TRANSFERENCE EFFECTS ON STUDENT PHYSICIANS' AFFECTIVE

INTERACTIONS AND CLINICAL INFERENCES IN INTERVIEWS WITH

STANDARDIZED PATIENTS: AN EXPERIMENTAL STUDY

A Dissertation

by

KIMBERLY LYNN VAN WALSUM

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

August 2005

Major Subject: Counseling Psychology

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ABSTRACT

Transference Effects on Student Physicians' Affective Interactions and Clinical

Inferences in Interviews with Standardized Patients: An Experimental Study.

(August 2005)

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This study applied Andersen's social cognitive paradigm for the experimental

study of transference to the problem of understanding transference effects on the affective

interactions and clinical inferences of student physicians with standardized patients.   The

investigator designed a 2X2 experimental study in which the independent variables were:

source of information for statements about a standardized patient (participant's own or

matched participant's) and valence of information in statements about the patient

(positive or negative). Dependent variables were: affect expressed by a student physician

in videotapes of a medical interview with a standardized patient, as measured by a

modified version of the Specific Affect – 16 code system (SPAFF-16), and clinical

inferences by the student physician as measured by the Physician Clinical Inferences

Scale (PCIS) developed by the investigator. Covariates included gender, physician

verbosity, and intergenerational family relationship variables as measured by the Personal

Authority in the Family System Questionnaire – Version C (PAFS-QVC). A 2X2

MANCOVA was conducted, along with hierarchical regressions of gender and PAFS-

QVC variables as predictors of negative and positive affect and clinical inferences

(likelihood of treatment success and patient as partner). One sample of undergraduate medical students (n= 71) provided data for the study.

Results indicated no statistically significant differences between experimental groups regarding the effect of the experimental manipulation of patient information on student physicians' affective interactions and clinical inferences with patients when gender, physician verbosity, and related PAFS-QVC variables were controlled. Hierarchical regression analyses of gender and related PAFS-QVC variables onto positive affect, negative affect, clinical inferences (patient as partner) and clinical inferences (likelihood of treatment success) revealed statistically significant effects of intergenerational family relationship and peer relationship variables on student physicians' affective interactions and clinical inferences with patients.

DEDICATION

"We don't see things as they are. We see things as we are."

-Anais Nin

For Peter, Saskia, Johan and Clarice.

I see you as you are.

ACKNOWLEDGEMENTS

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CHAPTER I

INTRODUCTION

Statement of the Problem

The physician patient relationship has an important influence on health outcomes. Previous research has examined the content of physician patient communication, but there has been little empirical research examining the role of affective factors in the physician patient relationship. In particular, there has been little empirical research examining the role of physician transference in physicians' affective interactions and clinical inferences with patients. Although social psychology has developed powerful paradigms for the study of transference from a social cognition perspective, these paradigms to date have not been tested in a field setting. In the present study Andersen's social cognitive paradigm for studying transference was adapted to a medical interview scenario and used in a field setting. The purpose of this study was to examine a social cognitive model of transference and the effects of transference on student physicians' affective interactions and clinical inferences with patients. In addition, student physicians' family of origin and peer relationships were examined for possible developmental influences on transference effects in student physicians' affective interactions and clinical inferences with standardized patients.

Research Questions and Hypotheses

The specific questions this study sought to explore were:

　　1.　Is the affective tone of physician patient interaction influenced by

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This dissertation follows the style of the journal *Families, Systems & Health*.

triggered significant other representations in the physician? More specifically,

   a. Is there a difference in the affective tone of physician patient interactions when a physician's own, rather than a matched participants', significant other representations are activated?

   b. Is there a difference in the affective tone of physician patient interactions when physicians' positive rather than negative significant other representations are activated?

2. Is physician clinical inferences influenced by triggered significant other representations? More specifically,

   a. Is there a difference in clinical inferences when physicians' own rather than a matched participant's significant other representations are activated?

   b. Is there a difference in clinical inferences when physicians' positive rather than negative significant other representations are activated?

3. Do patterns in intergenerational family relationships, as measured by the PAFS-QVC, predict student physicians' affective interactions and clinical inferences with patients? Specifically, does individuation from family of origin predict student physicians' affective interactions and clinical inferences with patients?

Below are some basic hypotheses concerning the expected answers to the above research questions based on a review of the literature.

1. The first hypothesis was related to the omnibus research questions numbers one and two. This hypothesis suggested that transference would have a main effect on affective behavior in physician patient interactions and physicians' clinical inferences.

2. The second hypothesis was related to the specific research questions 1a and 1b. This hypothesis suggested that there would be an interaction between the conditions of primed positive and negative significant other representations and a physician's own versus a matched participant's significant other representations. This interaction was anticipated to influence physicians' affective tone in interactions with standardized patients. That is, primed representations of positive significant others, when they were a physician's own versus that of a matched participant, were hypothesized to exert the strongest effect on affective tone in interactions.

3. The third hypothesis was related to the specific research questions 2a and 2b. This hypothesis anticipated that there would be an interaction between the conditions of primed positive and negative significant other representations, and a physician's own versus a matched participant's significant other representations in terms of influence on physicians' clinical inferences about standardized patients. Primed representations of positive significant others, when they were a physician's own versus that

of a matched participant, were hypothesized to exert the strongest effect on clinical inferences. Also, a physician's *own* positive representation of a significant other would exert a stronger effect than the positive representation of a matched participant's significant other.

4. The final hypothesis was related to research question number three. This hypothesis suggested student physicians' patterns in affective interactions and clinical inferences could be predicted by intergenerational family relationship variables. Specifically, participants who had individuated successfully from their nuclear family and family of origin were expected to exhibit fewer negative transference effects in their clinical inferences and affective interactions with patients. The researcher hypothesized that these participants would exhibit fewer negative transference effects due to an enhanced ability to recognize, integrate, and manage transference induced thoughts and emotions.

<div align="center">Definition of Terms</div>

The terms listed below relate to social cognition theory, the physician patient relationship, and intergenerational family theory. Terms are listed in alphabetical order.

Clinical Inferences. Clinical inferences include the perceptions, inferences, expectancies and decisions that a professional creates about a patient as he/she provides expert health care. These perceptions, inferences, expectancies and decisions are based on clinical, diagnostic and test information filtered through the mind and person of the professional.

Individuation. Individuation is similar to Bowen's (1978) concept of differentiation of self. Bray, Williamson & Malone (1984) describe individuation as a continuum with fusion on one end and differentiation on the other. Individuation is a process "in which a person becomes increasingly differentiated from one's relational contexts" (Bray, Williamson & Malone, 1984, p. 2).

Significant Other. A significant other is "someone who is very important in one's life and on whom one depends, in part, for desired outcomes, especially emotional outcomes" (Andersen & Glassman, 1996; Bowlby, 1969; Greenberg & Mitchell, 1983; Sullivan, 1953).

Significant Other Representations. In memory there are "proper" constructs that represent individuals proper. A proper construct may represent Mom, your mother, rather than "moms" as a group. A significant other representation in memory functions as a "proper" construct (Andersen, Reznik & Manzella, 1996). Mental representations of significant others are chronically available for activation (Andersen et al, 1996). In interpersonal interactions these mental representations of significant others are frequently activated and applied to new individuals who are then interpreted in terms of prior knowledge of and experience with the significant other (Andersen, Reznick & Manzella, 1996) (see transference definition below).

Standardized Patient. (Rosebraugh, Speer, Solomon, Szauter, Ainsworth, Holden, Lieberman & Clyburn, 1997) An actor trained in the accurate and consistent clinical presentation of a medical illness for the purposes of training or evaluating physicians' clinical skills in assessment, diagnosis, treatment or communication.

Transference. Transference consists of affect, inferences, and interpersonal behavior with new people based on the activation and application of mental representations of significant others. Andersen (Andersen & Glassman, 1996) describes transference in social cognitive terms as "going beyond the information given".

Triggered/Primed/Activated Representations. A representation is said to be primed/triggered/activated in memory when cues that have associative links in memory with that representation are presented to and perceived by an individual.

Assumptions

The present study adapts concepts from social psychology, an unusual experimental paradigm, and several measurement instruments to a new context of study: student physicians' affective interactions and clinical inferences with patients. It is assumed here that these concepts, the experimental paradigm, and the measurement instruments will have some objective correlate in the context of a medical interview between a student physician and a standardized patient. However, to the investigator's knowledge, no studies have applied these concepts, this experimental paradigm, or these measurement instruments to this particular context. Therefore this study must assume on the basis of expert judgments and intuitive clinical knowledge that there will be some correlates on each level of new application.

