than external), commitment (to self rather than alienation from self), and challenge (vigorousness rather than vegetativeness).

Ways of Coping Scale

Differential coping strategies were examined using the items from the Ways of Coping Checklist (Donnelly 1979),[1] which was based on a taxonomy developed by Lazarus (1966). The

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[1]The Ways of Coping items were used by permission of J.C. Donnelly.

items listed were strategies reported by interns as the ones most useful in coping with stressful situations associated with their medical training. This scale was chosen over Lazarus' (1966) measure because it appeared to be more relevant and have more face validity for a medical student population.

The 74 items on the scale are classified into two categories: problem-focused and emotion-focused. The 34 problem focused or non-palliative items include such coping strategies as: "I left the hospital" and "I looked it up". The 40 emotion-focused or palliative items include such coping measures as "I believed in myself" and "I paid attention to my feelings". These items were listed in random order to avoid a set response to either category. Instead of using a binary scoring system (i.e., "used", "not used"), I chose to use a 4-point scale anchored with 0 = "not used" to 3 = "used a great deal", in order to determine the extent to which the coping strategies were used. This 4-point scoring procedure was used by Folkman et al. (1986). Although Donnelly (1979) did not compute reliability or validity data on the scale, the internal consistencies were computed for the sample used in this study and were high (Pal, N = 39, α = .89; Nonpal, N = 39, α = .87).

Session and Overall Training Evaluation

At the end of each individual training session, the subjects were asked to complete the following sentences:

What I learned today was . . .

What I liked most about today was . . .

What I liked least was . . .

I thought it was important to have immediate feedback on the training and to identify those elements which should be incorporated into future trainings.

After the course was completed, students were asked also about any general feedback and suggestions for improvement to the training. Because one of the aims of this research is to identify how empathy training helps medical students, I thought this information would be relevant and useful.

Experimental Procedure

The Experimental Treatment - Empathy Training

Subjects received four weekly three-hour long training sessions in empathic communication skills. Twelve hours of empathic skills training was chosen because this has been the length of other communication skills training programs for health providers (Cline & Garrard, 1973; Friedrich, Lively, Schacht, 1985; Poole & Sanson-Fisher, 1979). A variety of approaches were used - lectures, modelling, films and videotaping, selected readings, role playing situations, group exercises, feedback, and discussion. The standard steps in a skills training program as outlined by Egan (1986) were used

including development of cognitive and behavioral clarity of empathic communication, practice of skills, evaluation and feedback, and reflection on the training process. An outline of the training program which I developed can be found in Appendix B.

Equipment and Facilities

The U.B.C. Department of Family Practice provided the large training room as well as the testing room, both of which had viewing rooms complete with one way mirrors so that I could monitor all sessions. The room where the medical student-simulated patient interaction took place was a regular medical examination room complete with such items as a sink and an examination table which increased the medical atmosphere and realism of the encounter. These rooms were also equipped with the audio visual equipment (i.e., video cameras and playback units) necessary to conduct this study. Floor plans of the testing and training rooms can be seen in Figures 2 and 3.

Scenarios for Testing Situations

The three test situations included presentations by the actors of anger, fear, and grief (see Appendix C). They were adaptations of scenarios by Cooke and Herbert (1986). Riccardi and Kurtz (1983) mentioned emotions such as grief, anger, and depression as ones for which patients require supportive counselling. The different test situations were
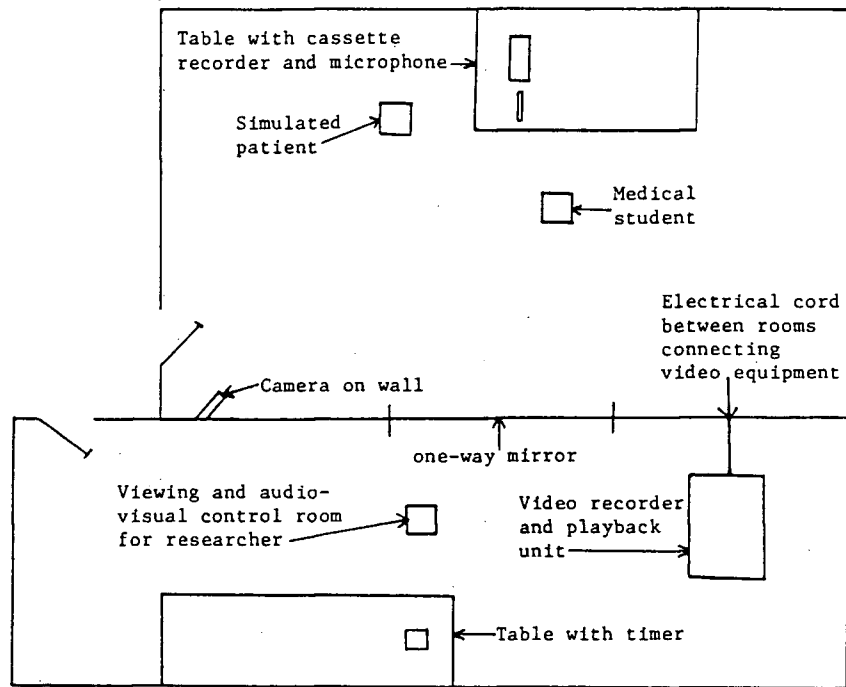
Figure 2.   Testing room arrangement.
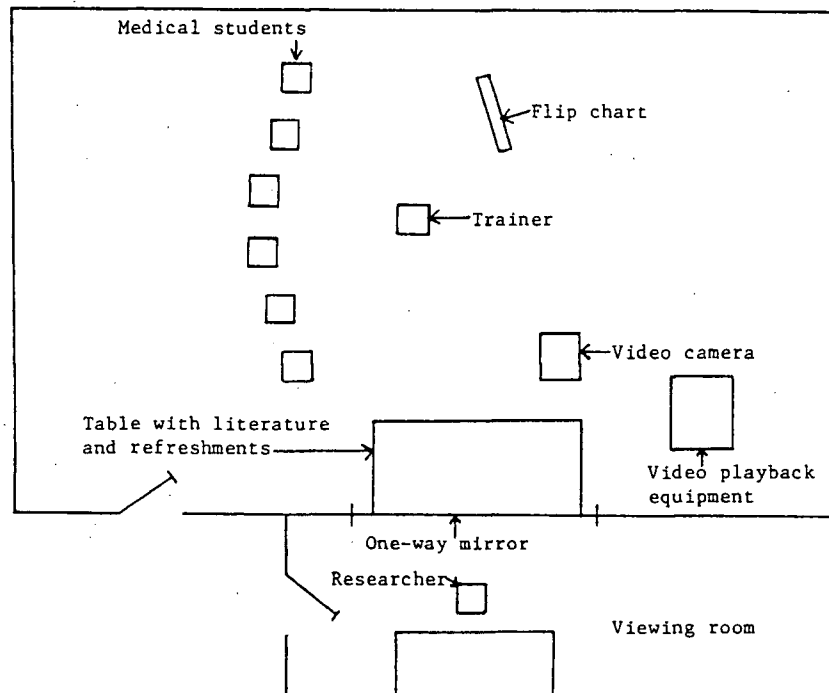
Figure 3.   Training room arrangement.

counterbalanced to eliminate possible confounding of order with treatment effects. Each subject interacted with three simulated patients, one at each testing occasion, each of whom presented a different emotion. Every medical student interacted with actors of both sexes and at each testing time each one interacted with a different actor. There was one exception to this (One subject saw the same actor twice due to a last minute cancellation of another actor); however, neither the medical student nor the simulated patient made any acknowledgement of this.

Training of the Simulated Patients

The actors were asked to read the scenario describing the emotion and the type of patient they were to portray. They then familiarized themselves with the trigger sentences and were asked to use as many of them as they could remember. The simulated patients then engaged in a short role play with me in order to ensure that they could demonstrate the appropriate emotion through their verbal and non-verbal responses. This also served as a warm-up for the actors. They were asked not to specifically state their emotion at the beginning of the interview but rather to use the trigger sentences and non-verbal behaviours to display their emotion. Actors were told that if the medical students acknowledged the emotion, they were to de-escalate the intensity of the emotion while at the same time continue to explore the nature of the problem. In other words, the actors were to continue to give

the medical students subject matter to which they could
respond, but in a less intense way. Actors were also
instructed not to ask any medical questions which may have
been beyond the knowledge of second year medical students.

Emotion and Gender Combinations during Testing Occasions

Table 1 outlines the gender of both the medical student
and the simulated patient who interacted in each of the
testing occasions as well as the type of emotion which was
presented.

**Table 1. Gender of Medical Student and Simulated Patient
          by Emotion of Scenario**

Group 1

Gender of Medical Student		Testing Occasion	
	I	II	III
Subject 1 M	F - Grief	M - Fear	F - Anger
Subject 2 F	M - Grief	F - Anger	F - Fear
Subject 3 M	M - Anger	F - Grief	M - Fear
Subject 4 M	M - Anger	M - Fear	F - Grief
Subject 5 F	M - Fear	M - Anger	F - Grief
Subject 6 F	F - Fear	F - Grief	M - Anger
Subject 7 F	F - Grief	F - Anger	M - Fear

Group 2

Gender of Medical Student		Testing Occasion	
	I	II	III
Subject 1 F	M - Anger	F - Fear	M - Grief
Subject 2 F	F - Fear	M - Grief	M - Anger
Subject 3 M	F - Fear	F - Anger	M - Grief
Subject 4 M	F - Anger	F - Fear	M - Grief
Subject 5 F	M - Grief	F - Anger	F - Fear
Subject 6 M	M - Grief	F - Anger	F - Fear

In summary, then, the number of times each emotion was presented in the testing situations before and after subjects received the training are as follows: Fear: 6 pre, 7 post; Anger: 7 pre, 6 post; and Grief: 6 pre, and 7 post. Thus, the design was fully counterbalanced for the 3 emotional conditions on pre and post training for each group.

Pre-Testing of Subjects

I telephoned all subjects to arrange a suitable time for the pre-test. I also briefly explained to each subject in what activities they could expect to be involved during the test situation. The typical testing occasion involved one medical student arriving at the Family Practice Unit and meeting with me where I explained further that the first part of the testing involved interacting with a simulated patient. The medical students were not told of the emotional condition, but they were given a sheet with general details about the patient's concern (Appendix C). Subjects were told that they had 15 minutes to explore the nature of the patient's problem, recognizing the limitations of their training to date. After familiarizing themselves with the situation, the medical student entered the testing room to interact with the simulated patient who was sitting in the testing room. The interview was videotaped and observed by myself from the adjacent room. After 12 minutes, I tapped on the glass of the one-way mirror to indicate that there were up to 3 minutes left to complete the interview.

After the interview, the medical student returned to the original examination room where he/she met with me. The subject was asked "What was that experience like for you?", in order that they might have an opportunity to express any immediate feelings. No debriefing about the nature of the experimental hypotheses was given. The subject was then asked to complete the Perceived Stress Questionnaire, The BLRI, the Hardiness Questionnaire and the Ways of Coping Scale. I then went to the testing room and requested that the simulated patient complete the client form of the BLRI. When the subject completed all forms, I told him/her that further contact would be made about when he/she could begin the training.

Assignment to Group

To ensure that assumptions of group equivalence had been met and to ensure that significant initial differences would not confound the results, groups were equated before random assignment to groups. In other words, with such a small number of subjects, it was important that not all subjects who rated highly on the empathy pre-tests be in one group.

The blocking procedure used was the one for equivalent groups recommended by Cook and Campbell (1979). Individuals were ranked according to pre-test scores on the client form of the BLRI, counterbalanced for gender, and then randomly assigned to a group. Because Mendez, Shymansky, and Wolraich (1986) found that female physicians demonstrated more frequent

reflection of feelings than male physicians, and Carney and Mitchell (1986) found that patients tended to rate female medical students higher than male medical students on a measure of communication skills, I wanted a balance of males and females in each group. I wanted to ensure also that not all the subjects who were rated as highly empathic were in one group.

Blocking is a procedure which is encouraged by researchers. For instance, Huck, Cormier, and Bounds (1974) suggested that randomization and matching can be combined and that "the combination of first matching and then random assignment will perhaps yield greater design precision than would randomization alone" (p. 244). It is particularly wise to block when using a crossover design as Poloniecki, Hews, and Barker (1982) noted in their review of crossover studies, "Matching of patients between the two groups makes good scientific sense. This can be done on such variables as age, sex and scores on subjective tests" (p. 71). This procedure is followed because it is desirable to conclude that significant experimental effects are due to the experimental intervention rather than due to intersubject variability.

Administration of Training and Post-Testing

The sessions proceeded according to the outline of training (see Appendix B). During each session there was a short break in which subjects enjoyed refreshments and socialized among themselves. I observed all training sessions

to ensure that the training procedure was standardized. The
subjects in the first training period were asked not to reveal
details about the nature of the empathy training (e.g.,
empathy formula) to subjects who were in the delayed-training
group.

Following the first training, all subjects were tested
using all measures once again. Then the second group of
subjects (i.e., wait-list control group) received the empathy
training. Following the second training period, measures were
taken once again on all subjects. In total then, each of the
13 subjects was directly involved in the study for
approximately 15 hours (i.e., 3 one-hour testing occasions
plus 12 hours of training). I did not act as a trainer, a
rater, or a simulated patient for any testing or training
sessions. However, I did observe all training sessions and
co-ordinated and administered all testing sessions which were
conducted with only one subject and one simulated patient at a
time.

Statistical Considerations

Crossover designs were first used in agricultural
experiments in the 1940's (Fellingham, Bryce, & Carter, 1981)
because large experimental animals were expensive and fewer
animals were required for a study. Since then, crossover
designs have been extremely popular in clinical
pharmacological research. In fact, McNair reported that 68%
of studies testing anti-anxiety drugs used the crossover

design (cited in Brown, 1980). The crossover design has been used also in clinical psychological research (Chassan, 1979; Kazdin, 1980) to compare two or more different therapies.

Armitage and Hills (1982) noted that the crossover design is a simple and attractive design which is used extensively, especially in drug studies. In discussing the principal statistical aspects of the crossover design they stated, "One might have thought that its statistical properties were familiar and well-documented. However, it is difficult to find adequate discussions of the design in textbooks, and many of its properties are widely misunderstood" (p. 119). Because the crossover design is not presented specifically in standard texts such as Winer (1971) and Kirk (1968), a thorough investigation was done to determine the logical type of statistical analyses which would answer the questions of interest in this study.

The crossover design uses a Latin-square arrangement (i.e., an x by x arrangement in which x appears only once in each row and column) to counterbalance the subjects. In this study, the simplest form, the 2 x 2 Latin square, was used to produce the 2 possible arrangements in the treatment sequence that is, A B and B A, where A = treatment and B = absence of treatment. Neter and Wasserman (1974) pointed out that the crossover design has aspects of both a completely randomized block design (subjects are blocks) and a Latin square arrangement. A crossover design uses three classifications: groups, testing occasions, and treatments. Each treatment

occurs only once in each column and only once in each row
(Campbell & Stanley 1963).

Figure 4 illustrates the mixed two-factor crossover
control experimental factorial design chosen for this study.
Bold double lines indicate the point at which empathy training
was introduced. Factor A (order of training) is a between-
groups, fixed factor. Factor B (testing occasion) is a
within-groups, fixed, repeated-measures factor. Subjects, a
random factor, are nested within groups. Training is fully
crossed with groups.

Factor A Order of Intervention	Factor B - Testing Occasion		
	I	II	III
Level A_1 (Training-Control)	1	2	3
Level A_2 (Control-Training)	4	5	6

Figure 4. Experimental design.