The social psychology concepts applied to the medical interview in this study were: 1) activated representations of significant others as possible predictors of student physicians' affective interaction and clinical inferences with patients; 2) intergenerational family relationships or peer relationships as possible mediators of transference in the

physician patient relationship; 3) physicians' clinical inferences as a form of social cognition.

The experimental paradigm used in the present study was Andersen's experimental paradigm for the study of a social cognitive model of transference. The present study represented the first application of this paradigm in a field setting.

The measurement instruments used in this study were the investigator developed Physician Clinical Inferences Scale (PCIS), the Personal Authority in the Family System Questionnaire – Version C (PAFS-QVC)(Williamson, Bray & Malone, 1982), and Gottman's (Gottman, McCoy, Coan & Collier, 1996) Specific Affect Coding System – 16 (SPAFF-16).

<center>Organization of the Study</center>

The investigator worked collaboratively with the Department of Family and Community Medicine at the Texas A&M University College of Medicine (TAMU-COM) to develop a communication skills module that would: a) provide undergraduate medical students with a rewarding educational experience of direct contact with a standardized patient, and b) allow for the experimental activation of chronically available representations of significant others in memory, so that c) the social cognitive hypothesis that transference is "going beyond the information given" could be examined. In collaboration with the TAMU-COM medical educators, it was agreed that a study of transference effects on student physicians' affective behavior and clinical inferences with patients would be conducted within the context of a communication skills objective structure clinical exam, or OSCE. The feedback from student physicians' performance on the communication skills OSCE would be purely formative in nature, and would not

be included in the student physicians' final grade. In collaboration with the Department of Educational Psychology at Texas A&M University, the investigator arranged for all student physicians to receive an individual de-briefing following the completion of their videotaped medical interview, in which they viewed their videotape with an advanced doctoral student in counseling psychology using interpersonal process recall, and received written feedback from both the doctoral student and the standardized patient regarding their communication skills. In addition to the individual debriefings, all students were debriefed as a class following the last OSCE session in late October 2002.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter presents a brief review of the literature on subjectivity in clinical

medicine, research on the physician patient relationship related to physicians' affective

interactions and clinical inferences with patients, the social cognitive model of

transference, and intergenerational relationship variables that may mediate effects of

social cognitions on physicians' affective interactions and clinical inferences with

patients. There is a rich medical tradition that offers conceptual discussion of the

physician patient relationship (Balint, 1957), and applicable research in psychology on

common factors in therapeutic outcomes (Scovern, 2001; Horvath & Greenberg, 1989;

Horvath & Symmonds, 1991; Prochaska, 2001; Prochaska & DiClemente, 1992).

However, this review primarily will focus on empirical research on social cognitive

models of transference, factors impacting physicians' affective interactions and clinical

inferences with patients, and intergenerational theory concepts as they may mediate

transference in the physician patient relationship.

Subjectivity in Clinical Medicine

Clinical judgment in medicine has been described as both a science and an art

(Epstein, 1999). As an art, physicians' clinical judgments are affected by more than

explicit, verifiable evidence (Goldman, 1990; Feinstein, 1994; Sackett, 1997). As

Epstein (1999) noted, although "evidence-based decision models are very powerful

tools… clinicians do not always use them" (p. 834). In fact, research has suggested that

physician factors including emotion (Greenberg, Eisenthal & Stoeckle, 1984), personal

biases and prejudices (Holtgrave, Lawler & Schwiebert, 1993; Bertakis & Callahan,

1992), level of comfort with risk and ambiguity (Quill & Suchman, 1993) and lack of self awareness (Stern, 1998; Suchman, Markakis, Beckman & Frankel, 1997; Novack, Epstein, & Paulsen, 1999) may lead to problems in diagnosis, assessment and communication with patients. Conversely, affective factors in the physician patient relationship have been demonstrated to improve patient compliance (Schneider, Kaplan, Greenfield, Li & Wilson, 2004), satisfaction (Smith, Lyles, Mettler & Marshall, 1995), health care outcomes (Johnston & Vogele, 1993; Speigel, Bloom, Kraemer & Gottheil, 1989), and reduce the risk of medical malpractice lawsuits.

The Physician Patient Relationship

The physician patient relationship has an important influence on patient health outcomes (Kaplan, Greenfield & Ware, 1989; Olsson, Olsson & Tibblin, 1989; Stewart, 1995; Stewart, Brown, Boon, Galajda, Meredith & Sangster, 1999; Stewart & Roter, 1989), satisfaction (Bertakis, Roter & Putnam, 1991; Roter, 2000; Roter, Hall & Katz, 1988), and physicians' diagnostic inferences (Epstein, 1999; Evans, Stanley, Mestrovic & Rose, 1991). However, most prior research and medical education has focused on "cold" communication factors such as message content and observable behaviors (Baile, Buckman, Lenzi, Glober, Geale, Kudelka, 2000; Haq, Steele, Marchand, Seibert & Brody, 2004; Henderson, Johnson, Barnett & Weaver, 2001; Sloane, Beck, Kowlowitz, Blotzer, Wang, Akins, White-Chu, Mitchell, 2004; Stewart, 1995) with little attention paid to the impact of physicians' affective and personal factors on their ability to communicate with patients (Scovern, 2001)

Scovern (2001) has noted that recent explorations of the healing aspects of the physician patient relationship are similar to concepts in counseling and psychotherapy

subsumed under the category of the therapeutic alliance. Scovern (2001) noted that

recent research from the National Institutes of Mental Health found that the therapeutic

alliance is "equally powerful as a predictor of outcome in medical/pharmacological

treatment" (p. 264). Other investigations of the effects of the physician patient working

relationship on medical outcomes (known in medical research journals as placebo or

contextual effects on medical outcomes) have also found important effects of the quality

of the doctor patient relationship on patient health outcomes (Redelmeir, Molin &

Tibshirani, 1995). Di Blasi, Harkness, Ernst, Georgiou, and Kleijnen (2001) in a review

article in the medical journal *The Lancet* looked for empirical evidence for the

therapeutic effect of the physician patient relationship. After a comprehensive review of

randomized controlled trials of of contextual or "placebo" effects on medical outcomes,

they concluded that a combination of emotional and cognitive care (termed "positive

consultation") produced the most consistent effect on patient outcomes. They noted that

patients who frequently visited emergency departments and received compassionate care

had fewer repeated visits and increased satisfaction than patients receiving standard care.

They concluded that while some of the effects of the physician patient relationship may

interact with specific diseases, there is also an "independent effect of doctor patient

interactions as well" (p. 761).

Interpersonal factors influencing a physician's ability to create an empathic bond

with a patient may have an important effect on the quality of the physician patient

working relationship. Smith, Lyles, Mettler and Marshall (1995) trained residents in a

month long experiential program designed to develop physician empathy and then

compared patients' confidence in the trained doctors against patients' confidence in

doctors who had not taken part in the program. Patients of empathically trained doctors rated themselves as more confident in their doctor and expressed higher levels of satisfaction with treatment. Goldberg (1979) found that family physicians' ability to detect emotional problems accurately depended on the physician's ability to perform several key behaviors at the outset of the interview and several key behaviors during the interview. At the outset of the interview empathically accurate doctors gave eye contact, clarified the presenting complaint, used directive questions for physical complaints, and began with open questions. During the interview high performing physicians had a high frequency of empathic comments, were sensitive to both verbal and nonverbal cues, did not read notes while taking the history, managed over-talkativeness skillfully, and asked fewer questions about the patient's past history.

Research supports the observation that physician communication skills such as reflecting, paraphrasing, summarizing and questioning are connected to the quality of the physician patient working relationship and patient health outcomes. Stewart (1995) reviewed 21 studies of physician patient communication in which patient health was the outcome variable. Stewart found that the quality of communication in the history taking segment of the visit, and during the discussion of the management plan was found to influence patient health outcomes including emotional health, symptom resolution, physiologic measures and pain control.

Despite the increasing emphasis on communication skills in the medical licensure process, research on the physician patient working relationship, and many communication skills curricula in undergraduate medical education, tend to minimize the interpersonal processes between and subjectivity within the patient and physician in favor

of focusing on protocols for different types of health care interviews which emphasize message content and observable behaviors (Baile, Buckman, Lenzi, Glober, Geale, Kudelka, 2000; Haq, Steele, Marchand, Seibert & Brody, 2004; Sloane, Beck, Kowlowitz, Blotzer, Wang, Akins, White-Chu, Mitchell, 2004; Stewart, 1995). Several authors have suggested complementing the current focus on observable behavior and message content in the communication literature by teaching mindfulness, emphasizing the personal development of the physician, (Zoppi & Epstein, 2002), and by considering psychological models for the physician patient relationship (Pierloot, 1983).