An initial glance at Figure 4 reveals a 2 x 3 mixed
model, and an analysis for a standard split-plot design (e.g.,
Kirk, 1968) was initially considered. However, even though
the crossover and the split-plot are both repeated measures
designs, Gill (1978) pointed out a major difference. In the
split-plot design, a different treatment is applied to each

group of subjects and what is of interest are trends over time. In the crossover design, however, two or more treatments are applied to all groups of subjects, and time of treatment is confounded with groups. What is of interest are comparisons of the effects of each of these treatments at various times. Also, because the groups are equivalent and receive identical treatments, although not necessarily at the same point in time, it may be of interest to collapse some groups to examine effects; whereas, in the split-plot design it is not. For instance, in drug studies, treatment effects of each of 2 drugs is examined by looking at differences in scores pre-post drug A, and pre-post drug B, regardless of the time it was administered.

In most crossover drug study designs, a carry-over effect of one drug into the next time period is undesirable; and often a "washout" period is included to ensure that the first treatment does not contaminate the second. However, in this study, a carry-over effect is desirable. Because it was hoped that there would be a reactive treatment in the first group, it was not expected that the follow-up group would yield level of scores similar to the wait-list control group. In other words, although scores for the two groups immediately pre- and post-treatment could be collapsed, optimal results would include stability of scores for the wait-list and follow-up groups although they would be at a different level. Therefore a standard ANOVA for a two-period crossover design which collapses results over the two treatments, has order of

treatment and subjects as factors, and has no interaction, was inappropriate for this study.

A similar design is used in time series studies in which a treatment is delayed for one group of subjects but not another. It is known as the staggered baseline or time-lagged control design first suggested by Gottman, McFall, and Barnett (1969). However, the analyses for a time-lagged multiple time series was clearly inappropriate for this study. The design used in this study had a time lag, but not enough points for time series analyses.

Another similar design, known as a two-period crossover design with repeated measures within a period, was suggested by Ott (1988). He described this design as an "extension" to repeated measures designs in which the concepts of repeated measures and crossover designs are combined. However, Ott made no suggestion for analysis of variance for this design.

Collapsing the two sets of pre-tests for group two and the two sets of post-tests for group one (i.e., cells 2 with 3 and 4 with 5 in Figure 4) and computing a 2 x 2 between - within ANOVA was considered. However an analysis of this sort would not allow the investigation of wait-list and follow-up effects.

From the above discussion it is evident that the choice of analysis was not clear. A standard 2 x 3 analysis of variance with post hoc comparisons would have been inappropriate because trends over time for blocks of subjects receiving different treatments were not of interest. Also

there would be a problem with interpretation of the main and time effects as well as the interaction because of the confounding by the treatment crossover (i.e., the treatment point for each group was not the same time). Of interest in this study were comparisons of how the two groups changed as a result of the training which was introduced at different times. Therefore, I decided that the best way to give clear answers to the questions of interest in this study would be to compute a series of 2 x 2 repeated measures analyses of variance with one between-subjects factor (i.e., Group) and one within-subjects factor (i.e., Testing Occasion).

Neither the type of analyses nor any references to any empirical studies which utilized the two-period time-lagged crossover control design for two groups were suggested by Epstein and Tripodi (1977). They did, however, suggest the contrasts of interest for this design which include:

1. Before and after comparisons within and between the two groups following the first intervention. In other words, the typical comparisons used to determine treatment effectiveness in any classical experiment which includes a control group.

2. Comparisons to determine whether the treatment effects in group one were maintained over time, that is, whether there were carry-over effects.

3. Analyses to determine whether the experiment had been replicated with the second group and whether the treatment had been equally effective for both groups.

A series of 2 x 2 ANOVAS and t-tests proved effective in explicitly examining these comparisons and shedding light on questions of interest in this study. The .05 level of significance was utilized to test the F-ratios for the primary contrasts.

The use of MANOVA to simultaneously test all the variables was considered over a series of ANOVAS. One advantage of using a multivariate analysis over a series of ANOVAS is that too many univariate tests can lead to an increase in a Type I error rate.

However, even though MANOVA would have been preferable, the use of a multivariate analysis was ruled out for two reasons. When using MANOVA, it is important to have a greater number of subjects per cell than the number of dependent variables (Schutz & Gessaroli, 1987; Tabachnick & Fidell, 1983). Because of the small number of subjects in the present study, the power of the MANOVA would be lowered because of reduced degrees of freedom for error (Tabachnick & Fidell, 1985).

Also, if all the variables were to be tested in a single analysis, small differences on the exploratory variables might obscure a real difference on some of the other variables for which there was strong rationale (e.g., measures of empathy). Since MANOVA detects mainly error for the set of variables, there would be a risk that it would show no reliable overall difference (Stevens, 1986).

Schutz and Gessaroli (1987) pointed out that employing a MANOVA with small numbers may lack power to detect even large effect sizes. These and other scholars (e.g., Tabachnick & Fidell, 1983) suggested that the ANOVA method may be more powerful than MANOVA for analyzing repeated measures designs with small numbers.

In addition to the ANOVAS and t-tests, effect sizes were calculated. Effect sizes (Cohen, 1988) are measures expressed in standard deviation units which yield an indication of the magnitude of treatment gains. Kazis, Anderson, and Meenan (1989) suggested that effect sizes can serve as benchmarks for interpreting change, not only in the behavioural sciences, but in medicine as well, where they appear to be under-utilized.

Effect sizes for this study were calculated using the methods discussed by Cohen (1988), Glass and Hopkins (1984) and Kazis et al. (1989). The specific calculation involved taking the difference in the means immediately before and after training and dividing it by the pooled pre-treatment standard deviation.

Designs Used to Test the Hypotheses

In this section, each substantive hypothesis is stated first followed by an indication of the cells used in the analyses to test each hypothesis.[2] I have also given a name to each design. As well, the statistical hypotheses, and

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[2]While the substantive hypotheses are stated directionally, the statistical hypotheses are stated in the null form, and 2-tailed tests were used in all statistical analyses.

contrasts of primary interest to test the hypotheses, are emphasized.

Hypothesis 1A: Subjects who receive empathy skill training will demonstrate significantly higher scores on measures of empathy than will subjects who are in a wait-list (delayed-treatment) control group.

Hypothesis 1B: Subjects who receive empathy skill training will demonstrate significantly lower scores on a measure of perceived stress than will subjects who are in a wait-list (delayed treatment) control group.

The design used to test hypotheses 1A and 1B is a classic pre-post treatment design with a control group (Campbell & Stanley, 1963). The purpose of this analysis is to determine whether there is a treatment effect and whether this effect is greater for the treatment group than for the control group which has had testing only. Cells used in ANOVAS to test hypotheses 1A and 1B are indicated with a slash in Figure 5. The statistical hypothesis expressed in null form is as follows:

$$H_0: (\mu_2 - \mu_1) - (\mu_5 - \mu_4) = 0.$$

The contrast of primary interest to test this hypothesis was the Group-by-Time interaction term. That is, if the training were to be sufficiently potent, an interaction would result.

Time

I   II   III

Figure 5. Cells used in ANOVAS to test hypotheses 1A and 1B.

Hypothesis 2Ai: Subjects who are in the post training follow-up group will demonstrate significantly higher scores on measures of empathy than will subjects in the wait-list control group.

Hypothesis 2Bi: Subjects who are in the post training follow-up group will demonstrate significantly lower scores on a measure of perceived stress than will subjects in the wait-list control group.

The cells used in the analyses to test the second test of hypotheses are indicated with a slash in Figure 6. Using the terminology of Cook and Campbell (1979), it could be named a removed-treatment, no-treatment comparison with measures on two occasions. The purpose of this analysis was to determine whether the effects of the intervention were maintained for the treated group after the training was terminated and whether or not this effect of training was greater for the post-treatment group than for the control group which had

testing only. The statistical hypothesis expressed in null

form is as follows:

$$H_O: (\frac{\mu_3 + \mu_2}{2}) - (\frac{\mu_5 + \mu_4}{2}) = 0$$

The main contrast of interest to test hypothesis 2Ai and 3Bi

was in the group main effect. The second set of ANOVAS

compared two post-training scores for group one with two pre-

training scores for group two. That is, desirable results

included a strong main effect due to the potency of the

intervention.

Figure 6. Cells used in ANOVAS to test hypotheses 2Ai through
2Biii.

Hypothesis 2Aii: Subjects who are in the post-training

group will maintain scores on measures of empathy during the

follow-up time period.

<u>Hypothesis 2Bii</u>: Subjects who are in the post-training group will maintain scores on a measure of perceived stress during the follow-up time period.

The hypothesis to test hypothesis 2Aii and 2Bii expressed in null form is

Ho: $\mu_3 - \mu_2 = 0$

<u>Hypothesis 2Aiii</u>: Subjects who are in the wait-list (delayed treatment) control group will not increase in scores on measures of empathy during the wait-list control time period.

<u>Hypothesis 2Biii</u>: Subjects who are in the wait-list (delayed treatment) control group will not decrease in scores on a measure of perceived stress during the wait-list control time period.

The hypothesis to test hypothesis 2Aiii and 2Biii expressed in null form is

H_o: $\mu_5 - \mu_4 = 0$

Paired group t-tests were computed to determine the separate effects of time, that is whether there were carry-over or retention effects for group one and whether there was any difference between the pre-test and post-test for the wait-list control group.

Hypothesis 3A: Subjects who receive empathy skills training at different points in time will increase in scores on measures of empathy.

Hypothesis 3B: Subjects who receive empathy skills training at different points in time will decrease in scores of a measure in perceived stress.

Cells used in analyses to test hypotheses 3A and 3B are indicated with a slash in Figure 7. It is an extension of the classic one-group pre-post design (Campbell & Stanley, 1963). that is, one-group pre-post design with replication. The purpose of this design is to determine whether training has an effect, and whether or not this effect is similar for both groups. The statistical hypothesis expressed in null form is as follows:

$$H_o: (\frac{\mu_2 + \mu_6}{2}) - (\frac{\mu_1 + \mu_5}{2}) = 0$$
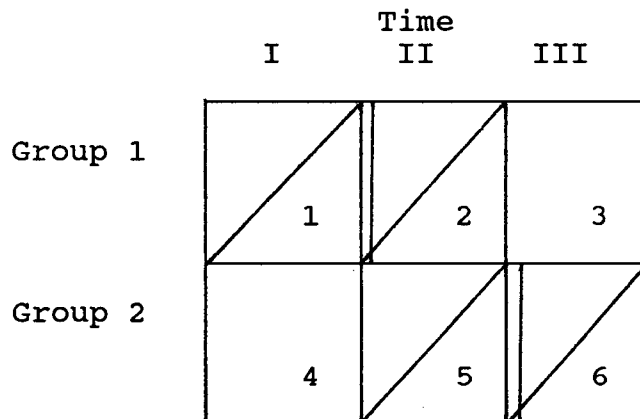
Figure 7. Cells used in ANOVAS to test hypotheses 3A and 3B.

The contrast of primary interest to test this hypothesis was in the time main effect. If the groups were genuinely equivalent, and the treatment sufficiently potent, there should have been a definite time effect.

Additional Exploratory Questions

A series of 2 x 2 ANOVAS similar to those used to test the hypotheses were used also to explore the questions of whether hardiness and number of problem-focused and emotion-focused coping strategies changed as a result of empathy training. An examination of frequency counts identified the ways of coping most commonly used by this sample of second year medical students.

Data Analyses Procedures

The analyses of variance were computed using the BMDP 4V computer package. BMDP is the program recommended by many researchers (e.g., Schutz & Gessaroli, 1987; Hertzog & Rovine, 1985) to analyze repeated measures data, due to its versatility. Another major reason that this program was chosen to analyze the data for this study was that it does not require an equal number of subjects per group. It uses the unweighted means solution to adjust for unequal sample sizes.

The SPSS program was used to compute reliabilities (Cronbach's alpha, Pearson product-moment correlations) and t-tests. The Tell-A-Graf Graphics Program was used to generate the graphs.

CHAPTER IV

Results

Introduction

This chapter presents the results of the study with emphasis on the statistical treatment of the data. It opens with a description of the sample and a report on the research procedures. The results of the analyses to test the hypotheses are then presented, followed by results of analyses for some additional exploratory questions. The chapter concludes with a summary of results.

Subject Characteristics

Of the 13 volunteer subjects who completed the study, 6 were male and 7 were female. The first group consisted of 4 women and 3 men, and the second group consisted of 3 women and 3 men. The subjects ranged in age from 24 to 28 years with an average age of 25.5 years. Group one had an average age of 25.7 years; group two had an average age of 25.3 years. All subjects had an academic background in the sciences except for one person who had an education degree.

Implementation Check of the Simulated Patients

The tapes of the interviews were checked by myself and by one of the raters to ensure that at least 3 of the 4 trigger sentences were used by all the actors. Although the verbal messages seemed to be very similar across all actors, the ways in

which the emotions were presented varied. For instance, grief
statements were accompanied by tears for some actors and by low
mood and lethargy by others. Although the actors differed to
some extent in their presentations of the emotion, both raters
and I agreed that the intensity of the emotion displayed by the
simulated patients was sufficiently high for all actors. In
addition, a t-test revealed no significant difference before and
after training in the degree of emotional distress displayed by
the simulated patients as perceived by the subjects based on
scores on the third question of the Perceived Stress
Questionnaire (Mean before training = 5.47; Mean after training =
5.53; t = -0.19, p = .85).

Inter-rater Reliability

In the study, there were 1160 medical student utterances all
of which were rated by both raters. The average percentage of
responses which were at level 3 or above for the two raters were
used in the data analyses. The inter-rater reliability was
calculated using a Pearson product - moment correlation.
Agreement between the raters' scores for all utterances was
r = .88 (p < .001).

Analyses of Training Effects

In this section, the means and standard deviations for all
measures over all times are presented first (Table 2). Results
of tests of the hypotheses are then described. The section

Table 2. **Means and Standard Deviations for Dependent Measures (N=13)**

Carkhuff Empathy Rating Scale (Percentage of Level 3 Responses)

		Time 1	Time 2	Time 3
Group 1	M	3.20	40.56	49.29
	SD	2.76	17.55	19.81
Group 2	M	5.77	3.01	55.86
	SD	2.61	1.96	17.33

BLRI (Simulated Patient Rating of Empathy Scale)

		Time 1	Time 2	Time 3
Group 1	M	1.43	23.14	29.86
	SD	24.38	15.09	10.42
Group 2	M	0.33	2.33	23.83
	SD	21.71	13.29	13.64

BLRI (Medical Student Rating of Empathy Scale)

		Time 1	Time 2	Time 3
Group 1	M	14.57	25.57	24.43
	SD	8.20	7.64	8.38
Group 2	M	8.67	8.67	17.17
	SD	7.58	7.53	8.98

Perceived Stress Scale

		Time 1	Time 2	Time 3
Group 1	M	17.71	10.29	11.86
	SD	3.35	1.80	2.67
Group 2	M	18.67	18.33	14.33
	SD	3.72	2.50	3.45

Table 2 (cont'd)

Hardiness Scale

		Time 1	Time 2	Time 3
Group 1	M	75.29	76.21	75.36
	SD	10.86	10.14	12.82
Group 2	M	66.58	64.58	66.58
	SD	14.09	12.04	13.37

Emotion-Focused Scale (Number of Strategies Used)

		Time 1	Time 2	Time 3
Group 1	M	25.00	27.14	26.14
	SD	3.37	5.61	4.88
Group 2	M	27.67	26.33	28.50
	SD	6.77	6.89	8.41

Problem-Focused Coping Scale (Number of Strategies Used)

		Time 1	Time 2	Time 3
Group 1	M	22.86	25.29	26.57
	SD	3.85	4.15	4.10
Group 2	M	24.00	26.67	27.00
	SD	5.44	5.35	6.07

concludes with the results of analyses of the exploratory
questions.