Despite the demonstrated value of a healthy physician patient working relationship, skillful physician patient communication, and the role of physician subjective and interpersonal factors in health care, there have been few experimental studies that illuminate empirically the mechanisms by which physician factors such as emotion and emotion's interpersonal cousin, transference (Andersen & Baum, 1994; Andersen & Cole, 1990; Andersen & Glassman, 1996; Andersen, Reznick & Chen, 1997; Andersen, Reznick & Manzella, 1996; Baum & Andersen, 1999) influence physicians' affective interactions with patients or clinical inferences about patients. A deeper understanding of the mechanisms and impacts of transference in the physician patient relationship is clearly needed.

<center>Psychodynamic Perspectives on Transference</center>

Freud understood transference in terms of dynamic psychosexual conflicts occurring beneath the level of the conscious mind (Freud, 1912/1958). Interpersonal theorist and psychiatrist Harry Stack Sullivan conceived of transference in interpersonal terms, referring to it as a "parataxic distortion" (Sullivan, 1953). Sullivan understood

transference as stemming from adaptive developmental processes gone awry, in which a) individuals develop in childhood "personifications" of significant others; b) later in life individuals experience a new person as one experienced a significant other in childhood; and then c) individuals re-enact interpersonal patterns, or "dynamisms" learned with the significant other with the new person. Horney (1939) developed an early psychoanalytic understanding of the importance of significant others in the development of self definitions and patterns of interpersonal life. Contemporary psychodynamic psychotherapy researchers often draw from the object relations school of psychodynamic thought to define transference as a re-enactment of old internal object relationships and their associated affects (Luborsky, Crits-Christoph, Alexander, Margolis & Cohen, 1983; Strupp & Binder, 1984). Strupp and Binder's (1984, p. 35) contemporary psychodynamic conceptualization of transference is as follows:

> …internal object relationships are composed of self-images, images of others, and a set of transactions that takes place between them. Associated with these transactions are a variety of feelings, wishes, thoughts, and expectancies that characterize the object relationship. It is assumed that an experience becomes meaningful when it is associated with strong affects, either pleasant or unpleasant. Consequently, an enduring internal object relationship will have a strong affective component, which lends it psychological meaning and contributes the motive force for its continued reenactment…There is then, an isomorphic relationship between internal object relationships and the characteristic form taken by current conflictual interpersonal relationships. Furthermore, the patient will unconsciously seek to draw from the therapist behaviors that reenact the role

assigned to the object in the patient's enduring scenario. Our definition of transference in the therapeutic relationship emphasizes the importance of identifying repetitive core conflictual themes in present relationships that can be traced back to early developmental experiences with significant others and using these themes in the therapeutic relationship to increase awareness of maladaptive interpersonal patterns as well as to create corrective emotional experiences within the holding context of therapy.

<div align="center">Social Cognition Perspectives on Transference</div>

In social cognitive theory, transference is a process basic to interpersonal interaction, based on activated representations of significant others. A significant other is someone who is very important in one's life and on whom one depends, in part, for satisfaction of needs and wishes, especially emotional needs (Andersen & Glassman, 1996; Bowlby, 1969; Greenberg & Mitchell, 1983; Sullivan, 1953) In this study, transference in social perception and social behavior was defined in social cognitive terms. That is, transference consists of affect, inferences and interpersonal behavior with new people based on the activation and application of mental representations of significant others. The social cognitive model of transference borrows concepts from psychodynamic theory, but defines those concepts in terms developed in experimental social psychology and cognitive psychology. Although psychodynamic perspectives on transference will be briefly touched on here for background purposes, the major focus of the present review of transference research will be on experimental studies exploring a social cognitive model of transference.

Results from empirical research in social psychology emphasize how significant others are knit into memory, inference, perception, self-definitions, affective responses, and behavior in interpersonal interactions (Andersen & Glassman, 1996). Some researchers in social psychology have conceptualized transference in terms of social cognition and representations of important others in memory (Andersen, Reznik & Chen, 1997). Researchers in social cognition emphasize the intimate link between thought and social relationships, going so far to state that "thinking is for relating" (Reis & Downey, 1999) and that cognitive structures oriented towards social relationships are important evolutionary adaptations. Social cognition researchers conceptualize transference as mental linkages between self and significant other representations in memory. In social cognition research, social constructs designate a category of person (Sedikiedes & Skowronski, 1991) representing multiple people who are used as standards against which new people can be evaluated.

Beyond social constructs, social cognition researchers in psychology hypothesize that there are also "proper" constructs that represent specific individuals. A proper construct may represent Mom, your mother, rather than "moms" as a group. A significant other representation in memory functions as a "proper" construct (Andersen, Reznik & Manzella, 1996). Mental representations of significant others are always available for activation (Andersen & Glassman, 1996). In interpersonal interactions these mental representations of significant others are frequently activated and applied to new individuals who are then interpreted in terms of prior knowledge of and experience with the significant other (Andersen, Reznick & Manzella, 1996). Social cognition research has found that a new person is often remembered as having characteristics of a significant

other and is evaluated accordingly (Baum & Andersen, 1994). When significant other representations are activated people tend to remember information about a new person that goes beyond the information given about the new person (Andersen & Cole, 1990). Research shows that going beyond the information given about a new person often includes applying an overall evaluative tone of a significant other representation to a new person (Andersen & Baum, 1999). Also, consistent with memory research on spreading activation systems in memory, affective information that is linked to a representation of a significant other can be applied to a new person (Fiske, 1982). This phenomenon has been demonstrated in the course of research on the theory of schema-triggered affect (Fiske & Pavelchak, 1986; Pavelchack, 1989).

Andersen, Reznik and Manzella (1996) have demonstrated strong support for schema triggered affect in transference as well as parallel effects on motivation to be close to another, and expectancies for acceptance/rejection by another person. In addition, Andersen, Reznik and Chen (1997) have found that the self and significant others are closely related in memory, exerting a bi-directional influence on each other. Different aspects of the self may emerge as a function of context (Deaux, 1992) or relationship (Baldwin & Meunier, 1999). This emergence of different aspects of the self in different contexts reflects the notion that there is only part of one's total self-knowledge accessible and active at any one time. Different subsets of one's total self may be activated by different contexts and relationships. Some subsets (such as one's experience of oneself interacting with a significant other) may be more chronically activated than others. In transference, aspects of the self that are connected to a particular relationship with a significant other emerge, "influencing perceptions, inferences, affect,

and experience of self" (Andersen, Reznik & Chen, 1997, p. 237) with a new person. In addition, activated representations of self and significant others may lead to activation of expected patterns of interaction, or relational schemas (Bugental, 1992, Berscheid, 1994; Baum & Andersen, 1999). Typical patterns of interaction in turn invite typical responses from others that provide behavioral confirmation for the activated significant other representation and its associated affect. Baum and Andersen (1999) demonstrated that when research participants' significant other representations are activated, the affective tone of participants' interactions with a naïve target is modified, resulting in changes in targets' affective behavior with the participants. That is, people tend to recreate the affective tone of their activated significant other representation in an interaction with an entirely new person, creating the opportunity for others to behave in ways consistent with their activated significant other representations. Affect based on triggered representations of a significant other, in essence, may trigger the unfolding of behaviors typical of interpersonal patterns learned with that significant other, thus eliciting confirming behaviors from a new person, and resulting in the experiencing of a new relationship in terms of a prior relationship with a significant other.

Intergenerational Family Theory and Transference

The focus of the present research is the effect of social cognitive information about patients that is presented to physicians. Of particular interest is the impact of this social cognitive patient information on physicians' affective interactions and clinical inferences with patients. In social cognitive research, the examination of the linear relationship between social cognitions and aspects of interpersonal interactions is considered to be the empirical study of transference in every day life. When social cognitive theory is linked with intergenerational family theory, the implication of both bodies of research taken together is that working models of relationship derived from the family of origin may impact physicians' interactions with their patients (Moretti & Higgins, 1999). Research from the field of counseling psychology has established the importance of the therapist's family of origin to the psychotherapist-client working alliance (Hillard, Henry & Strupp, 2000; Lawson & Brossart, 2003). Recognizing that social cognitive information has the potential for skewing affective interactions and thoughts about others (i.e. transference effects in every day life) it is possible then that physicians' affective interactions and clinical inferences with patients may be mediated by interpersonal schema of relationships developed in the physician's family of origin, as well as the physician's developmental level of differentiation from his or her relationships with significant others.

Intergenerational family theory emphasizes the importance of the family of origin and its influence on other intimacy demanding situations both in and beyond the family (Williamson, 1981, 1991). Bowen held that the family of origin continues its influence with or without family contact, into one's current relationships (Harvey & Bray, 1991;

Harvey, Curry, & Bray, 1991; Kerr & Bowen, 1988). This perspective is predicated on

Bowen's (1978) theory of differentiation of the self. Differentiation refers to "the ability

to function in an autonomous fashion in significant relationships without being controlled

or experiencing an inordinate amount of responsibility for intimate others" (Lawson &

Brossart, 2001, p. 430). Bowen held that one's level of differentiation is transmitted

across generations by interactional processes between family members, especially

between parents and children. Through the differentiation process, a person becomes

increasingly autonomous (i.e., self-determined and less automatically governed by

relationships) from one's emotional relational contexts (Bowen, 1978; Kerr & Bowen,

1988), the major ones being the family of origin, nuclear family, and later occupational

and peer relationships.

Bowen's (1978) theory of differentiation of the self suggests that differentiation is

transmitted between generations by interactional processes within the family of origin.

Van Walsum, Lawson & Bramson (2004) have provided evidence for the effect of

physicians' intergenerational family relationships on patients' perceptions of the

physician-patient working alliance. Lawson and Brossart (2001) described differentiation

as directly related to psychological health and "healthy intimate relationships within and

outside of the family of origin" (p. 429). Lawson and Brossart (2001) further described

individuation as "the ability to function in an autonomous fashion in significant

relationships without being controlled or experiencing an inordinate amount of

responsibility for intimate others" (p. 430). As Bray, Williamson and Malone (1984)

have stated, "individuation…is on a continuum with fusion at the opposite pole.

Individuation is a process in which a person becomes increasingly differentiated from

one's relational contexts (Bowen, 1978), the major contexts being one's family of origin and nuclear family." (p. 2)

Williamson (1991) further developed Bowen's concept of differentiation in positing the concept of Personal Authority in the Family System (PAFS). While there are similarities between the concepts of PAFS and differentiation such as an emphasis on individuality and the influence of the family of origin, PAFS represents a higher order of differentiation that emphasizes the need to balance the inherent tension between individuation (or differentiation) and intimacy within the family of origin. Unlike Bowen, Williamson gives equal importance to both autonomy (individuation) and intimacy. An emphasis of one over the other is considered incomplete development. Thus, differentiation and PAFS are not synonymous concepts. Psychological health is directly proportional to the degree that individuation and intimacy are in balance in relationships (PAFS). Of particular relevance to the present study, individuation with intimacy (PAFS) affects not only family relationships but also significant relationships beyond the family, including one's professional identity and work setting (Bowen, 1978; Williamson, 1991).

Personal Authority in the Family System (PAFS) is an intergenerational family construct that emphasizes the importance of resolving the dynamic tension between individuation and intimacy with one's parents (Bray & Williamson, 1987; Bowen, 1978). Individuation is distinct from emotional distance from the family of origin, as it includes the concept of closeness, affection and mutuality with family members (i.e., intimacy) while simultaneously remaining autonomous (Harvey et al., 1991). Achieving PAFS assumes the ability to relate to all other humans, including parents, as equals and peers (Williamson, 1981). In addition to individuation and intimacy, constructs related to PAFS

include intimidation, fusion, and triangulation as related to parents, spouses/partner, and peers. Increasing levels of these latter constructs indicate increasingly lower levels of PAFS.

Fusion is the opposite of individuation and is depicted by reduced autonomy in relationships, increased emotional reactivity in interactions, and reduced self-responsibility, and indicates unresolved emotional attachments with the family of origin (Williamson, 1991). A major obstacle in achieving PAFS involves terminating the intergenerational hierarchical boundary between adults and their parents. Intergenerational intimidation maintains the power differential between the younger adult and parents, and is rooted in the younger adults' childhood dependency on the parents for physical and psychological needs (Williamson, 1991). Renegotiating the hierarchical boundary enables the adult to relate to other individuals, including parents, as peers. Intergenerational intimidation and fusion are expressed behaviorally through the process of triangulation, in which two people (e.g., parents) involve a third party, often a child, as an attempt to resolve tension and fusion in the original dyad. Triangulation is typically stressful for at least one of the three participants and indicates a lack of individuation in the nuclear family (Harvey, Curry, & Bray, 1991). An inability to resolve triangulation increases the level of difficulty functioning in intimacy-demanding relationships in the present (Williamson, 1991).

Research related to PAFS has found that intergenerational family processes greatly influence family members' health and physical stress symptoms (Bray, Harvey, & Williamson, 1987), psychological distress (Harvey, Curry, & Bray, 1991), healthy-related behaviors (Harvey & Bray, 1991), ego identity, autonomy, self-esteem, and mastery

(Andersen & Fleming, 1986a; 1986b), codependency (Prest, Benson, & Protinsky, 1998) and peer relationships (Bray & Harvey, 1992), as well as clinician-patient relationships (Lawson & Brossart, 2003). Finally, based on intergenerational family theory, the degree to which one achieves PAFS is reflected in other relationships, including intimacy-demanding relationships between physician and patient (Williamson, 1991). Therefore PAFS may serve as a mediating influence when aspects of a patient's presentation or behavior trigger chronically available representations of significant others such as members of a physician's family of origin (Andersen & Berk, 1998a; Andersen & Berk, 1998b; Andersen & Cole, 1990; Andersen & Glassman, 1996; Andersen, Glassman & Gold, 1998; Greenberg & Mitchell, 1983; Hinkley & Andersen, 1996; Moretti & Higgins, 1999; Sedikides & Skowronski, 1991

Thus, physicians' current interpersonal responses may be based on patterns of interaction from significant family of origin relationships that are triggered by activation of representations of significant others in memory. Research in social cognition suggests that triggered representations and their associated transference-based perceptions may elicit specific affective responses (Andersen & Baum, 1994; Baum & Andersen, 1999; Bugental, 1992; Fiske, 1982; Fiske & Pavelchak, 1986; Frankel, 1995), expectancies (Andersen, Reznik & Manzella, 1996; Andersen & Ross, 1984; Baldwin & Meunier, 1999; Glassman & Andersen, 1999a, 1999b; Oettingen, 2000) and interpersonal patterns (Andersen, Reznik, & Chen, 1997; Dijksterhuis & Bargh, 2001; Berscheid, 1994; Dryer & Horowitz, 1997; Reis & Downey, 1999; Snyder, Tanke & Berscheid, 1977; Sullivan, 1953) in the physician that result in the experiencing of a new person, (in this case the patient) in terms of the family of origin experience. In the medical context, patients

whose clinical presentations push physicians to the limits of their professional competence, or who trigger affective vulnerabilities in the physician, may find their physicians responding to and thinking about them in ways that affect the affective communication between physician and patient and in turn the clinical decisions made about patients' medical care (Epstein, 1999; Novack, Dube & Goldstein, 1992).

However, this researcher suggests that in physicians the activation of significant other representations in memory does not of necessity lead to reactive patterns of affective interaction and clinical inferences unrelated to the present patient and the clinical data presented. Rather, the present study seeks to explore whether, in addition to an experimental study of social cognition, physician developmental influences such as PAFS may mediate the negative transference effects on physicians' affective interactions and clinical inferences with patients. Research on intergenerational family theory suggests that reactive patterns of transference based on unconscious social cognitive processes may have less impact, or in the ideal case may be transformed into a more skillful response, if a physician is at a level of development with regards to his or her family of origin and/or other intimate relationships in which he or she has achieved intimacy with differentiation (PAFS). If transference in everyday life is "going beyond the information given", by reacting to a new person on the basis of triggered representations of past significant others, then intimacy with differentiation in intergenerational family relationships and peer relationships may represent a path to freedom from transference influences on affective and social cognition. If intimacy with differentiation represents a greater autonomy from the powerful influences of peers and significant others in the family of origin, then it is possible that certain patterns in

intergenerational family relationships, specifically PAFS, may also mediate the effects of transference in student physicians affective interactions and clinical inferences with new individuals.

CHAPTER III

METHODOLOGY

This chapter outlines the methodology of the present study including Andersen's

(Andersen & Baum, 1994; Andersen & Cole, 1990; Andersen & Glassman, 1996;

Andersen, Reznick & Manzella, 1996; Baum & Andersen, 1999) experimental paradigm

for the social cognitive study of transference, the modifications to this experimental

design in the present study, a description of study participants, the measures that

operationally define variables of interest, and the analyses used.