Hypotheses 1A and 1B

Hypothesis 1A: Subjects who receive empathy skill training
will demonstrate significantly higher scores on measures of
empathy than will subjects who are in a wait-list (delayed-
treatment) control group.

Hypothesis 1B: Subjects who receive empathy skill training
will demonstrate significantly lower scores on a measure of
perceived stress than will subjects who are in a wait-list
(delayed-treatment) control group.

Carkhuff Empathy Rating Scale (Percentage of Level 3
Responses) The results of the 2 x 2 analysis of variance for the
percentage of level 3 responses for each testing occasion are
shown in Table 3(a). The comparison of primary interest, the
group-by-time interaction is statistically significant (p < .05).
That is, the treated group increased its scores significantly
more that the wait-list group.

An examination of the means in Table 2 reveals that after
training the score on the post-test for group 1 is much higher
than any of the remaining means for this comparison. In
addition, as may be seen in the graph of means for this measure
(Figure 8), when testing occasions 1 and 2 are compared, the 3
means for cell 1, 4 and 5 cluster whereas the mean for cell 2 is
much more elevated. That is to say, the percentage of responses
at level 3 was much higher following the empathy training than in

Table 3. **Summary of Analyses of Variance for Dependent Measures (Hypotheses 1A & 1B: Comparison of Cells 1 & 2 with 4 & 5, N=13)**

3(a)   Percentage of Level 3 Responses

Source of Variance	SS	df	MS	F	p
Between Groups:					
Group (G)	1976.48	1	1976.48	19.08	.001
Error: between groups	1139.25	11	103.57		
Within Groups:					
Time (T)	1933.13	1	1933.13	26.32	.000
GXT	2601.01	1	2601.01	35.42	.000
Error: within group	807.85	11	73.44		

3(b)   BLRI Empathy Scale (Simulated Patient Rating)

Source of Variance	SS	df	MS	F	p
Between Groups:					
Group (G)	775.09	1	775.09	3.07	.108
Error: between groups	2779.52	11	252.68		
Within Groups:					
Time (T)	908.44	1	908.44	1.65	.225
GXT	627.82	1	627.82	1.14	.308
Error: within group	6041.71	11	549.25		

Table 3 cont'd

3(c) BLRI Empathy Scale (Medical Student Rating)

Source of Variance	SS	df	MS	F	p
Between Groups:					
Group (G)	840.00	1	840.44	9.81	.010
Error: between groups	942.10	11	85.65		
Within Groups:					
Time (T)	195.46	1	195.46	5.63	.037
GXT	195.46	1	195.46	5.63	.037
Error: within group	382.00	11	34.72		

3(d) Perceived Stress Scale

Source of Variance	SS	df	MS	F	p
Between Groups:					
Group (G)	130.85	1	130.85	17.55	.002
Error: between groups	82.00	11	7.45		
Within Groups:					
Time (T)	97.32	1	97.32	10.15	.009
GXT	81.32	1	81.32	8.48	.014
Error: within group	105.52	11	9.59		
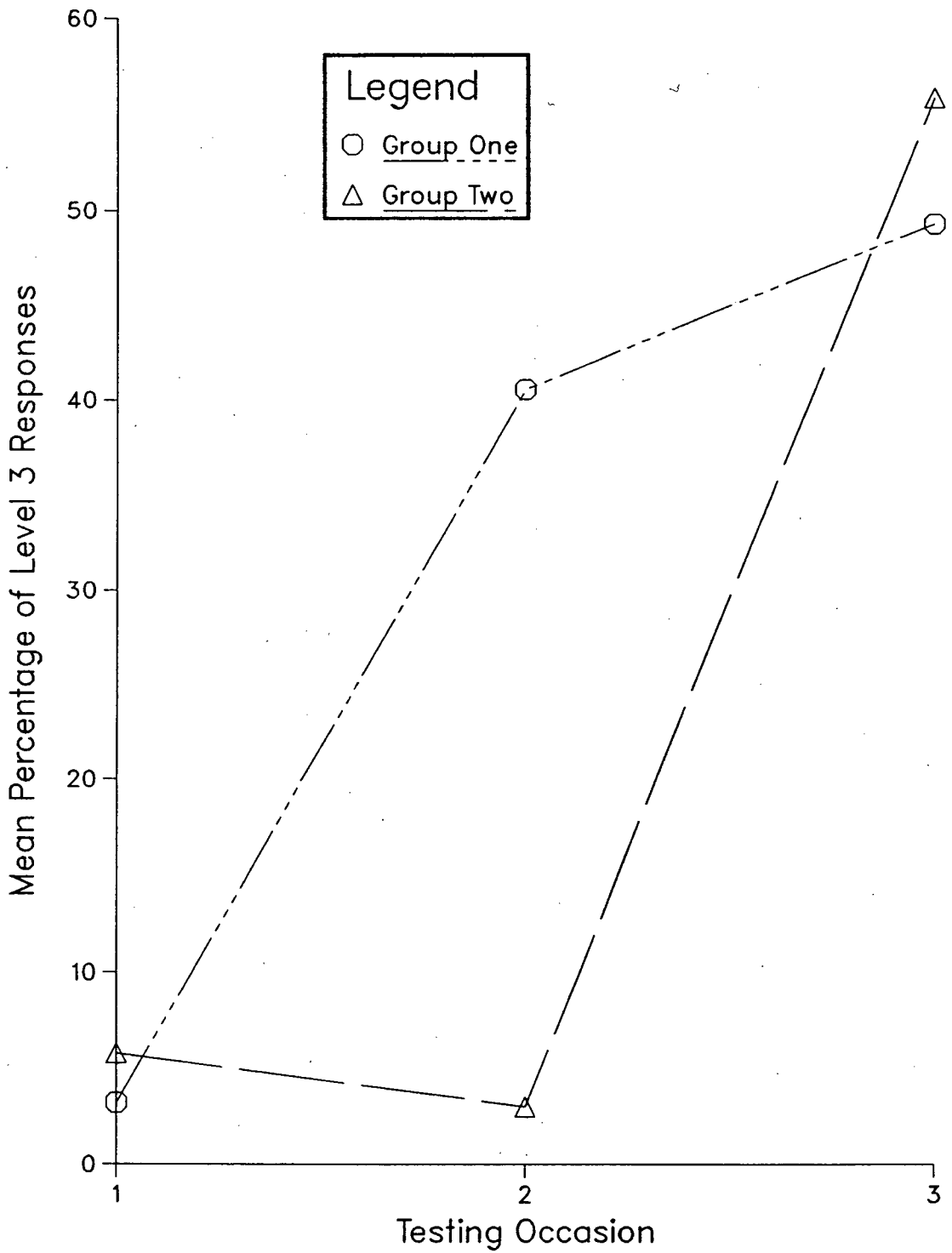
<u>Figure 8</u>.   Means for percentage of level 3 responses rated
                on the Carkhuff Empathy Scale.
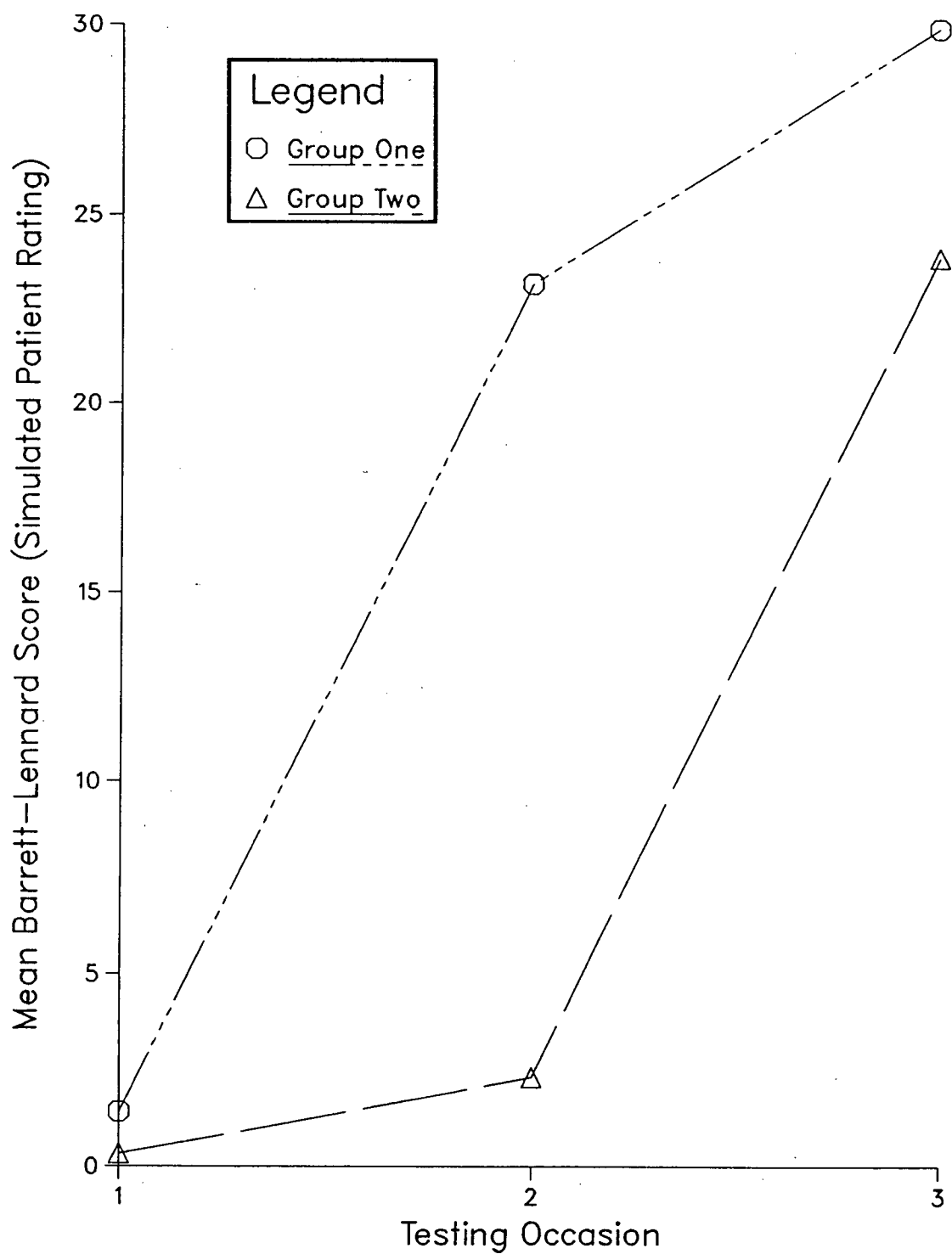
Figure 9. Means for simulated patient ratings on the Empathy Scale of the BLRI.
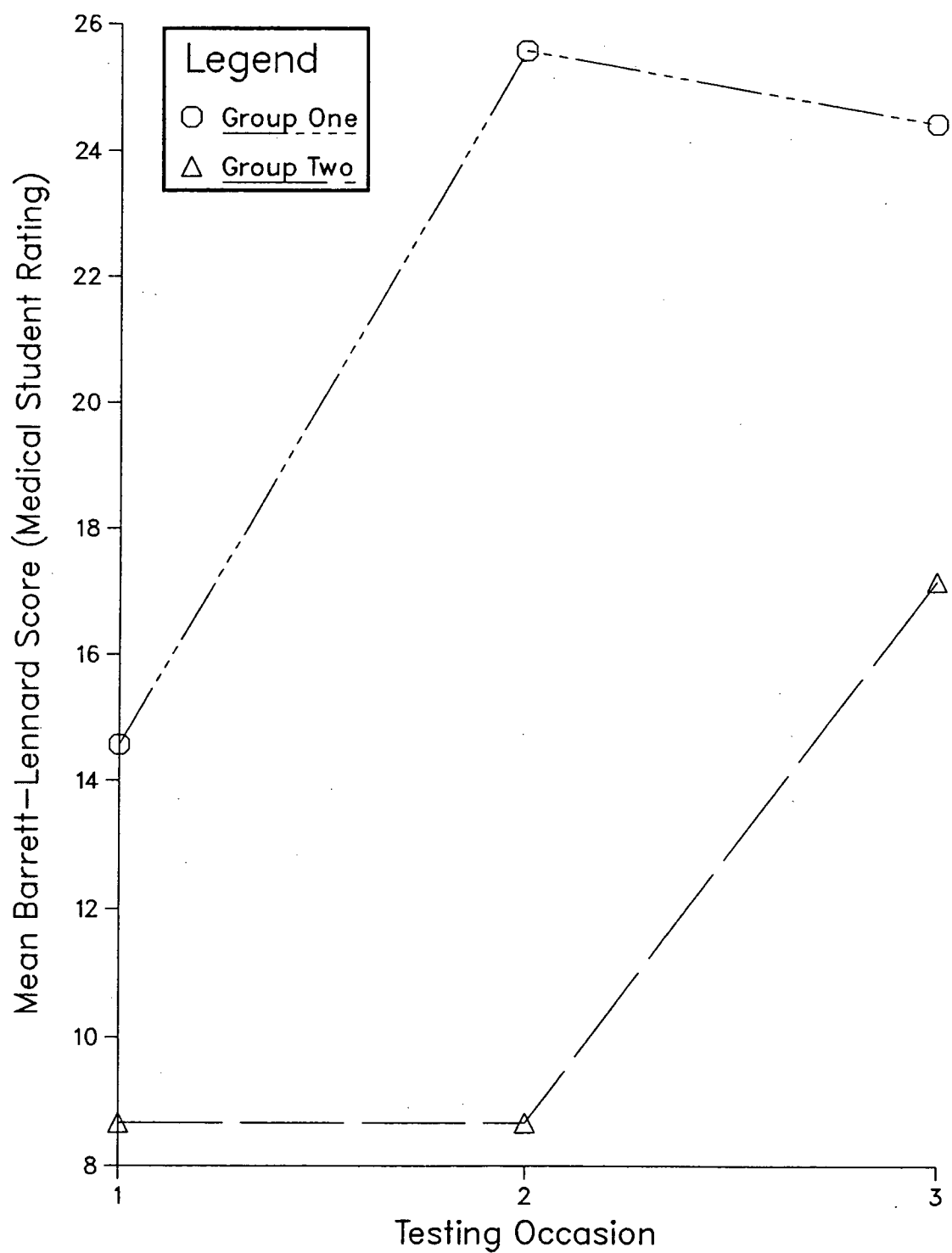
Figure 10.   Means for medical student ratings on the
             Empathy Scale of the BLRI.
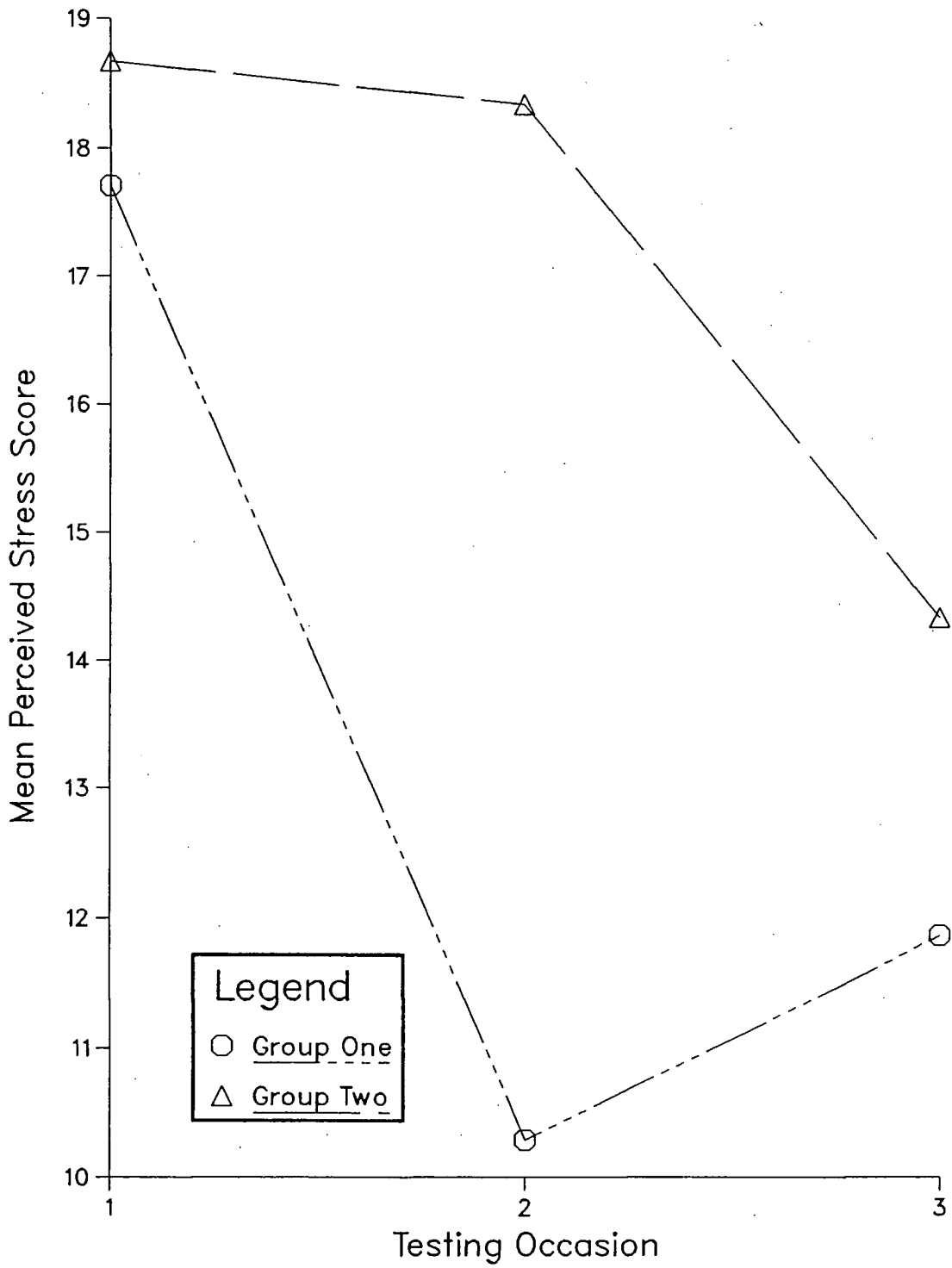
<u>Figure 11</u>. Means for medical student ratings on the
            Perceived Stress Scale.