Purpose

The purpose of the present study was to apply Andersen's (Andersen & Baum,

1994; Andersen & Cole, 1990; Andersen & Glassman, 1996; Andersen, Reznick &

Manzella, 1996; Baum & Andersen, 1999) social cognitive paradigm to the problem of

understanding transference effects on student physicians' affective interactions and

clinical inferences with patients. Intergenerational family relationship variables, as

measured by the PAFS-QVC, were examined in order to understand how they might

mediate experimentally manipulated transference effects on student physicians' affective

behavior and clinical inferences with patients.

Andersen's Social Cognitive Paradigm for the Experimental Study of Transference

This study represented the first field application of Andersen's experimental

paradigm for the study of transference. Andersen's paradigm for the social cognitive

study of transference and behavioral confirmation of primed expectancies is rigorous and

widely accepted in the experimental social psychological literature (Andersen & Baum,

1994; Andersen & Cole, 1990; Andersen & Glassman, 1996; Andersen, Reznick & Chen,

1997; Andersen, Reznick & Manzella, 1996; Bem & Andersen, 1999). With some variation consistent with the dependent variable being studied, Andersen's experimental paradigm for the social cognitive study of transference proceeds as follows:

1. Pretest Gathering of Descriptors of Significant Others. In the pretest student physicians named both positively and negatively toned significant others and give descriptor sentences of each. Each participant is then randomly yoked on a one-to-one basis with another participant. The descriptors from either a participant's own generated list or the list of a yoked participant became one of the experimental ways in the nomothetic portion of the experiment. This experimental way was titled "Source" of priming information, the levels of the way were a participant's own descriptor sentences or the sentences of a yoked participant.

2. Priming of Significant Other Representations. Several weeks after gathering the significant other descriptors from all participants, the experiment takes place. Prior to the experimental task participants are given information about a person they are told they will soon meet. The information given to participants is manipulated via two conditions: a) information is drawn from either a positive or negative set of descriptors of a significant other, and b) descriptors are either from a participants' own set of descriptors or a yoked participant's set of descriptors.

3. Experimental Task. Experimental tasks vary in Andersen's paradigm depending on the focus of the dependent variable. In Andersen's studies participants have interacted with a confederate over the telephone, have been filmed for facial affect while reading about target person they have been told they were about to

meet, participants have completed anagrams after having representations

triggered, and participants have imagined interacting with a target.

4. Measurement of Dependent Variables. Dependent variables that have been used

    by Andersen and her colleagues in this paradigm include: facial affect, memory

    confidence for descriptors, performance on an anagram task, liking for a target,

    and targets' affective behavior with the participant after the participants' positive

    expectations have been primed.

<div align="center">Experimental Design of the Present Study</div>

The present study used a 2 x 2 between-subjects experimental design based on

Andersen's social cognitive paradigm for the experimental study of transference

described above. The main intervention in the study involved manipulating the

information given to student physicians prior to a medical interview with a standardized

patient. Participants were randomly assigned to experimental conditions. Experimental

conditions were based on: 1) valence of information given (positive vs. negative), and 2)

source of information given (own information vs. other information from a matched

participant). All participants were randomly matched with another participant so that if a

participant was in an experimental condition in which the information source was drawn

from "other" the matched participant's information would be used instead of that

participant's own information. Ways and levels for the experimental conditions in the

present study are included in Table 1.

Table 1

Experimental Conditions *

Information Source / Emotional Valence	Participants' Own Significant Other Descriptive Statements	Yoked Participant's Significant Other Descriptive Statements
Positive Significant Other Descriptive Statements	Cell One: Positive/Own	Cell Three: Positive/Yoked
Negative Significant Other Descriptive Statements	Cell Two: Negative/Own	Cell Four: Negative/Yoked

*Experimental design based on Andersen's social cognitive paradigm for the study of transference.

Dependent variables measured in this study were student physicians' affective behavior in a medical interview with a female standardized patient (Tamblyn, 1998), and student physicians' clinical inferences about their standardized patient. Data collected was both observational and self-report in nature. Data consisted of trained observers' ratings of student physicians' affective behavior in interactions using the Specific Affect Coding System –16 code version (SPAFF-16) (Gottman, McCoy, Coan & Collier, 1996), and student physicians' self-reports of clinical inferences on the investigator-developed Physician Clinical Inferences Scale (PCIS).

Covariates included in the study were: intergenerational family relationship and peer relationship variables, as measured by the subscales of the Personal Authority in the Family System Questionnaire – Version C (PAFS-QVC) (Williamson, Bray & Malone, 1982). Research on expertise in other professional fields has suggested that clinicians who have healthy individuation from significant others (Lawson & Brossart, 2001) may be more able to form a collaborative alliance and may be less impacted by client variables such as severity of clinical presentation. Therefore PAFS-QVC variables were examined in order to understand how they might mediate experimentally manipulated patient information designed to activate student physicians' significant other representations in memory, and consequently transference effects that would become apparent in student physicians' affective interactions and clinical inferences with patients. Covariates were only included in the MANOVA and hierarchical regression analyses if they demonstrated some statistical relationship to the dependent variables of interest. Selection of covariates will be further discussed in the section on data assumptions.

Data was also gathered on possible covariates such as gender, physician verbosity, and number of physician talk turns during a 5-minute segment of the medical interviews observed in the study.

<div align="center">Instrumentation</div>

<u>Physician Clinical Inferences Scale (PCIS)</u>

The PCIS is an instrument developed by the principal investigator specifically for the purposes of the present study. The data for the instrument development was the same sample of student physicians used in the experimental study. The purpose of developing the PCIS was to measure aspects of a student physician's clinical inferences about a recently interviewed patient. The PCIS is a paper-and-pencil self-report measure designed to be completed by a physician immediately following a medical interview. Items in the PCIS are likert scaled. Items were included in the PCIS that are intended to measure student physicians' thinking about their patient's motivation, their patient's accuracy as a reporter, their patient's stage of change, the likelihood of their patient complying with treatment, and prognosis/likelihood of their patient having a favorable health outcome.

The Physician Clinical Inferences Scale data was entered into SPSS 10.0 and then subjected to an exploratory factor analysis with a varimax rotation to maximize the orthogonality of factors found. An orthogonal rotation was chosen because the experimenter suspected that relational and instrumental aspects of clinical inferences might be relatively independent of each other in student physicians at the undergraduate level of training. An examination of the scree plot from this factor analysis suggested two factors: Potential for Treatment Success and Patient as Partner. The scree plot for the factor analysis of the Physician Clinical Inferences Scale is included as Figure 1 below. Items that loaded highly on either the Potential for Treatment Success factor or the Patient as Partner factor were retained as items in the final version of the scale. The cutoff value for including items was .5. This value was chosen because Tabachnick and Fidell (1989) have stated that although items with loadings of .3 and above are generally interpreted, loadings above .45 (20% overlapping variance) are fair measures of a factor and loadings above .55 (30% overlapping variance) are good measures of a factor (p.640). Items for the PCIS and results from the factor analysis used in the development of its two subscales are included in Tables 2 and 3 below.

Table 2

Exploratory Factor Analysis Results for Physician Clinical Inferences Scale

Item	Mean	Standard Deviation	Factor Loading (Cut off ≈ .5) * item retained for use in this scale	Qualitative Descriptions: *Scale 1 = Treatment Success* *Scale 2 = Patient as Partner* *NA = item not used in calculating scale score*
This patient is able to report the signs and symptoms of her illness accurately	6.97	10.39	-.313 (1); .482 (2)	2: Patient accuracy as a reporter
This patient is motivated to tell me the whole truth about her health	8.23	7.48	.144(1); .065(2)	NA: Patient reliability as a reporter
This patient is very motivated to engage in treatment	7.38	1.56	.422(1); .672(2)*	2: Patient motivation for treatment
This patient is likely to comply with my treatment recommendations	8.17	1.29	.586(1)*; .414 (2)	1: Patient compliance with treatment
This patient is able to understand the information I have just given her	7.88	1.34	.08(1); .766(2)*	2: Patient ability to comprehend treatment instructions
This patient will be easy to care for	7.11	1.58	.630(1)*; .262(2)	1: Ease of patient care
The prognosis for this patient is hopeful	7.14	1.75	.822(1)*; -.05(2)	1: Hope
If I were to provide follow up care for this patient, I would enjoy working with her	9.02	1.17	.645(1)*; -.132(2)	1: Physician-patient compatibility
This patient is at the following stage of change: (anchored scale 1= precontemplation to 5= action & maintenance)	1.88	.734	.276(1); .541(2)*	2: Patient readiness for change
I would refer this patient to another physician rather than assume responsibility for her care	3.92	3.12	-.131(1); .075(2)	NA: Patient dumping