the wait-list control condition. Since a level of at least 3 on the Carkhuff Scale is interpreted as an interchangeable response of feeling and content of the simulated patient's response by the medical student, the training, it appears, enabled the subjects to interact in a more empathic fashion.

BLRI Empathy Scale (Simulated Patient Rating) - The summary ANOVA table for the first set of comparisons for the simulated patient ratings for the Empathy Scale of the BLRI may be found in Table 3(b). The effects of treatment were in the hypothesized direction; however, the group x time interaction was not statistically significant. This may have been due to the wide range in individual scores by the actors as well as the small numbers of subjects resulting in a relatively large standard error.

BLRI Empathy Scale (Medical Student Rating) - Table 3(c) contains the analysis of variance table for the subject rated scores for the Empathy Scale of the BLRI for the first analysis. The contrast of primary interest, the interaction between group and time achieved the probability value of less than .05.

It can be seen in Table 2 and Figure 10 that the post-test score for group 1 is higher than the pre-training scores for groups 1 and 2. That is, after participating in the training the medical students perceived themselves as being more empathic.

Perceived Stress Scale - Table 3(d) presents the ANOVA table for the Perceived Stress Scale. The group x time interaction was statistically significant at p < .05. The mean score for group 1 (Table 2) was lower than for either the pre-training score or for

both mean scores for group 2. The graph for the perceived stress measure (Figure 11) illustrates the fact that the perceived stress scores for group 1 were reduced after training, while the scores for group 2 did not increase or decrease over time. Thus empathy training is associated with a significant decrease in perceived stress.

Hypotheses 2Ai through 2Biii

Hypothesis 2Ai: Subjects who are in the post-training follow-up group will demonstrate significantly higher scores on measures of empathy than will subjects in the wait-list control group.

Hypothesis 2Bi: Subjects who are in the post-training follow-up group will demonstrate significantly lower scores on a measure of perceived stress than will subjects in the wait-list control group.

The results of the 2 x 2 ANOVAS for all four dependent measures to test the second hypotheses may be found in Tables 4a to 4d. All four dependent measures resulted in a statistically significant group main effect (p < .05), which gives an indication of the potency of the intervention. The increased levels of empathy and decreased levels of perceived stress which resulted from the training were maintained for subjects during the follow-up time period and were significantly different from the scores on these measures than those of subjects in the wait-list control condition.

Table 4. **Summary of Analyses of Variance for Dependent Measures (Hypotheses 2Ai & 2Bi: Comparisons of Cells 2 & 3 with 4 & 5, N=13)**

4(a) Percentage of Level 3 Responses

Source of Variance	SS	df	MS	F	p
Between Groups:					
Group (G)	10614.7	1	10614.7	45.15	.000
Error: between groups	2586.31	11	235.12		
Within Groups:					
Time (T)	57.31	1	57.31	.38	.552
GXT	213.25	1	213.25	1.40	.261
Error: within group	1670.80	11	151.89		

4(b) BLRI Empathy Scale (Simulated Patient Rating)

Source of Variance	SS	df	MS	F	p
Between Groups:					
Group (G)	4092.49	1	4092.49	17.01	.001
Error: between groups	2646.67	11	240.61		
Within Groups:					
Time (T)	122.67	1	122.67	.41	.533
GXT	35.90	1	35.90	.12	.734
Error: within group	3257.71	11	296.16		

Table 4 cont'd

4(c)   BLRI Empathy Scale (Medical Student Rating)

Source of Variance	SS	df	MS	F	p
Between Groups:					
Group (G)	1723.79	1	1723.79	87.89	.000
Error: between groups	916.67	11	83.33		
Within Groups:					
Time (T)	2.11	1	2.11	.05	.820
GXT	2.11	1	2.11	.05	.820
Error: within group	425.43	11	38.68		

4(d)   Perceived Stress Scale

Source of Variance	SS	df	MS	F	p
Between Groups:					
Group (G)	356.57	1	356.57	55.69	.000
Error: between groups	70.43	11	6.40		
Within Groups:					
Time (T)	2.48	1	2.47	.29	.598
GXT	5.86	1	5.86	.70	.422
Error: within group	92.52	11	8.41		

An examination of Table 2 reveals that there was very little change in the means for the pre-and post-scores during the no intervention period. This effect can also be found in the graphs for the empathy and perceived stress measures (Figures 8-11) when testing occasions 2 and 3 for group one are compared with testing occasions 1 and 2 for group two.

Hypothesis 2Aii: Subjects who are in the post-training group will maintain scores on measures of empathy during the follow-up time period.

Hypothesis 2Aiii: Subjects who are in the wait-list (delayed-treatment) control group will not increase in scores on measures of empathy during the wait-list control time period.

Hypothesis 2Bii: Subjects who are in the post-training group will maintain scores on a measure of perceived stress during the follow-up time period.

Hypothesis 2Biii: Subjects who are in the wait-list (delayed-treatment) control group will not decrease in scores on a measure of perceived stress during the wait-list control time period.

Hypotheses 2Aii, 2Aiii, 2Bii, and 2Biii were tested using paired (dependent) group t-tests with a relaxed alpha of .25 in order to be certain that there was no change (i.e., increase in empathy and decrease in perceived stress) in scores in the absence of any treatment. The t-tests used to test hypotheses 2Aii and 2Bii serve also as comparisons of simple main effects (i.e., simple effects tests comparing levels of one factor at a particular level of the second factor) when a significant

interaction is of interest for hypotheses 1A and 1B. The results found in Table 5, showed that none of the pairs of means was significantly different with the exception of one (Carkhuff percentage level 3 responses, p = .11 for hypotheses 2Aiii). In fact, however, the mean scores for this measure actually decreased across time for the wait-list control group in the absence of treatment ($\underline{M}$, pre = 5.77, $\underline{M}$, post = 3.01). Thus, the waiting period did not result in an increase in percentage of level 3 responses. Only one out of the eight t-tests approximated significance at α = .25, and it was in the opposite direction.

Table 5. Results of the T-Tests for Carry-Over and Wait-List Effects

	Measure			
	Carkhuff % Level 3	BLRI S-P Rated	BLRI M-S Rated	Perceived Stress
Carry over effects (n = 7) (i.e., comparisons of cell 2 vs cell 3 in group 1, Figure 4)				
Mean Cell 2	40.56	23.14	25.57	10.29
Mean Cell 3	49.29	29.86	24.43	11.86
t	-0.99	-1.15	.58	-1.14
p	.36	.29	.58	.30
Wait list control (n = 6) (i.e., comparisons of cell 4 vs cell 5 in group 2, Figure 4)				
Mean Cell 4	5.77	.33	8.67	18.67
Mean Cell 5	3.01	2.33	8.67	18.33
t	1.92	-0.15	.0	.18
p	.11	.88	1.0	.87

Therefore the results indicate that empathy measures did not increase significantly during the waiting period for the delayed-training group, while the effects of empathy training were maintained for the post-treatment follow-up group. Similarly, perceived stress did not decrease in the post-test of the delayed-training group, and carry-over effects of perceived stress for the empathy trained groups were maintained.

Hypotheses 3A and 3B

Hypothesis 3A: Subjects who receive empathy skills training at different points in time will increase in scores on measures of empathy.

Hypothesis 3B: Subjects who receive empathy skills training at different points in time will decrease in scores of a measure in perceived stress.

The results of the 2 x 2 ANOVAS for all four dependent measures to test the third hypotheses may be found in Tables 6a to 6d. The contrast of primary interest, the time main effect, achieved the probability value of less than .05 for all measures. Overall the post-scores were different from the pre scores in the direction predicted by the substantive hypotheses.

An examination of the means in Table 2 and the ANOVA results shown in Table 6 a-d reveal that, after training the scores for the three empathy measures for both groups were significantly higher than the pre-training means. As Figures 8-10 show, when testing occasions 1 and 2 for group one and testing occasions 2

**Table 6. Summary of Analyses of Variance for Dependent
Measures (Hypotheses 3A & 3B: Comparison of
Cells 1 & 2 with 5 & 6, N=13)**

6(a)   Percentage of Level 3 Responses

Source of Variance	SS	df	MS	F	p
Between Groups:					
Group (G)	368.61	1	368.61	2.24	.163
Error: between groups	1809.48	11	164.50		
Within Groups:					
Time (T)	13146.2	1	13146.2	90.10	.000
GXT	387.68	1	387.68	2.66	.131
Error: within group	1604.93	11	145.90		

6(b)   BLRI Empathy Scale (Simulated Patient Rating)

Source of Variance	SS	df	MS	F	p
Between Groups:					
Group (G)	4.11	1	4.11	.02	.900
Error: between groups	2735.27	11	248.66		
Within Groups:					
Time (T)	3016.69	1	3016.69	7.58	.019
GXT	.75	1	.74	0.00	.989
Error: within group	4375.46	11	397.77		

Table 6 cont'd

6(c)   BLRI Empathy Scale (Medical Student Rating)

Source of Variance	SS	df	MS	F	p
Between Groups:					
Group (G)	330.77	1	330.77	4.17	.066
Error: between groups	872.85	11	79.35		
Within Groups:					
Time (T)	614.25	1	614.25	11.92	.005
GXT	10.10	1	10.10	.20	.667
Error: within group	566.75	11	51.52		

6(d)   Perceived Stress Scale

Source of Variance	SS	df	MS	F	p
Between Groups:					
Group (G)	35.18	1	35.18	7.21	.021
Error: between groups	53.67	11	4.88		
Within Groups:					
Time (T)	210.99	1	210.99	18.74	.001
GXT	18.99	1	18.99	1.69	.221
Error: within group	123.86	11	11.26		

and 3 for group two are compared, the post-training means are
significantly higher than the pre-training means resulting in
parallel lines (therefore no interaction). That is, scores for
both subjective and objective measures of empathy were
significantly higher following the empathy training for both
groups.

Following training, the means for the perceived stress
measure for both groups were lower than the pre-treatment means
(Table 2). As Figure 11 shows, when testing occasion 1 and 2 for
group one and testing occasions 2 and 3 for group two are
compared, the post-training means are lower than the pre-training
means, thus parallel lines result. Scores on the perceived
stress measure were significantly lower for subjects following
the empathy training.

Summary

From the results presented above, it is clear that in
general the data confirmed the hypotheses. The treatment was
sufficiently potent to enable the differences to be statistically
significant. The one effect which was non-significant was
probably due to a combination of a small cell number and a large
standard deviation. Thus, these results support the main
hypothesis that empathic communication skills training increases
levels of empathy and decreases perceived stress of second year
medical students.

Results of Exploratory Analyses

Hardiness Scale

The results of the set of 2 x 2 ANOVA's for the Hardiness Scale can be found in Table 7 and displayed graphically in Figure 12. There was no significant difference on any of the comparisons of primary interest. The series of ANOVAS were also computed for each of the hardiness subscales of commitment, control and challenge. Again the results were insignificant for all contrasts.

A literature review revealed only one study which reported scores for the various subscales for the short form of the hardiness measure (Hull, VanTreuren & Virnelli, 1987). In order to compare results, I contacted Hull to verify his scoring procedure, and then the hardiness measure for the present sample was rescored using his method. It is of interest to note that the scores for the medical students in the present study were not significantly different from the scores of a group reported by Hull et al. (1987) of 447 psychology undergraduates. The results were as follows: Commitment resulted in a mean of 16.15 and standard deviation of 3.45 in Hull's sample, and with a mean of 16.82 and standard deviation of 4.71 in the current study. Control resulted in a mean of 34.67 and standard deviation of 8.58 in Hull's sample, and with a mean of 32.40 and standard deviation of 10.65 in the present study. Challenge resulted in a mean of 20.54 and standard deviation of 3.12 in Hull's sample, while in this study there was a mean of 21.36 and a standard deviation of 2.71.

**Table 7. Summary of Analyses of Variance for Hardiness
Scale (N=13)**

(a)   Comparison of Cells 1 & 2 with 4 & 5

Source of Variance	SS	df	MS	F	p
Between Groups:					
Group (G)	667.82	1	667.82	2.51	.1414
Error: between groups	2927.17	11	266.11		
Within Groups:					
Time (T)	1.85	1	1.85	.17	.6838
GXT	13.85	1	13.85	1.31	.2772
Error: within group	116.61	11	10.60		

(b)   Comparison of Cells 2 & 3 with 4 & 5

Source of Variance	SS	df	MS	F	p
Between Groups:					
Group (G)	672.57	1	672.57	2.33	.555
Error: between groups	3180.27	11	289.12		
Within Groups:					
Time (T)	13.19	1	13.19	1.02	.335
GXT	2.11	1	2.11	.16	.694
Error: within group	142.43	11	12.95		

(c)   Comparison of Cells 1 & 2 with 5 & 6

Source of Variance	SS	df	MS	F	p
Between Groups:					
Group (G)	667.87	1	667.87	2.57	.138
Error: between groups	2863.17	11	260.29		
Within Groups:					
Time (T)	13.85	1	13.85	1.89	.197
GXT	1.85	1	1.85	.25	.625
Error: within group	80.61	11	7.33		
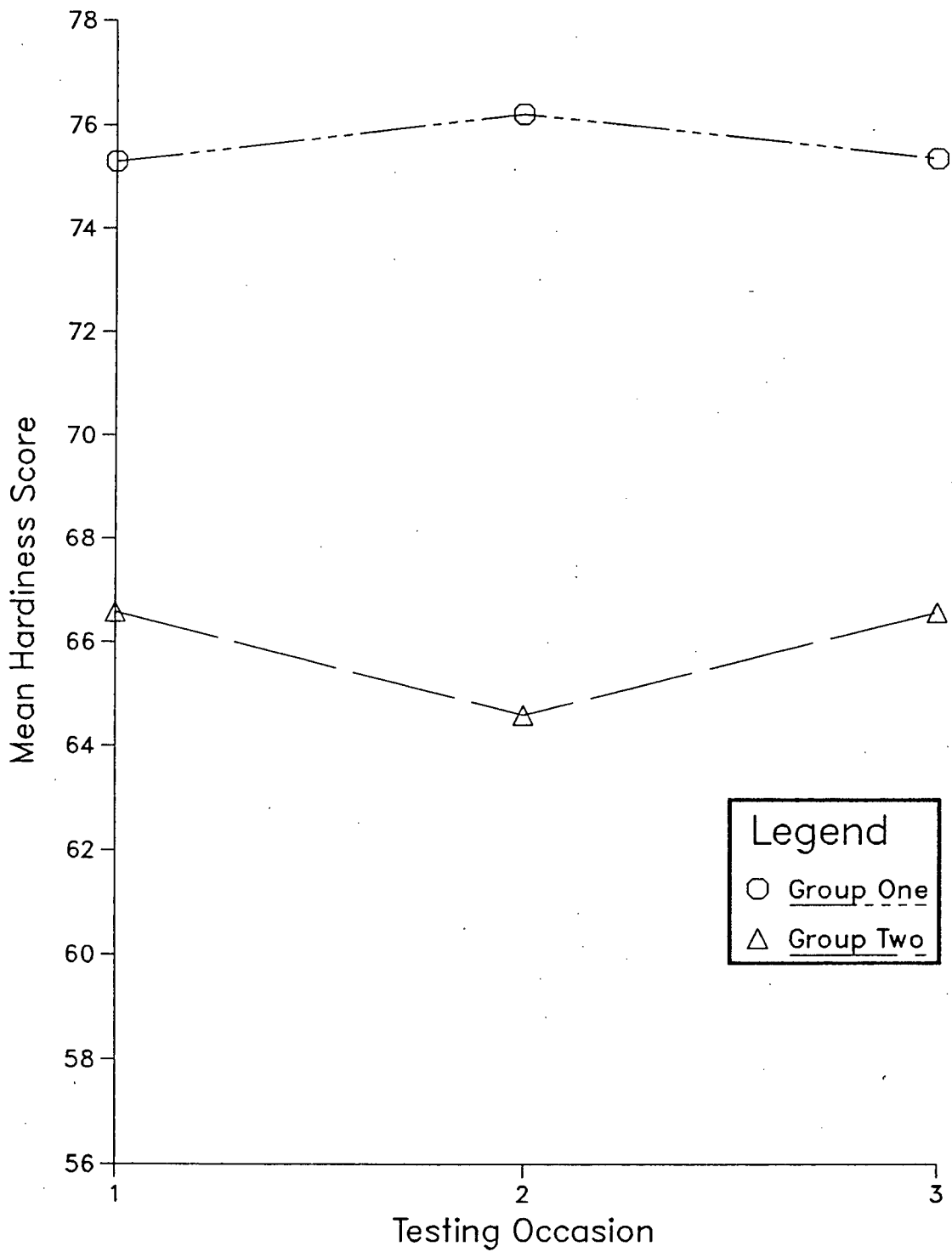
Figure 12. Means for Hardiness Scale.

Thus the sample of medical students who participated in this study scored neither higher nor lower in hardiness than did a large sample of students enrolled at an American academic institution.

Behavioural Coping Measures

As can be seen in Table 2, the mean number of both emotion-focused and problem-focused strategies used by the subjects to cope with the stresses of medical training increased after the empathy training. The results of the sets of 2 x 2 ANOVAS for number for both emotion-focused and problem-focused coping strategies can be found in Tables 8 and 9. There was no significant difference for any of the comparisons of primary interest. The same series of 2x2 ANOVAS was computed on the degree to which the coping strategies were used (i.e., computed on the 0-3). Again the results were non-significant for contrasts of primary interest (see Figures 13 and 14).

Frequency counts were computed to identify the coping strategies which were used by all the subjects pre- and post-training (Table 10). T-tests were computed for subjects immediately pre-and post-training to determine if there was any difference in the ratio of the number of emotion-focused compared with the number of problem-focused coping strategies. Before training this difference was non-significant (p = .33). However, after the empathy training, the number of emotion-focused coping strategies compared with the number of problem-focused coping strategies used approached significance (p = .053).

Table 8. Summary of Analyses of Variance for Emotion-Focused Coping Scale (Number of Strategies Used) N=13

(a)   Comparison of Cells 1 & 2 with 4 & 5

Source of Variance	SS	df	MS	F	p
Between Groups:					
Group (G)	5.57	1	5.57	.09	.764
Error: between groups	647.43	11	58.86		
Within Groups:					
Time (T)	1.06	1	1.06	.15	.703
GXT	19.52	1	19.52	2.82	.121
Error: within group	76.10	11	6.92		

(b)   Comparison of Cells 2 & 3 with 4 & 5

Source of Variance	SS	df	MS	F	p
Between Groups:					
Group (G)	.82	1	.82	.01	.916
Error: between groups	785.71	11	71.43		
Within Groups:					
Time (T)	8.80	1	8.80	7.64	.018
GXT	.18	1	.18	.16	.700
Error: within group	12.67	11	1.15		

(c)   Comparison of Cells 1 & 2 with 5 & 6

Source of Variance	SS	df	MS	F	p
Between Groups:					
Group (G)	11.69	1	11.69	.17	.688
Error: between groups	757.85	11	68.90		
Within Groups:					
Time (T)	30.00	1	30.00	3.67	.08
GXT	.92	1	.92	0.00	.99
Error: within group	89.85	11	8.17		

Table 9. Summary of Analyses of Variance for Problem-Focused Coping Scale (Number of Strategies Used) N=13

(a) Comparison of Cells 1 & 2 with 4 & 5

Source of Variance	SS	df	MS	F	p
Between Groups:					
Group (G)	10.29	1	10.29	.28	.605
Error: between groups	400.10	11	36.37		
Within Groups:					
Time (T)	41.94	1	41.94	5.52	.039
GXT	.92	1	.92	.01	.915
Error: within group	83.52	11	7.59		

(b) Comparison of Cells 2 & 3 with 4 & 5

Source of Variance	SS	df	MS	F	p
Between Groups:					
Group (G)	2.29	1	2.29	.05	.830
Error: between groups	525.10	11	47.74		
Within Groups:					
Time (T)	25.23	1	25.23	14.32	.003
GXT	3.08	1	3.08	1.75	.213
Error: within group	19.38	11	1.76		

(c) Comparison of Cells 1 & 2 with 5 & 6

Source of Variance	SS	df	MS	F	p
Between Groups:					
Group (G)	49.29	1	49.29	1.28	.283
Error: between groups	425.10	11	38.65		
Within Groups:					
Time (T)	12.32	1	12.32	1.43	.256
GXT	7.09	1	7.09	.83	.383
Error: within group	94.52	11	8.59		
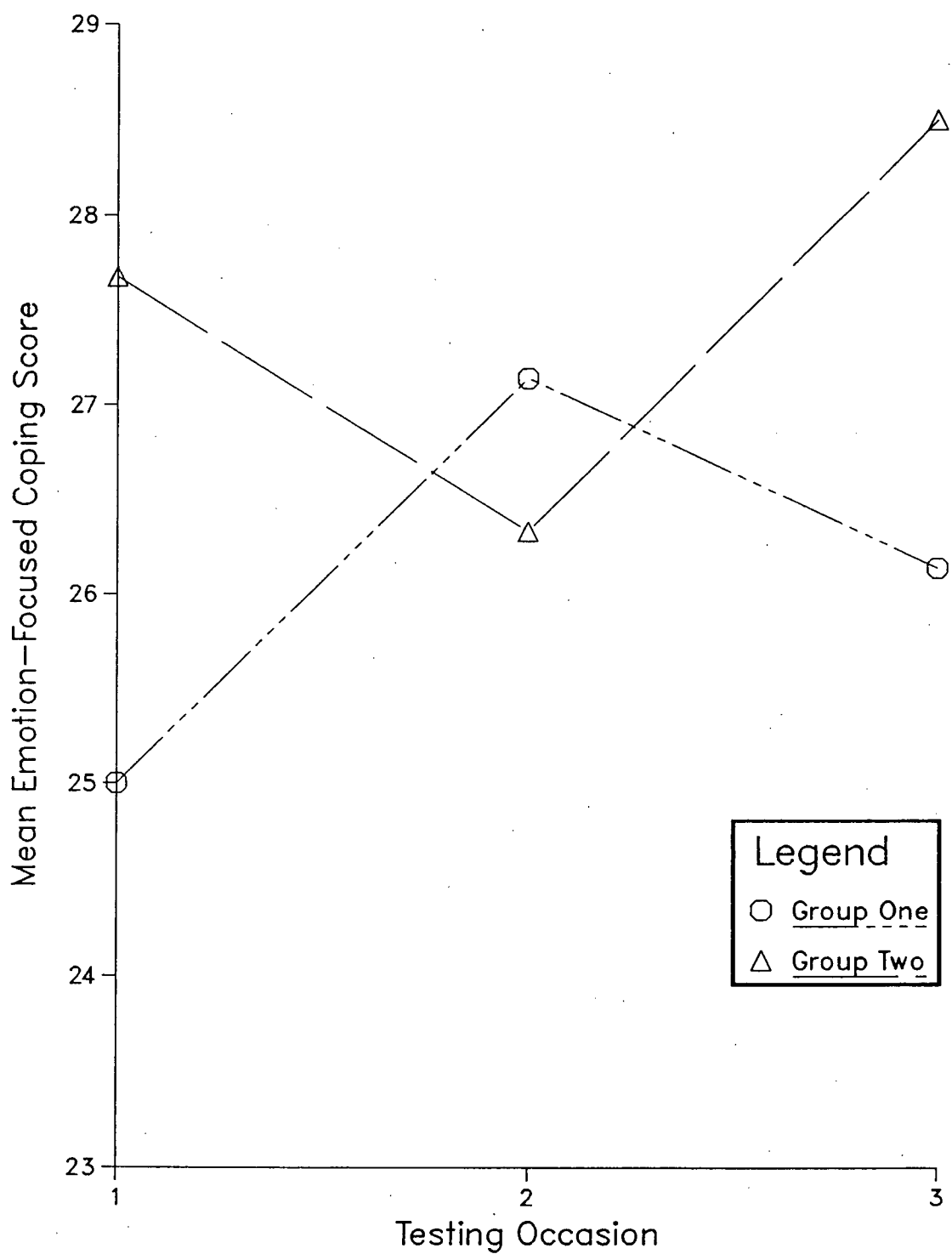
<u>Figure 13</u>. Means for Emotion-Focused Coping Scale.
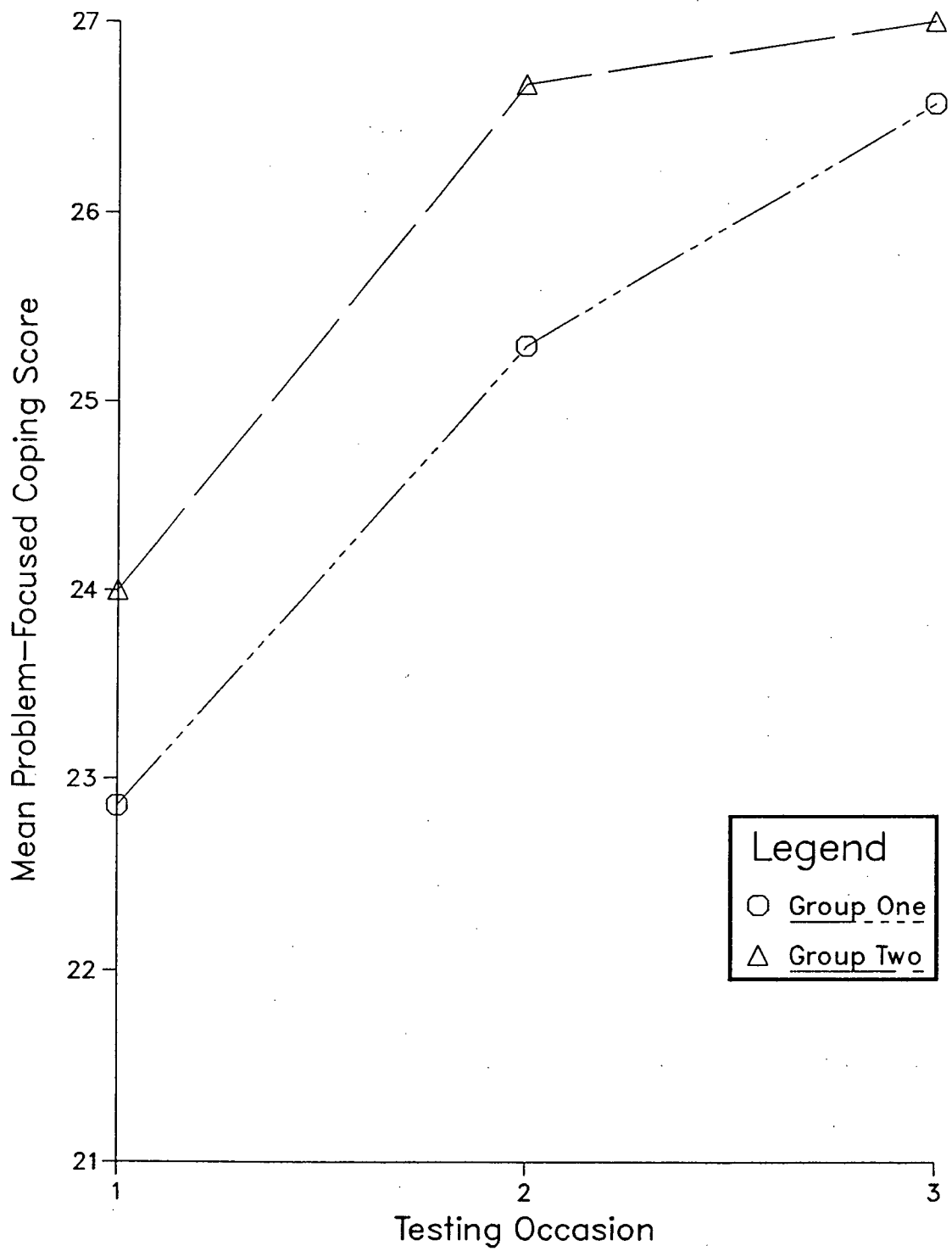
Figure 14. Means for Problem-Focused Coping Scale.

Table 10. Behavioural Coping Strategies Used by all Subjects
Pre- and Post-training (N=13)

<u>Pre-Training Coping Strategies</u>

Emotion-Focused:

7*	I believed in myself.
60	I had learned to accept certain things.
68	I talked with others.