Extraction Method: Principal Components Analysis;
Rotation Method: Varimax with Kaiser Normalization;
Rotation converged in 10 iterations

Figure 1

Scree Plot for Factor Analysis of the Physician Clinical Inferences Scale
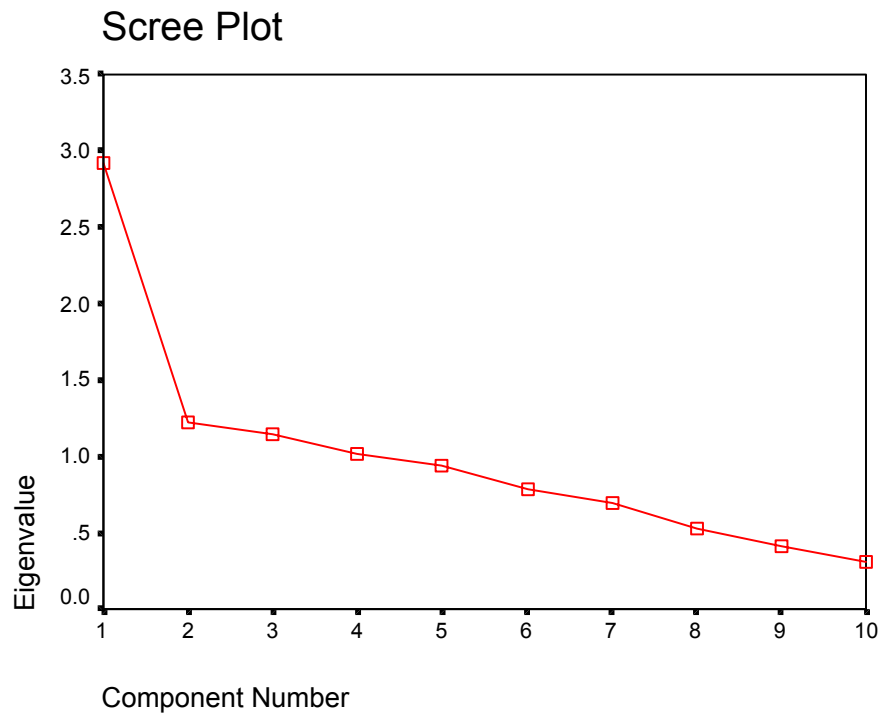
Table 3

Eigenvalues for Factors in EFA of the Physician Clinical Inferences Scale
Total Variance Explained

Comp-onent	Initial Eigen-values Total	% of Var	Cum %	Extraction SOS Ldings Total	% of Var	Cum %	Rotation SOS Ldings Total	% of Var	Cum %
1	2.92	29.27	29.27	2.92	29.27	29.27	2.22	22.27	22.27
2	1.22	12.26	41.53	1.22	12.26	41.53	1.83	18.33	40.60
3	1.14	11.40	52.94	1.14	11.40	52.94	1.17	11.78	52.39
4	1.02	10.22	63.17	1.02	10.22	63.17	1.07	10.77	63.17
5	.93	9.34	72.52						
6	.79	7.90	80.42						
7	.69	6.93	87.35						
8	.53	5.33	92.69						
9	.41	4.17	96.86						
10	.31	3.13	100.00						

ethod: Principal Component Analysis.

Personal Authority in the Family System Questionnaire - Version C (PAFS-QVC)

(Williamson, Bray & Malone, 1982)

Prior to participating in the experiment all participants completed the 84-item

Personal Authority in the Family System Questionnaire-Version C (PAFS-QVC;

Williamson, Bray & Malone, 1982; Bray & Harvey, 1992). The Personal Authority in

the Family System Questionnaire – Version C is based on a developmental understanding

of separation and individuation of adults from their family of origin. The PAFS provides

self report ratings of present relationships with other members in the family of origin.

The PAFS-QVC was used to measure specific behaviors and interactions within the two-

generational family system (i.e., parents and intimate peers). The PAFS-QVC is based on

an earlier version of the PAFS that was developed to measure patterns of interaction in

the three-generational family system (i.e., parents, spouses, and children)(Bray & Harvey,

1992; Bray, Williamson, & Malone, 1984; Williamson, Bray & Malone, 1982). The

seven non-overlapping scales of the PAFS-QVC can be grouped into two categories. Five

scales evaluate interactional dynamics with parents, and include: Intergenerational

Intimacy e.g., "I share my true feelings with my parents about the significant events in

my life."); Intergenerational Fusion/Individuation e.g., "I am usually able to disagree

with my parents without losing my temper."); Intergenerational Intimidation (e.g., "To

meet my mother's expectations concerning my school/work, I feel I must modify my

behavior."); Intergenerational triangulation (e.g., "How often do you feel compelled to

take sides when your parents disagree?"); and Personal Authority (e.g., "How

comfortable are you talking to your mother and father about family secrets?"). Two

scales evaluate interactional dynamics with intimate peers, and include: Peer Intimacy

(e.g., "My significant other and I have many interests which we choose to share.") and Peer Fusion/Individuation(e.g. "I am usually able to disagree with my significant other without losing my temper."). For all seven scales, larger scores indicate healthier relationships (e.g., more intimacy, less intimidation, less triangulation, more personal authority, etc.).

Specific Affect Coding System–16 Code Version (SPAFF) (Gottman, McCoy, Coan & Collier, 1996)

The Specific Affect Coding System (SPAFF-16) was developed by Gottman (Gottman, McCoy, Coan & Collier, 1996) for the observational rating of affective interactions in married couples. The 16 code version of this coding system was slightly modified for the new context of the present study. Modifications to the definitions of each of the 16 SPAFF affect codes are detailed in Appendix D. These modifications were deemed necessary and reasonable to make the system applicable to physician-patient interactions because of the professional nature of the interpersonal interaction, which may modulate the way emotions are expressed according to social mores for professional-patient communications. For example, the affect category of "contempt" in Gottman's SPAFF-16 system was defined in behavioral terms developed for married couples discussing a problem on which each member of the couple held a different perspective. The behavioral terms for the expression of contempt in this situation are: verbal sarcasm, eye roll, hostile humor, mockery, insults, uni- or bilateral 14s (movements of facial muscles). It is likely that individuals with the emotional intelligence to gain entry to medical training have the ability to suppress such obvious professionally unacceptable behavior as eye rolls, verbal sarcasm, and mockery in a

medical interview. Ekman, Friesen, and M. O'Sullivan (1988) have documented that there can be expressions of positive affect that are non-congruent with the communicator's subjective experience, and that although superficially similar to genuine or congruent expressions of positive affect, the incongruent expressions of positive affect can be detected through more subtle examinations of the facial musculature. The SPAFF was developed in a spirit of observational science, with codes developed on the basis of consistent variations in observations of affective behavior. All modifications made to SPAFF codes in this study were made in this same spirit, on the basis of observations of an absence of aspects of affective behaviors described in Gottman's SPAFF codes, with the simultaneous observation of the presence of other behaviors that appeared to be aspects of the same affect, modified for a professional context and the associated role expectations. Therefore, in the context of this study, it was assumed that student physicians may have either a) experienced affect incongruent with their desire to present as a competent professional, leading to denial or suppression, or b) experienced affect incongruent with their desire to present as a competent professional, leading to modified expression. In either case, more subtle cues indicating suppression or modified expression of affect were deemed to be necessary, as consistent with previous research on smiles while lying (Ekman, Friesen & O'Sullivan, 1988), and unpublished research by John Gottman on unhappy couples attempting to smile and interact in a positive manner (Goleman, 2004, p. 383)

Modifications were also made to the way in which presence of an affect was calculated in the SPAFF-16. Whereas Gottman, McCoy, Coan & Collier (1996) used

thought units for the coding unit in the SPAFF, the present investigator chose to use talk turns. These modifications are further explained below:

Gottman et al. apply only one code per thought unit, using precedence rules to make discrete and mutually exclusive decisions between the multiple layers of affect in each thought unit. The investigator in the present study found it more useful to allow for the multiple layers of affect that exist within the larger information chunk of each talk turn. Talk turns are processed as chunks of information, with the affect in the thought units of the talk turn having varying weights. Therefore, knowing that the information in thought units may be more likely processed in terms of talk turns, and that the multiple layers of affective information are not obliterated by a single strong code of one thought unit in a talk turn, nor are thought units necessarily the way in which participants in a conversation process information, the present investigator chose to revise the SPAFF system for calculating affect to better reflect how the present investigator believed people processed affective information taken in through the turn-taking rythmn of conversation. Affect codes were calculated in terms of their proportion of occurrence in a talk turn. The weighted codes were then added together for their total occurrence in the conversation. Coding and calculation of total presence of each affect per interview segment rated proceeded as follows:

- Presence of affect code per talk turn (e.g. caring 2/4 affects coded = .5(caring) + .5(other codes).

- Total expression of each code (add each weighted code over entire 10 minute sample segment of interview).

- Total expression of all positive codes = positive affect index for interview.

- Total expression of all negative codes = negative affect index for interview.

- Total expression of all neutral codes = neutral affect index for interview.

- Physician Verbosity =number of words physician used in the first five minutes of the interview.

Ratings of student physician affect, as defined by the affect codes of the modified SPAFF-16 code observational coding system, were completed by the primary investigator, who was blind to experimental condition and to the ratings of two independent raters until the data analysis stage of the study. To evaluate the reliability and validity of the independent investigator's SPAFF-16 ratings, two independent raters trained in the SPAFF-16 rated a total of 9 randomly selected videotapes. Both independent raters were blind to experimental condition and to the primary investigator's previously completed ratings. Affect ratings by all raters were collapsed from 16 affect codes down into three affect categories per physician talk turn: positive, negative, and neutral. Comparisons between three observers' ratings were used as a validity check and to obtain data on inter-rater agreement.

<div align="center">Procedures</div>

This study was conducted as an exempt, pre-existing data study as approved by the Texas A&M Institutional Review Board. IRB approval documents are included in Appendix A. Several weeks prior to the experiment, the researcher obtained informed consent from participants in the study. A copy of the informed consent document is included in Appendix A. No participants refused participation in the study. After obtaining informed consent, the researcher collected the following information from all participants who agreed to participate in the study:

- The Personal Authority in the Family System Questionnaire (PAFS) (Williamson, Bray & Malone, 1982)

- 16 sentences each describing two important significant others. The document for collecting these sentences is included in Appendix E. First, participants named a positively toned significant other: "someone important in your life with whom you are close and with whom you would like to be closer (perhaps a parent, relative, teacher or friend)". The participant then completed 8 non-synonymous sentences to describe him or her with predicates of no more than four words each (Glassman & Andersen, 1999a, 1999b). The participants then rank ordered the descriptive sentences in terms of importance in characterizing the person, giving a 1 to the most descriptive and an 8 to the least descriptive. The participants then repeated this procedure except with a negatively toned significant other: "someone important in you life with whom you are not close and whom you would like to avoid as much as possible (perhaps a parent, relative, teacher or former friend)". These sentences were used later in the study to create the patient descriptions that will be included in mock patient charts given to doctors prior to their interviews with standardized patients. A sample of significant other statements generated by participants is included in Appendix F.

The 16 sentences provided by the participants describing the two significant others (one with a positive affective tone and one with a negative affective tone) constituted the core stimulus materials used in the experimental conditions.

Each participant was randomly assigned to a condition in a 2 X 2 between subjects experiment: positive or negative significant other X own or yoked participant's

significant other. Each of the four conditions was designed to have 17 or 18 students therein.

Each participant in each of the four conditions was assigned to come to the Texas A&M University Counseling and Assessment Clinic in Bryan (CAC-Bryan) on one of four dates between mid-September and mid-October, 2002. Each experimental group of participants was further subdivided into four subgroups of four or five. Each subgroup was required to come to the CAC-Bryan at a specific hour on their assigned date. Four or five participants at a time thus completed their standardized patient (SP) interviews. The date and time assignments of the medical interviews between the student physicians and standardized patients were counterbalanced by experimental group. In this manner, all experimental conditions occurred equally on different dates and at different times. One hour was allocated to complete 1) a 5-minute review of the mock chart; 2) one 15 to 20 minute SP interview; and 3) a self-report instrument measuring the student physician's clinical inferences. On each date four subgroups completed their SP interviews.

The participants arrived at the Counseling and Assessment Clinic in Bryan, Texas and were greeted by an administrative assistant who was staffing the waiting room desk. The administrative assistant gave each participant a personalized packet with instructions for participation in the SP interviews, a sealed mock chart, as well as a sealed copy of the clinical inferences self-report instrument. The participants were then directed to open the mock chart and were given 5 minutes to read the patient description, after which the packet was returned to the administrative assistant. The participants were reminded that they had fifteen minutes per SP interview, and that they should return to the front desk after the interview for further instructions. The participants were then directed to their

assigned consultation room where their SP was waiting. Each consultation room was equipped with a high-resolution videotape camera. All participants and SPs had been informed prior to consenting to participate in the project about the videotaping and the confidentiality of their videotapes and other data .

Standardized patients (SPs) were six female actors recruited from the Bryan-College Station community. They were trained according to standards set by the CATCHUM Project of the National Cancer Institute to portray a breaking bad news of cervical cancer scenario. The SP scenario used in this study was developed collaboratively among the SPs, using medical information adapted from the cancer prevention curriculum for medical education developed by the CATCHUM Project. A copy of the scenario is in Appendix B.

The participants each conducted a 15 to 20 minute interview with the SP in which they disclosed the bad news of a diagnosis of cervical cancer, responded to patient questions and provided appropriate information and support. If needed, there was a signal to end the interview at twenty minutes. Finally, when the participants returned to the front desk, they picked up their post-interview packet and returned to the examination room to complete the Physician's Clinical Inferences Scale. Completion of the self-report measure following the interview took approximately fifteen minutes. The administrative assistant then gathered the self-report measures and videotapes and placed them in their corresponding envelopes. At this point the participants were thanked, reminded of their agreement that all information on the content of the packets and medical interview would remain confidential, debriefed regarding when they would be able to review the videotape of their medical interview following the completion of the

study, and permitted to leave the clinic. The video machines were then reloaded with new videocassettes, and packets for the next four participants were readied. All participants performed their interviews with the SPs in four sessions of four hours each over the course of five weeks. All videotapes and participant self report data was stored in a locked office in the Department of Family and Community Medicine at the Texas A&M College of Medicine.

After all videotaped interviews were completed, all interviews were transcribed, and observational data on doctors' affective behaviors in the doctor patient interactions was gathered through the rating of videotaped interviews with SPs using the Specific Affect Coding System −16 Code System (SPAFF-16) (Gottman, McCoy, Coan & Collier, 1996). A description of the modifications to the SPAFF-16 is in Appendix C. As previously discussed, the modifications made to the SPAFF-16 were intended to make it more appropriate for medical interviews. Due to slightly differing lengths of interviews, data from the first 10 minutes of all medical interviews were used in the present study.

Participants

Participants in this study were seventy-one second year medical students at a small, southwestern U.S. medical school. Ethnicity of the participant sample was distributed as follows: African American 6.5%, Mexican American 5.2%, Native American 1.3%, Asian American 20.8%, other Hispanic 2.3%, Caucasian 58.4%, other ethnicities 2.6%, and unreported ethnicity 2.6%. Regarding marital status, 22.4% were married and 77.6% were unmarried. Regarding gender, 51.5% were male and 48.5% were female. Participants ranged in age from 21 to 40 years old. Participants were involved in this study as part of their medical training in working with patients. As part of

this training all participants were required to attend a 1.5 hour workshop on advanced communication skills focusing on breaking bad news to patients, as well as complete a 15 minute mock interview with a female actor trained as a standardized patient (Preslin, Giglio, Lewis, Ahearn & Radecki, 2000). Although their participation in the mock interview was a part of an objective structured clinical exam (Hodges, Turnbull, Cohen, Beinenstock & Norman, 1996), whether or not the data was included in the study was voluntary. All participants read and signed informed consent documents prior to their participation. Participants were not granted course credit or any other remuneration for their participation in the study.

Analyses

All self-report and observational data were entered into an SPSS 10.0 data file. Data was checked for accuracy by evaluating the range of scores and identifying cases that had out of range data. Once the data input was verified, all statistics were computed using SPSS for Windows 10.0. Several statistical analyses were used to address the research questions proposed in Chapter I.

Omnibus research question number one with its two sub-questions 1a and 1b asked whether there would be a difference in the affective tone of physician patient interactions between conditions based on the priming of a student physicians' own versus a matched participants' significant other representations, or the priming of positive or negative significant other representations. These questions were answered using an 2 x 2 MANOVA controlling for participant gender and PAFS-QVC variables.