Problem-Focused:

4	I logically thought things out.
19	I did what I needed to do.
39	I hung in there and kept plugging away.
46	I did the best I could.
55	I was organized and efficient.
57	I assumed a professional role/acted like an adult.
69	I responded to positive feedback.

<u>Post-Training Coping Strategies</u>

Emotion-Focused:

7	I believed in myself.
9	I used/kept my sense of humor.
62	What I could not do then, I did later.
68	I talked with others.
74	I enjoyed it and wanted to be there.

Problem-Focused:

2	I stepped back and tried to evaluate how I was doing.
4	I hung in there and kept plugging away.
12	I ordered things by priority.
27	I had set my own expectations.
29	I accommodated/made compromises.
40	I tried to understand what people were saying.
44	I had established clear priorities.
46	I did the best I could.
55	I was organized and efficient.
57	I assumed a professional role/acted like an adult.

*Item number

Effect Sizes

The table of effect sizes for measures in this study can be found in Table 11. The magnitude of the effect sizes for the three empathy measures and the perceived stress measure was very large. For instance on the empathy measures, subjects gained an average of 18.32 standard units on the Carkhuff Scale, 1.25 standard units on the BLRI (M-S Rating), 1.08 on the BLRI (S-P Rating), while perceived stress was lowered by 1.95 standard units as indicated by the negative effect size.

Table 11. Effect Sizes for Measures (N = 13, 2 Groups Pooled)

Measure	Unweighted Mean (Pre)	Unweighted Mean (Post)	Pooled Standard Deviation (Pre)	Effect Size
Carkhuff Empathy Scale (percentage of responses $\geq$ level 3)	3.11	47.62	2.43	18.32
BLRI (medical student ratings)	11.85	21.69	7.90	1.25
BLRI (simulated patient ratings)	1.85	23.46	20.11	1.08
Perceived Stress Scale	18.00	12.16	2.99	-1.95
Hardiness Scale	70.35	71.77	11.41	.13
Emotion-Focused Coping Scale (number of ways)	25.61	27.77	5.27	.41
Problem-Focused Coping Scale (number of ways)	24.62	26.08	4.59	.32

The pre-training standard deviation for the Carkhuff Scale was very small due to a small variance and floor effects. The training had the effect of raising and spreading out the scores, as there was a large range of scores on post-testing. The effect size was calculated using the pre-training standard deviation based on the recommendation of Glass and Hopkins (1984) that when "the treatment can affect the heterogeneity as well as the mean of the treatment group, $s_{control}$ should be used in the denominator" (p. 236). Hence, the resulting effect size was very large. However, if the pooled post-training standard deviation were to be used in the calculation, the effect size of this measure would be much smaller than 18.32. It is of interest to note that using the post-training standard deviation would result also in a larger effect size for BLRI simulated patient rating. The standard deviations of the other measures, however, were much less variable pre- and post-training (see Table 2) and so the effect sizes would be approximately the same.

These effect sizes verify the results of the hypotheses that empathy training leads to an increase of scores on measures of empathy and a decrease of scores on a measure of perceived stress. Even though this study had a small number of subjects, the high power due to the repeated measures design means that there was a high probability that it would lead to the rejection of the false null hypotheses if the intervention were to be sufficiently potent. Large effect sizes mean that the intervention was effective because effect sizes are the degree to

which the resulting change in scores exist due to the treatment and not to chance (Cohen, 1988). Effect sizes for the measures of the exploratory analyses (hardiness, and number of coping strategies) were much smaller than for the measures of the main hypotheses. This may be due, in part, to lack of power, with a small number, to detect changes in these particular measures.

Session and Training Evaluation

Comments by the subjects on the individual training sessions were placed into categories based on the standard steps in a skills-training program identified by Egan (1986). They include cognitive clarity, behavioural clarity, practice, evaluation, and reflection. All segments of the written feedback could be easily categorized into these mutually exclusive groupings (Tables 12 & 13).

Forty-nine percent of the answers concerning what the subjects learned pertained to cognitive clarity (e.g., importance of empathy). The aspect of the course which the subjects enjoyed the most was practising (both patient and physician roles) as was indicated by 49 percent of the responses. The aspects of the course which the clients liked the least were indicated as reflection, e.g., "I was tired and had difficulty concentrating" (30% of responses) and "Nothing I didn't like" (26% of responses).

Suggestions for improvement of the course are presented in Table 14. Just as practice of skills was the aspect of the course which the subjects appeared to like the most, more

Table 12. Frequency of Responses from Session Feedback

(A) WHAT I LEARNED TODAY WAS . . .

<u>Theme</u>

<u>Session 1</u>	No. of <u>Responses</u>	<u>Examples</u>
Cognitive Clarity	15	Purpose and rationale of the course e.g., importance of paraphrasing
Practice	9	Active listening
Reflection on Training	4	To trust my intuition on how I perceive another is feeling
<u>Session 2</u>		
Cognitive Clarity	6	Empathy formula
Practice	4	How to "concentrate" on reflecting
Behavioural Clarity	2	Integrating the specific skills with my style
Evaluation	1	Became more aware of non verbal cues from videotaping
<u>Session 3</u>		
Behavioural Clarity	7	How anger can be handled using empathy
Cognitive Clarity	4	Nature of the emotion of anger
Reflection	3	Awareness of self, i.e., my empathizing with anger involves avoidance
Practice	1	Practice of skills
Evaluation	1	I need to build my vocabulary of phrases to use for the empathic responses
<u>Session 4</u>		
Cognitive Clarity	11	Grief is a complex emotion
Behavioural Clarity	5	Mechanics of empathic responding
Evaluation	1	From feedback - insight into personal attributes and idiosyncrasies

Table 12 Continued

(B) WHAT I LIKED MOST ABOUT TODAY WAS . . .

<u>Theme</u>

Session 1	No. of Responses	Examples
Practice	12	Small group practice of skills
Behavioral Clarity	5	Modelling
Reflection on Training	3	Being challenged and having informal structure
Cognitive Clarity	1	Simple principles taught
Session 2		
Evaluation	5	Usefulness of videotaped feedback
Practice	4	Role playing
Reflection	3	Feeling that I've accomplished something
Cognitive Clarity	1	Usefulness of empathic formula
Session 3		
Practice	6	Role playing (including role of patient being played by instructor)
Evaluation	4	Videotaping and following discussions
Cognitive Clarity	1	Awareness that you can apply empathy to various emotions
Behavioral Clarity	1	SIMED tape on anger
Session 4		
Practice	9	Chance of doing 2 interviews
Evaluation	7	Feedback from videotaping
Behavioral Clarity	1	Having leader role-play
Cognitive Clarity	1	Critical thinking can be suspended in interview to benefit both the patient and doctor

Table 12 Continued

(C) WHAT I LIKED LEAST ABOUT TODAY WAS . . .

Theme

Session 1	No. of Responses	Examples
Reflection	6	Goal-oriented attitude in myself and others; The feeling that being empathic doesn't achieve anything concrete
Cognitive Clarity	4	Listening to difference between empathy and sympathy
Practice	4	Having to "act" doesn't come easy to me
Nothing I didn't like	4	
Session 2		
Reflection	4	My own hesitancy in giving feedback
Evaluation	4	Being on videotape with myself as the patient
Nothing I didn't like	2	
Session 3		
Nothing I didn't like	6	
Practice	5	Acting the emotion
Reflection	1	Feeling not in control during my interview
Session 4		
Nothing I didn't like	5	
Reflection	4	I was tired and had difficulty concentrating
Evaluation	3	Role playing - I can't "act"!
Cognitive Clarity	2	Wanted more discussion on grieving and how a grieving patient may present

Table 13. Number of Responses to Evaluations for all Sessions

	Session				
	1	2	3	4	Σ
"What I learned ..."					
Cognitive clarity	15	6	4	11	36
Practice	9	4	1	–	14
Reflection	4	–	3	–	7
Behavioural clarity	–	2	7	5	14
Evaluation	–	1	1	1	3
					74
"What I liked most"					
Cognitive clarity	1	1	1	1	4
Behavioural clarity	5	0	1	1	7
Practice	12	4	6	9	31
Reflection	3	3	0	0	6
Evaluation	0	5	4	7	16
					64
"What I liked least"					
Cognitive clarity	4	0	0	2	6
Behavioural clarity	0	0	0	0	0
Practice	4	0	5	0	9
Reflection	6	4	1	4	15
Evaluation	0	4	0	3	7
Nothing	4	2	6	5	17
					54

practice was also the most frequently mentioned suggestion for improvement.

Table 14. Suggestions for Improvements to the Course

Suggestion	No. of Times Mentioned
1. More time for role playing in front of the video camera (i.e., more practice) and less time watching.	5
2. More integration with the medical interview	2
3. Have people other than classmates (ideally real patients) do the role playing to help in terms of realism.	2
4. Fix feedback noise on video machine.	2
5. Suggest to students that they implement their skills with patients once a week and relate it back to the group.	1
6. Have more discussion on how to recognize particular emotions in a patient.	1
7. Have group sit in a circle.	1
8. Start course earlier in the year.	1
9. Shorten the sessions to 2 hours and have them more frequently.	1

The overall comments from all the subjects were very favourable. Subjects expressed appreciation for the course and the overall feedback was predominantly enthusiastic. Excerpts from the general set of comments from three subjects will now be presented.

(1) "I think the course was great! I'm sure it will be
very useful and helpful in practice. Watching the
video tapes of the T.V. course, as well as experience
in my own life, really brought to my attention how
important empathic training is. The skills are helpful
to the patient and to the doctor as well. I'm amazed
interviewing skills (and empathic training) aren't
taught to all health care students in 1st year. The
skills are relatively easy to learn and make a world of
difference in helping the patient work through their
problem and in helping the doctor to understand the
patient but remain objective and capable of seeing the
next patient".

(2) "The course is extremely useful, already, in "raising
the consciousness" or awareness to the patient's
feelings and agenda (in the 2nd year medical student).
There are almost a handful of occasions in the last 6
weeks on the wards where I noticed that the patient's
concerns were not addressed and were causing him/her
dystress (sic). A good experience. I enjoyed myself
and learned a good deal at the same time."

(3) "I felt this training was excellent and that I have
really benefited from it. I feel like I could go into
almost any situation and come out of it helping the
patient feel better. I think this training (or a
modification of it) would be very worthwhile for

anybody in the field of medicine, and would help both the physician and patient".

Summary of Findings

A summary of the findings from the tests of the main hypotheses can be found in Table 15.

Table 15. Summary of Significant Results from Analyses of Variance for the Main Hypotheses

	Carkhuff % Level 3	BLRI Sim.-Pt.	BLRI Med. Stud.	Perceived Stress
Hypothesis 1A & 1B (Treatment vs Control) Group x Time Interaction	.00*	ns	.04	.01
Hypotheses 2Ai & 2Bi (Follow-Up vs Control) Group Main Effect	.00	.00	.00	.00
Hypotheses 3A & 3B (Pre- vs Post-Treatment) Time Main Effect	.00	.02	.01	.00

*p values

In addition, t-tests revealed that the empathy scores did not increase and the perceived stress scores did not decrease for the subjects in the delayed treatment control group. Results of t-tests also showed that empathy and perceived stress scores were maintained after a follow-up time period.

Analyses of variance revealed that the scores on hardiness, and number of emotion-focused and problem-focused coping strategies did not change significantly over any time period.

Effect sizes as a result of treatment were large for all dependent measures used to test the main hypotheses.

CHAPTER V

Discussion

Introduction

This chapter opens with a summary of results followed by discussion of the findings for each of the measures. Implications for empathy skill training in medical schools and for physician-patient communication are suggested. Recommendations for further research close the chapter.

Summary

The results from this study showed that second year medical students learned to interact with emotionally intense simulated patients in a more empathic manner as a result of a short training course in empathic communication. Also, after the treatment, their perceived stress concerning these emotionally intense encounters was reduced. These results were not demonstrated with a control group of students who had been enrolled in regular medical classes. After participating in the empathy training however, the students in the (delayed-treatment) control group also demonstrated a significant increase in empathy scores and a significant decrease in perceived stress. Results from a short follow-up for subjects who received the initial training showed that these effects were maintained.

Discussion of Results of Dependent Measures

Percentage of Level 3 Responses

No other study was found which used percentage of total responses considered to be minimally facilitative as an outcome measure. For instance, in the Poole and Sanson-Fisher (1979) study, three, 2-minute randomly selected segments for each subject were rated. The overall level was the mean of the three separate ratings. A further difference in the two studies was that subjects in the present study were unaware that their responses were going to be rated using the Carkhuff scale. In contrast, subjects in the Poole and Sanson-Fisher (1979) study were told specifically to empathize as best as they could with the patients and that their responses would be rated using the Accurate Empathy Scale. Further, to motivate the subjects, the Poole and Sanson-Fisher subjects were told if they achieved a rating at a certain level, then they would be exempt from taking an additional communication course.

During the training sessions of the present study, in answer to the question, "How long do we continue to give empathic responses?" medical students were told to use their judgement to determine when the emotional intensity of the interview had de-escalated to a point where they could go on to more medical aspects of interviewing. Subjects were not told to give as many empathic responses during the testing occasions as they could; they were instructed on the written information sheet to "explore the nature of the problem" (See Appendix C). The average mean of the percentage of level 3

responses for the three post-training cells was 49%. On average, then, approximately half of the interviews were spent in interacting in an empathic manner with the simulated patients. This would not, however, necessarily reflect a goal for real interviews in which physicians must follow a medical agenda as well. Further research such as interactional analysis is needed to explore, for example, possible markers which indicate at what points medical students could move on to more medical aspects of the interview.

BLRI (Patient Ratings of Empathy Scale)

The results for this measure showed that when the two groups' scores were collapsed and compared immediately pre- and post-training, the subjects were rated by the simulated patients as being significantly more empathic.

Even though the means were much higher for subjects in the first training group compared to those in the control group for the patient rated empathy subscale, the wide range in distribution of scores led to a non-significant difference. The large standard deviation indicates that there were varied and unique interactions. As Schweitzer has said "medicine is . . . the art of letting our own individuality interact with the individuality of the patient" (cited in Siegel, 1986, p. 33). Also, as I have mentioned in chapter 3 when discussing internal threats to validity, I think the medical students performed as best as they could in all testing occasions. Most people will respond to a physician who is

trying hard to communicate with them (Fletcher & Sarin, 1988).
The simulated patients may have given high ratings to the
subjects whom they perceived to be making great attempts to
understand them through for example non verbal means. As one
simulated patient wrote on the BLRI after interacting with a
pre-trained subject: "[name of subject] has the understanding
(I felt he was sensitive), but not the words. He wants to
understand, but feels awkward, I think, without the words."

Perhaps some of the simulated patients, gave ratings to
the subjects partly based on a "nice guy" quality, or rated
subjects on their inner sensitivity. Indeed Barrett-Lennard
(1981) noted that empathic understanding is not a concept in
the awareness of a person answering the BLRI since it does not
require them to rate the subject's level of empathy directly.
The instrument is an indication of "relational response, which
are then put together and interpreted as providing an index of
empathic understanding" (Barrett-Lennard, 1981, p. 95).

BLRI (Medical Student Rating of Empathy Scale)

One of the purposes of this study was to show how empathy
skill training would help medical students. One of the ways it
may have helped is that after training the medical students
perceived themselves to be more empathic than before they
received the training. This means, according to some
questions on this scale, that the medical students saw
themselves as more understanding toward the patients and
better able to appreciate patients' experiences without

letting their own feelings interfere. They were able to respond concretely to the feelings and meanings associated with patients' experiences, and possibly found empathy to be a helpful and credible task as important to patients as a medical activity given that patients were experiencing considerable emotional distress.

The last three sections provided a discussion of the phases involved in the cycle of empathic interaction. The complete process was examined to avoid measuring verbal empathy or affective sensitivity only. This is important because a person could communicate verbal empathy yet lack sensitivity, or conversely, a person could have internal empathic sensitivities but lack the ability to verbalize affective awareness (Hackney, 1978). All three stages of the cycle of empathic communication were measured in an attempt to gain a greater understanding of changes as a result of empathy skills training.

Perceived Stress Questionnaire

After the empathy training, subjects in general viewed interactions with simulated patients as being less stressful and less demanding than before the training. They also felt more confident in their responses and more helpful to simulated patients after the course. Thus, by attending to the simulated patients' intense emotions and by having the skills to respond in a way that they viewed as helpful, and by viewing themselves as empathic, the medical students' stress

levels were apparently decreased. In other words, by having concrete skills, they were able to cope with the stressful situation more appropriately, and thus appraised the situation as being less stressful.

Batson et al. (1987) presented a two-part model suggesting that distress leads to motivation to reduce one's own level of arousal while empathy leads to motivation to reduce the other's need. This suggests that the two are mutually exclusive, that is, an "either-or" situation. Results from this study may suggest that after empathy training empathic responding also resulted in subjects' own distress being reduced.

Folkman and Lazarus (1988) suggested that coping affects emotion possibly by acting as a mediator. After training, subjects may have felt more confident with their abilities to deal with the emotionally intense situations due to having some useful coping skills. Thus, their stress levels would be decreased. Empathic responding may be viewed as a form of emotion-focused coping, that is, an action to try to alleviate the emotional distress of the situation. After training the medical students' focus may have been more on the simulated patients' feelings and experiences instead of on their own sense of helplessness and frustration as in pre-training. The subjects felt confident that they could manage because they had some appropriate skills. The activity of empathic responding, then, may have a mediating function which when used reduced the stressfulness of the emotionally intense

encounter. Medical students may have felt effective because they were doing something which was helpful to the patient. A model illustrating the difference between empathy and distress, and suggesting how empathic responding acts as a mediator of emotion is presented in Figure 15.

Distress (Pre-Training)

| Presentation of intense emotional issue by patient | Awareness by medical student of patient's intense emotion, and of emotional reaction in self. Desire to "do something." | Distress experienced by medical student e.g., frustration | Ineffective coping (i.e., Uncertainty as to how best to deal with the situation) | Increase in stress level of medical student |

Empathy (Post-Training)

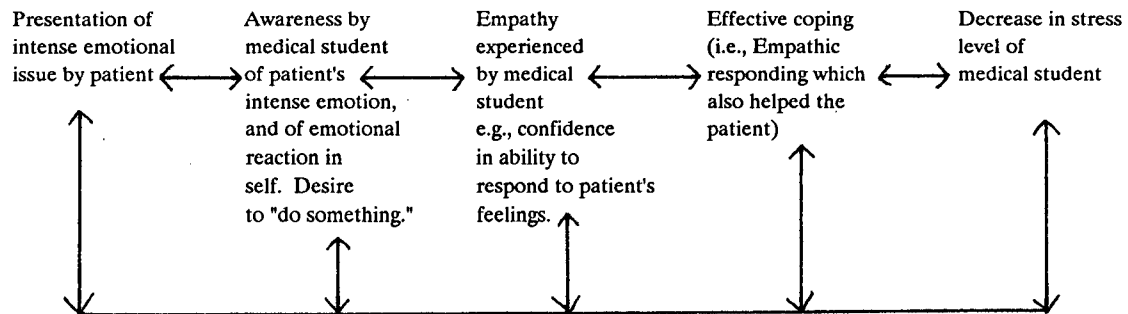| Presentation of intense emotional issue by patient | Awareness by medical student of patient's intense emotion, and of emotional reaction in self. Desire to "do something." | Empathy experienced by medical student e.g., confidence in ability to respond to patient's feelings. | Effective coping (i.e., Empathic responding which also helped the patient) | Decrease in stress level of medical student |

Figure 15. Outline of differences in medical students' emotions and coping behaviours before and after empathy training.

Hardiness

There was no change in the hardiness scores as a result of the treatment. Hardiness may be considered to be a stable trait measure which may not be amenable to change over a short period of time. It appears that subjects in this study were a

fairly homogeneous group with respect to hardiness. The fact that their scores were no different than a group of 447 psychology undergraduates (Hull et al., 1987) may lend support to the conclusion that persons need not be superior with respect to "stress-resistance" in order to learn empathic responding and be able to cope effectively with emotionally-intense situations.

Behavioural Coping Strategies

Overall, the number of coping strategies used to cope with the stress of medical training did not increase as a result of the empathy training. However, two trends are worth noting. First, after the empathy training, the number of emotion-focused coping strategies compared with the number of problem-focused coping strategies approached significance (p=.053). Perhaps the empathy training, in which subjects acknowledged other's emotions, encouraged them also to attend to their own emotions and seek actions or thoughts to relieve the emotional impact of stress. Further research is needed to investigate whether empathy training has an impact on the number of coping strategies used to deal with the stress of medical training.

Second, after the empathy training, the number of emotion-focused coping strategies used by subjects in both groups compared with the number used before training approached significance at (p=.08). Empathic responding may be viewed as a form of emotion-focused coping (i.e., action to

reduce the emotional impact of stress), and so the number of other emotion-focused ways of coping may have increased also. Further research is needed to investigate whether empathy training results in a significant increase in the number of emotion-focused strategies used to cope with the stress of medical training. Ways of coping may be habits, learned over a long period of time, and so may be resistant to change as a result of a short term intervention.

Effect Sizes

One might expect bigger effect sizes for the empathy and perceived stress measures because they may be more directly related to and influenced by the training. As was discussed, hardiness may be a more stable personality trait and ways of coping may be long term habits; both may not be easily influenced by such a short term intervention.

Implications for Empathy Skill Training
in Medical Education

One of the implications of the results of this study is that medical students can learn to respond to simulated patients in a more empathic manner after participating in an empathy skills training course. Although studies have been conducted which evaluated the effects of a general interviewing skills course for second year medical students (e.g., Monahan, Grover, Kavey, Greenwald, Jacobsen, & Weinberger, 1988), no study was found in which empathy

training specifically was offered to second year students. It may be important for medical students to receive empathy training in addition to a basic interviewing skills course. They have indicated a need to acquire specific skills to use when dealing with patients' emotions (Batenburg & Gerritsma, 1983). Intense emotions can be very challenging and require special skills. One subject, after a post-training interview in response to the question "What made this situation demanding for you?": wrote "It is more difficult (demanding) to help a patient deal with an intense emotion than to take a medical history". This echoes the often quoted words of Kafka (1971). "To write prescriptions is easy, but to come to an understanding with people is hard" (p. 223).

The second year of medical training may be an appropriate time to introduce a short course in empathy skills training into the medical school curriculum. Medical students could then begin early in their training, when they first begin to see patients, to identify situations in which empathic responding may be appropriate. For instance, during this training, one subject said she noticed that when one hospital patient's emotional issue was not acknowledged by her physician, the patient kept bringing up the issue.

By acquiring empathy skills early in their training, medical students could practice and gain more experience in managing emotionally intense encounters. When students begin to interview patients, they may have anxieties about their communication skills, their medical knowledge, and their role

as physicians. In situations in which there are no easy
medical solutions or when patients somatize distress, medical
students may find empathic responding to be useful as a method
of dealing with patients' emotional issues. During the
training one subject reported an experience in which she found
empathic responding to be effective. She was talking to some
members of a family who expressed a lot of their frustrations
associated with placing an aging parent into a nursing home.
While she recognized that there was nothing medical which
could be done, she reported that by listening and empathizing
and allowing the people to express their feelings, she felt
she was able to do something which was helpful to the family
members at the time. As a result of empathy training, the
high stress levels associated with emotionally intense
interactions may be reduced because medical students have
effective coping skills. Students need more than to mean
well; they want to do something. Before the training, the
subjects appeared eager to help the simulated patients;
however many felt distressed in not knowing the best way to
proceed. Although empathic responding may not seem as
concrete as a medical procedure, through role playing students
realize that it is an additional skill which is therapeutic
for patients. Researchers have concluded that while patients
do not expect physicians to solve all of their problems, they
do expect their doctors to listen to them (Putnam et al.,
1988). Eisenberg (1988) also noted:

> Doctors are trained to 'do something'. They believe
> that patients expect a consultation to have a
> tangible outcome: a pill or a shot. It requires
> the disruption of overlearned habits to change from
> doing to listening (and to come to recognize that
> listening is an important way of doing). It demands
> a shift in paradigms from disease to illness in
> order to change from prescribing to attending to
> meanings and to helping patients to examine options.
> (p. 208)

Through practice and reinforcement in a course early in
medical training, students can incorporate empathic responding
into their natural communication style. However, it is
necessary also to review empathy skills in subsequent years,
given Engler et al.'s (1981) results that while medical and
technical skill increases with medical training, the ability
to communicate well with patients is not maintained if the
students do not receive appropriate skill training. Wolraich
et al. (1981) also found that while first year medical
students did inquire about patients' psychosocial concerns,
senior students neglected to gather psychosocial data while
being efficient in history taking around physical concerns.
Having more medical knowledge appeared to interfere with
communication in the physician-patient relationship. Putnam
et al. (1988) reported a study in which medical residents felt
inadequate as counsellors, but, because they wanted to "do
something", they searched even harder for biological causes
for patients' psychosocial problems, even though they knew
this was quite futile. Thus empathy skills should be
continually reinforced with training so they are not forgotten
with medical and technical knowledge. In addition, in order

to reinforce students' learning it would be most helpful to have instructors and peers use empathy skills.

As a result of empathy training, medical students have an opportunity to build their confidence about managing emotionally intense situations, so that when they interact with "real" patients, it is not a completely foreign experience for them. A number of subjects remarked, after demanding interviews with simulated patients, that they were certain they would encounter similar emotionally intense situations in their practice. Logan (1987) suggested that communication skills will remain relevant throughout students' medical careers, while medical knowledge may not. And Numann (1988) concluded that if medical students do not receive courses during their medical training, then there is no assurance that students will be able to communicate effectively with patients.

Another advantage of introducing empathy skills early in medical training is that students who are admitted into medicine may be low in empathic tendency, and may require more skill training to enhance this desirable quality. Diseker and Michielutte (1981) measured empathy in a class of medical students in 1979 using Hogan's empathy scale, and they found that the scores were unrelated either to academic performance or to performance on Parts I or II of the exams of the National Board of Medical Examiners. Empathy scores also correlated negatively with Medical College Admission Test Scores, and these authors concluded that "it is possible that

the medical student selection process is biased in favor of nonempathic students" (p. 1009).

Other measures have been used to assess empathic qualities of applicants to medical schools. For instance, scholars at Michigan State University, after finding no existing empathy test nor interviews to be satisfactory, devised a new measure to assess a variety of skills related to empathy. This test, which takes one hour to complete, consists of three written subtests and two visual subtests (Krupka, Epstein, Molidor, King, Parsons & Son, 1977 cited in Rezler & Flaherty, 1985). Entry scores on the Empathy Skills Rating Scale were related to faculty ratings of empathy but were unrelated to scores on tests measuring knowledge (Rezler & Flaherty, 1985).

DiMatteo et al. (1986) pointed out that two routes exist to increase humanism in medical practitioners: selection and training. However, these scholars concluded that to date no acceptable measures of interpersonal skills are available to screen applicants for medical school or residency programs. Training, they suggested may be a much better approach to enhance the level of humanism in medical practitioners.

One of the reasons that the training given in the current study increased levels of empathy may have been due to the experiential nature of the exercises. Role-playing allowed the subjects the opportunity to imagine and identify patients' feelings. They were also encouraged to be aware of what they

themselves were experiencing. If medical students receive empathy training, they may not avoid or deny intense emotions either in themselves or their patients. Through debriefing their practise exercises, students have an opportunity to express and discuss their feelings, especially their fears, about interacting with emotional patients. By being aware of their own emotions, students may have more energy for their work given that less energy is required to keep their own emotions dampened down. Awareness of their own emotions is necessary also for empathic responding to patients. As was stated by Craig (1987), "Our capacity to empathize and share others' experience of distress . . . provides a basis for caring for others in physical distress (p. 311). And Elizur and Rosenheim (1982) noted that an understanding of one's own emotions allows one to identify other's feelings. Rogers stressed the importance of maintaining the "as if" stance in order to remain objective, because empathy is feeling with others and not feeling as do others. Yet the clinician must remain in touch with his or her own feelings as a foundation on which to relate emotionally to a patient (Meador & Rogers, 1981). During the empathic process Rogers believed that:

> The therapist . . . tries to immerse himself in the
> feeling world of his client and to experience that
> world within himself. His understanding comes out
> of his own inner experiencing of his clients'
> feelings, using his own inner processes of awareness
> for a referent. He actively experiences not only
> his client's feelings, but also his own inner
> responses to those feelings. (p. 132)

A further advantage of being self-aware, is that medical students may not project their own emotions onto their patients. This is important in light of the results reported by Hornblow et al. (1988) which showed that fourth year medical students who were themselves more anxious or depressed consistently overrated anxiety and depression in patients. Hornblow et al. concluded:

> These data suggest a need in medical education for systematic teaching of empathic skills and for recognition of potential bias in clinical decision-making arising from the clinician's own emotional state. (p. 16)

In the present study, after the training, subjects reported experiencing much less distress when they engaged in emotionally intense situations. Empathy training may potentially help to combat depression, fatigue, and dissatisfaction which scholars (e.g. Girard et al., 1986; Smith et al., 1986) have found increases during medical education. In addition, medical students may have more energy to cope with other patients and may not carry their own distress and frustrations into their next medical encounter. Ultimately empathy training may be a factor in helping to decrease stress-related conditions such as negative attitudes towards patients, emotional burnout, and substance abuse. Further studies are needed to investigate whether results from the present study generalize to students in other medical class years as well as to practicising physicians and actual

patients. Also, a long term follow up may prove effective in determining the lasting benefits of empathy training.

Recently, scholars have suggested that the high levels of stress experienced by medical students may lead to the development of negative coping patterns and may interfere with the natural development of humanistic and interpersonal skills which, in turn, adversely affects the physician-patient relationship (Matthews, Classen, Willms, & Cotton, 1989; McCue, 1982). It is my hope that the advantages of empathy training may fulfill, in part, a need expressed by a Harvard medical student when discussing his training:

> There is no time to express our feelings of sadness for the patient, to articulate our fear that he or she or our relatives or ourselves will die, to discuss the impact of our decision to enter a profession where suffering is a constant companion. Instead, we flounder, striving to ask insightful questions both to impress our instructors and to combat our sense of sadness and inadequacy. We are taught from the beginning not to express our emotions, as if they might in some way interfere with our ability to be competent doctors . . . I often question . . . whether I will be able to keep up with recent advances, . . . or to understand and empathize with my patients. . . . My medical training, by ignoring these questions, is not making me more confident about these issues, rather it is teaching me not to consider them, denying me the chance to recognize my fears. (Hilfiker, 1985, p. 205)

Implications for Communication in the
Physician-Patient Relationship

The purpose of this section is to present clinical implications and to suggest how the results of the present study support the adoption of the more inclusive biopsychosocial model of medical interviewing. A discussion of how empathy may help achieve two purposes of the medical interview is presented. The first of these goals as outlined by Engler et al. (1981) is to gather information concerning the nature of patients' illnesses in order to identify correct diagnoses and treatment plans. A second goal of the medical interview is to establish interpersonal relationships between physicians and patients so that effective communication can occur.

A central theme of the biopsychosocial model of medicine is that physicians must gather information concerning their patients' "lifeworlds." These factors will help physicians understand the cause of the illnesses and patients' subjective experiences of them. Such information will enable physicians to make more accurate diagnoses and effective treatment plans. Empathy could be a valuable skill to use in understanding patients' perspectives because, by definition, it is the ability to understand other persons' feelings and meanings of their experiences.

Engel (1988), the physician who first described the biopsychosocial model, suggested that in order for physicians to be truly scientific, they must take into account patients'

"inner experiences" (p. 121), because such information allows physicians to gather complete and accurate data. He supported the use of empathy in this process as indicated in his writing:

> The physician has no alternative but to behave in a humane and empathic manner, that is, to understand and be understanding, if the patient is to be enabled to report clearly and fully. Only then can the physician proceed scientifically; to be humane and empathic is not merely a prescription for compassion . . . it is a requirement for scientific work in the clinical realm. (p. 122)

Physicians must have skills to elicit relevant information from patients - which may be a challenging task due to the complexity of human beings. As Stephens (1988) pointed out, patients present themselves in "exasperating wholeness." In situations in which a problem is highly affectively charged or has psychosocial roots, patients may be emotional and may not be aware of what information is relevant or what is irrelevant. It is thus imperative that physicians have skills to identify and attend to relevant information (Schwartz & Wiggins, 1988).

Empathy can be effective in eliciting information regarding patients' emotional concerns. If patients feel understood by physicians who demonstrate empathic understanding, they may continue to volunteer useful information - information which can clarify the source and cause of factors related to illness. In addition, physicians, by being less stressed, may also be less defensive when dealing with patients' emotions such as anger. Research

conducted by Gibb (1961) revealed that decreased defensiveness leads to more efficient communication. By being less defensive, medical practitioners may be able to better process the information they gather from patients.

The communication of empathy may be particularly helpful for physicians to use when the feeling state is the primary problem or, in the term of Eisenberg (1988), when patients "somatize distress" (p. 205). If physicians acknowledge emotions directly, patients then have an opportunity to express their emotions and, through this ventilation, the emotional intensity may be diffused. Physicians may then be able to assess what part emotions have in the presenting problems. The diagnosis may be "no formal disease present"; that is, the feeling state may be the problem. Physicians may be able to better recognize, for example, that a patient who has suffered a recent loss and is crying, may be experiencing intense sadness and not necessarily clinical depression and may not require medication. The treatment plan may include another visit with the physician or an appropriate referral. In some circumstances the emotional release afforded by empathic communication may in itself be sufficient treatment for the patient (C.P. Herbert, personal communication, 1989).

Empathy may be a valuable skill for physicians to use in other situations in which a highly charged emotional component or psychosocial factor accompanies a physical complaint. As was discussed in the literature review, psychosocial factors

are a part of patients' concerns in a majority of visits with the primary care physician. If the emotion is not acknowledged, the patient may be so preoccupied with it that the physician cannot obtain further information regarding the physical complaint and this may result in the inability of the patient to focus on medical advice offered and result also in both persons becoming highly stressed (Korsch & Negrete, 1972). If, however, the physician acknowledges the emotion, the intensity of the affect may be reduced so that further data collection regarding the physical complaint may be an easier task (Engler et al., 1981). Empathy is, perhaps, a means to acknowledge, explore, and deal with the emotional component of patients' complaints. Further studies are needed to examine the usefulness of empathy in actual medical interviews.

In the terminology of the patient-centred model (Levenstein et al., 1986), by acknowledging emotions directly and thereby considering patients' agendas, physicians may find that it facilitates attending to their own agendas which includes gathering information, making accurate diagnoses, and giving useful medical advice. By exploring patients 'lifeworlds' in addition to attending to the biomedical aspects of the complaint, physicians make possible an integration of both agendas.

Empathy is an effective skill for both physicians and counsellors even though the process and aims of the two types of helping professionals may be different. The focus of the

medical interview is on diagnosis and treatment in the context of generally brief and infrequent contact, whereas, the focus of counselling interviews is on promoting desired changes in individuals which occur as a result of a series of longer visits. However, both disciplines require skills to establish rapport and therapeutic relationships with clients, and both require skills to successfully identify and explore the nature of complaints. Empathy is a common skill which can assist both types of professionals in the helping process.

A popular belief is that demonstrating empathy takes too much time - time which busy physicians do not have (Dickinson et al., 1983). However, as the results from this study show, it is possible both for medical practitioners to explore simulated patients' feelings and to respond empathically, and for simulated patients to feel understood, in the time frame of the short office interview. From physicians' points of view, empathic responding and attending to patients' cues may assist them in gaining an accurate understanding of patients' experience of their illness - an understanding which may ultimately save time and health costs. As a result of early recognition of a a psychosocial factor, a more accurate diagnosis may be revealed avoiding the need for repeated visits, costly and perhaps risky diagnostic tests and procedures, and use of unnecessary drugs and referrals (Branch, 1987; Eisenberg, 1988; C.P. Herbert, personal communication, 1989). Empirical evidence is needed to examine

whether information gained from actual patients as a result of empathic responding leads to a more accurate diagnosis.

Empathy may help to achieve a second goal of the medical interview which is to establish a trusting interpersonal relationship so that good communication can occur. Improving empathy skills of medical practitioners may improve their relationships with patients, particularly in emotionally intense interactions. Patients, by having their emotions acknowledged and legitimized, might find that their potential to manage their own issues is released. Improving relationships with patients is important because, as stated in earlier chapters, miscommunication can be a major factor in patient dissatisfaction, non-compliance, poor healing, poor rapport, malpractice litigation, errors in diagnosis, and can result also in a stressful relationship for both physician and patient. Providing interviewing and communication skills courses to physicians was identified as a means to ameliorate these problems as noted by White (1988):

> Of all the efforts the medical establishment might make, this one is the most likely to reduce malpractice litigation, improve patient compliance, save money and enhance the medical profession's public image. (p. 71)

Aspects of the interaction between physicians and patients have been shown to be important factors involved in patient satisfaction and compliance (Ben-Sira, 1980; DiMatteo, Taranta, Friedman, & Prince, 1980; Korsh & Negrete, 1972). Physicians' behavior which was more patient-centered has been

associated with better outcome. The Headache Study Group (1986) found that patients who perceived that their physicians engaged in a thorough discussion about their headaches during an initial interview reported better recovery from headaches one year later. Stewart (1984) found that patients who expressed their feelings (e.g., tensions) as a result of physicians' facilitating behaviours tended to be more satisfied and reported greater compliance. After reviewing relevant outcome research Stewart, Brown, and Weston (1989) concluded, "that important patient outcomes are improved by communication between doctors and patients that is characterized by full expression of the patients' problems, leading to a mutual understanding" (p. 160).

Effective relationships between physicians and their patients is not a new area of attention or investigation. Balint (1957) maintained that a trusting relationship between a physician and patient can be healing in itself. Patients have always appreciated physicians who were sensitive to their emotional needs (DiMatteo, et al., 1986). In fact, one of the virtues of the general practitioner before the rise in therapeutic advances in medical technology was his caring interpersonal manner. For instance, I often heard my grandmother praise the doctor who, in rural Nova Scotia at her farmhouse, delivered her 10 babies. When I asked my 91 year old grandmother what was so special about him, she replied, "Oh, he was just an ordinary man, and he just knew how you were suffering." Her reply to my inquiry about the medical

equipment he carried was, "Not much - tools for delivering babies, that's about all" and she reiterated that "he just knew how you were suffering." I was impressed that it was not that this doctor took away patients' suffering, but that he understood and acknowledged it which made him so special. This physician's interpersonal caring manner was fondly remembered - even after he had been dead for over 25 years.

Realistically, however, the old general practitioner is not a role model for physicians today (Eisenberg, 1988). Society is much more transient now, and the family physician is not as likely to know the family network. Also, there is much more pressure on physicians to be aware of the many advances in medicine. Whereas the general practitioner of yesteryear had an abundance of caring and compassion, and few effective medical treatments to offer, physicians today have technological advantages and many impressive treatment options. These technological developments can make medical treatment seem very impersonal, and can result in patients' pain and suffering (Cassel, 1982; Maquire, 1981). Therefore, patients may depend even more on their physicians for human caring and compassion (Messenger, 1989). It is important therefore to sustain a balance between natural science and humanism. McWhinney (1988) stated:

> Paradoxically, it is the successes of medical technology that have exposed so vividly the limitations of the traditional method. Concentration on the technical aspects of care has diverted us from the patient's inner world, an aspect of illness the method does not routinely force on our attention. The complexities and

discomforts of modern therapeutics have made it even
more important for us to understand the patient's
experience. (p. 221)

Research from this present study supports the recent

literature which indicates that empathy is an important

communication skill for medical practitioners. In addition to

stress reduction, empathy may also provide a balance between

overidentification and dehumanization in regard to physicians'

responses to patients. Carek (1987) suggested that empathy

can bridge the gap between psyche and soma, between the mind-

body dualism. In 1927 Peabody concluded that "the secret of

the care of the patient is in caring for the patient"

(p. 882). Buchsbaum (1986) stated that "empathy conveys

caring, the *sine qua non* of the doctor-patient relationship"

(p. 425). If empathic communication is, as suggested by

Carkhuff (1969) "the key ingredient of helping," then it is

important that all medical practitioners possess such an

ability.

Suggestions for Further Research

Suggestions for further research include:

(a) Medical student-simulated patient encounters could be

analyzed using interactional analysis such as Bales

Interaction Process Analysis (1951) or Kagan's (1975)

Interpersonal Process Recall technique in order to begin

to generate a functional model of how empathic responding

may be incorporated with the more medical aspects of

interviewing. The model could have separate sections for the different emotions of fear, anger, and grief. Also, the tapes from this study could be analyzed using the criteria identified by the Patient-Centred Clinical Method (Stewart, Brown, Levenstein, McCracken, & McWhinney, 1986).

(b) This study could be replicated using practising physicians as well as students in other medical class years to see if the results would be replicated.

(c) Subjects could be followed-up to see if the results are maintained over a long time period.

(d) It would be of interest to replicate this study using outcome measures from actual patients; however, control concerning the intensity and nature of the emotions presented would not be possible. An advantage of studying actual patients is that it would be possible to examine whether an association exists between empathy measures and patients' health outcome measures The Empathy scale of the BLRI may be an appropriate measure because high scores on the client form of the BLRI have been associated with treatment gains in counselling (Barrett-Lennard, 1962).

(e) Future studies using a large number of subjects could divide subjects into high-hardy and low-hardy categories. Analyses could examine whether high levels of hardiness would be associated with high levels of empathy, in order to determine whether hardiness is a helper

characteristic. In order to replicate the current study and achieve statistical significance for measures of coping and hardiness, based on the reported analyses and effect sizes, sample sizes of approximately 200 and 1000 respectively would be needed (Hully & Cummings, 1988).

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Appendix A

Perceived Stress Questionnaire

Post Interview Questionnaire

(1) How stressful was this interaction for you?

1	2	3	4	5	6	7
not at all			somewhat			extremely

What made it stressful for you?

(2) How demanding was this situation for you?

1	2	3	4	5	6	7
not at all			somewhat			extremely

What made it demanding for you?

(3) How emotionally distressed was the patient?

1	2	3	4	5	6	7
not at all			somewhat			extremely

How did the patient indicate this distress?

(4) How confident were you in your responses?

1	2	3	4	5	6	7
not at all			somewhat			extremely

What would you have liked to have done or said differently?

(5) How helpful did you feel when interacting with this person?

1	2	3	4	5	6	7
not at all			somewhat			extremely

What feelings did you have during this interview? What are you feeling now?

Appendix B

Outline of Empathy Training Sessions

Outline of Empathy Training Sessions

Session I

Introductions

Overview and outline of training

Relationship building: Identifying fears and expectations

Discussion of simulations

Lecturette: Empathy
    - What it is
    - Why it is important in physician-patient
      relationships

Modelling Empathy and Active Listening

Practice of Microskills (in Pairs)
    -attending (importance of SOLER)
    -active listening
    -paraphrasing content and feeling using communication
     leads

Process of activity in whole group

Closing

Session II

Opening

Comments and reactions re paraphrasing

Empathy formula: "you feel. . . . because. . . ."

Guidelines for facilitative feedback

Practice of empathic responses using communication leads (in
dyads)

Overview on topic of emotion of "fear"

Demonstration (modelling) of demonstrating empathy in
situations involving fear

"Round Robin" role-play exercise

Empathy practice using "natural" communication leads

Videotape of practice interviews involving emotion of fear

Processing of taped interview

Closing

Session III

Introduction

Overview of topic of emotion of Anger

Tape on Anger and discussion

Demonstration of using empathy in anger simulations

Practice and videotape of practice interviews involving emotion of anger

Presentation and discussion of the "Patient-Centred" Model

Lecturette: Non-verbal cues to emotion (e.g., voice tone)

Practice and discussion of non-verbal cues to various emotions

Closing

Session IV

Introduction

Overview of topic of emotion of Grief

Tape on Grief and discussion

Demonstration of the use of empathy in grief situation

Practice and videotape of practice interviews involving emotion of grief

Further practice on responding to emotionally intense situations

Feedback on empathy program

Termination exercise and closing

Appendix C

Case Descriptions Presented to the Medical Students,

and

Trigger Sentences Used by Simulated Patients

in

Fear, Anger and Grief Testing Occasions

Case Presented to Physician-In-Training

Patient is a 30 year old male/female who has noted lumps in his/her neck. The surgeon to whom your partner referred him/her has recommended biopsy. The patient thinks this means he/she has cancer. He/she is seeing you today for the first time because your partner is away.

You have 15 minutes during which time you are to explore the nature of the problem, recognizing the limitations of your length of training to date. There is no "one right way."

Trigger Sentences for Simulated Patient

"I want to have the biopsy immediately--I can't stand not knowing."

"My mother had cancer and she died in great pain."

"What will happen to my two children if anything happens to me?"

"How can I possibly break this news to my husband/wife?"

Case Presented to Physician-In Training

Patient is a 35 year old teacher who enjoys sports as a hobby and who had a knee injury about 2 years ago. She/he continues to have knee pain and was sent by your partner, her family physician, who is away temporarily, to an orthopaedic surgeon, Dr. Stillwell, whom you both consult frequently. The patient arrives in your office, after having seen the specialist.

You have 15 minutes during which time you are to explore the nature of the problem, recognizing the limitations of your length of training to date. There is no "one right way."

Trigger Sentences for Simulated Patient

"That specialist you sent me to, Dr. Stillwell, he took all those X-rays over again! I thought X-rays were bad for you!"

"He hardly even talked to me, just jerked my knee around and gave me some pills! I told him what was wrong with my knee and he didn't even answer me!

"That man just wants to operate so he can make a lot of money! I thought doctors were supposed to help a person."

"It's been 2 years Doctor! I haven't been able to play sports or keep up with my family."

Case Presented to Physician-In-Training

Patient is a 35 year old married man/woman. Patient comes to you complaining of tightness in his chest, sporadic difficulty breathing and insomnia.

You have 15 minutes during which time you are to explore the nature of the problem, recognizing the limitations of your length of training to date. There is no "one right way."

Trigger Sentences for Simulated Patient*

"I wake up at 4:30 A.M. and I can't breathe."

"It's like I'm in a fog."

"I know my husband/wife blames me."

"I should have watched him/her more carefully."

*It was explained to the simulated patient during role training that the grief reaction was due to the fact that his/her 5 year old child was struck by a car and died two months earlier. This was to be revealed by the simulated patient during the interview.