Omnibus research question number two with its two sub-questions 2a and 2b asked whether there would be a difference in clinical inferences between groups based on

priming of physicians' own versus a matched participants' significant other representations, or the priming of positive or negative significant other representations. These questions were answered using a 2 x 2 MANOVA controlling for participant gender, and PAFS-QVC scores.

Research question number three asked whether intergenerational family relationships, specifically individuation from significant others, as measured by participants' PAFS-QVC scale scores, would predict student physicians' affective interactions with patients and clinical inferences about patients. Specifically, the research was interested in whether individuation could predict differences in student physicians' expression of negative transference in affective interactions and clinical inferences with standardized patients. This question was addressed through a series of hierarchical regressions of PAFS-QVC scores onto SPAFF-16 ratings and PCIS clinical inferences scale scores.

CHAPTER IV

RESULTS

This chapter includes the results of the experimental study in which student physicians received patient information in one of four experimental conditions (see Table 1) and then conducted a medical interview with a standardized female patient. Dependent variables were: a) observers' ratings of student physicians' affective interactions (SPAFF-16) in the first 10 minutes of the videotaped interview, and b) student physicians' self-reports of their clinical inferences with patients (PCIS). Covariates in the multivariate analyses included were several subscales from the PAFS-QVC, which demonstrated a statistical relationship to the dependent variables, as well as gender and physician verbosity as measured by a word count of physicians' speech in the first five minutes of the medical interview.

Review of Dependent Variables

Positive Affect was defined as the summed proportions of each talk turn in which the following affects, as defined by the modified SPAFF 16-code system (Gottman, 1996), appeared in the first 10 minute segment of the medical interview: Interest, Affection/Caring, Humor, Hope/Anticipation, and Validation. The total positive or negative affect expressed could not theoretically exceed the number of physician talk turns in the segment.

Negative Affect was defined as the proportion of physician talk turns in which the following affects: Disgust, Contempt, Belligerence, Control/Domination, Anger, Defensiveness, Whining, Sadness, Stonewalling, as defined by the modified SPAFF 16-code system (Gottman, McCoy, Coan & Collier, 1996), appeared in the first 10 minute

segment of the medical interview: Disgust, Contempt, Belligerence, Domination/Control, Anger, Defensiveness, Sadness, Stonewalling, and Fear/Tension.

Neutral Affect as defined by the SPAFF 16-code system (Gottman, McCoy, Coan & Collier, 1996) was not included in the calculations of Positive Affect or Negative Affect.

Clinical Inferences – Likelihood of Treatment Success was defined as the summed score of all items on the Treatment Success factor of the experimenter-developed physician self-reported Clinical Inferences Scale. For example, items on this scale included: "This patient is likely to comply with my treatment recommendations" and "The prognosis for this patient is hopeful".

Clinical Inferences – Patient as Partner was defined as the summed score of all items on the Patient as Partner factor of the experimenter-developed physician self-reported Clinical Inferences Scale. For example items on this scale included: "This patient is able to understand the information I have just given her" and "This patient is very motivated to engage in treatment".

<div align="center">Rationale for Selection of Covariates</div>

Weinfurt (as cited in Grimm & Yarnold, 2000 p. 266) has suggested that a covariate should be used in an ANCOVA only when there is a significant linear relationship with the covariate and dependent measures, and when the homogeneity of regression hyperplanes assumption is met. This means that the experimental groups have equal regression slopes for the covariate. Since all covariates available were theoretically important, but also since the number of covariates could make the analysis unwieldy, for purposes of parsimony only those theoretically valuable covariates that also demonstrated

an empirical relationship to the dependent variables were selected as covariates. According to the procedure recommended by Weinfurt (as cited in Grimm & Yarnold, 2000, p. 266), the following factors were included as covariates in the final MANOVA testing for differences between experimental groups. These factors demonstrated a bivariate correlation of .2 or higher with one of the dependent variables described above (see Table 12 for bivariate correlations between variables in the study). This cutoff criterion of $r = .2$ was chosen by the principal investigator as the smallest statistically significant linear relationship between a covariate and the dependent measures that would be of interest to the present study. The covariates that met this criterion were:

Gender of Physician (1=male; 2=female). This covariate correlated $r = -.309$ with Negative Affect.

Intergenerational Intimidation scale score as defined by the Personal Authority in the Family System Questionnaire Version C. This covariate correlated $r = .27$ with Clinical Inferences: Likelihood of Treatment Success.

Intergenerational Intimacy scale score as defined by the Personal Authority in the Family System Questionnaire C. This covariate correlated $r = .23$ with Negative Affect and $r = -.18$ with Positive Affect.

Peer Intimacy scale score as defined by the Personal Authority in the Family System Questionnaire C. This covariate correlated $r = -.404$ with Clinical Inferences.

Peer Individuation scale score as defined by the Personal Authority in the Family System Questionnaire C. This covariate correlated $r = -.22$ with Negative Affect and $r = .23$ with Positive Affect.

Physician Verbosity Index as defined by the experimenter to be summed word count of physician talk turns in the first five minutes of the medical interview. This covariate correlated r = -.19 with Negative Affect; r = .2 with Positive Affect, and -.19 with Clinical Inferences: Likelihood of Treatment Success.

Power Analysis

Due to concern about the power of this sample size to produce a detectable effect, a power analysis was performed using the Power and Precision power analysis software. This analysis was performed anticipating that the study would include a regression model of 7 variables in the set of interest, which would yield an increment of .260. The total R-squared for 7 variables in the model was anticipated to be approximately .260. This effect was selected as the smallest effect that would be important to detect, in the sense that any smaller effect may not be of clinical or substantive significance. It was also assumed that this effect size is reasonable, in the sense that an effect of this magnitude could be anticipated in this field of research. Anticipating that the study would lose cases either due to missing data or attrition, the sample size in the power analysis was set at 49. The power analysis focuses on the increment for the set of interest over and above any prior variables (i.e. 7 variables yielding an increment of 0.26). With the given sample size of 49 and alpha set at .05 the study was estimated to have a power of 0.81. The test is based on Model 2 error, which means that variables entered into the regression subsequent to the set of interest will serve to reduce the error term in the significance test, and therefore are included in the power analysis.

Due to missing self-report data (used for covariates), missing videotape data due to technical malfunctions (used as dependent variable data) and the use of listwise

deletion methods in data analysis, the number of participants was reduced from 71 to 66. In some analyses this number dropped to 57. Listwise deletion is a method for dealing with missing data within SPSS (Tabachnick & Fidell, 2001) and involves the elimination of any cases with missing values on any item of any scale used in the study. However, given the previous power analysis this sample size was judged to have adequate power to detect clinically and statistically significant effects therefore analyses proceeded.

Inter-rater Reliability of SPAFF-16 Ratings

Inter-rater agreement was calculated by correlating the principal investigator's ratings of proportion of affect (positive, negative, or neutral) in each physician talk turn with an independent rater's ratings of proportion of affect (positive, negative or neutral) for a mean of 24 talk turns across nine participants for a total of 215 talk turns. Inter-rater agreement was calculated using a Pearson's r correlation coefficient to examine the relative agreement between ratings of positive, negative or neutral affect in each talk turn.

The Pearson's r correlation coefficient was chosen as preferable to a kappa coefficient because of the wide disagreement about the usefulness of kappa statistics to assess rater agreement. As a test statistic, kappa can verify that agreement exceeds chance levels, however as a measure of the level of agreement, kappa is not "chance corrected" (Uebersax, 1987). For purely comparison purposes, kappa statistics on inter-rater agreement were included, but since they required the reduction of the data from interval to ordinal scale, the kappa results must be interpreted with caution.

As regards ratings of physician affective behavior in the medical interviews, inter-rater agreement between independent raters and the principal investigator was statistically significant ($p < .01$) in the anticipated direction for all three affect codes. Means and standard deviations for all affect codes as rated by the principal investigator (PosAffect, NegAffect and NeutralAff) and independent raters (R2POSAFF, R2NEGAFF and R2NEUAFF) are included in Table 4. Correlation coefficients between the principal investigator's ratings of degree of presence of each affect category per talk turn (PosAffect, NegAffect and NeutralAff) and independent raters' ratings of degree of presence of each affect category per talk turn (R2POSAFF, R2NEGAFF and R2NEUAFF) are included in Table 5.

Table 4

Inter-rater Reliability: Means and Standard Deviations for Raters Using the SPAFF-16

	Mean	Std. Deviation	N
PosAffect	.352	.388	215
NegAffect	.282	.338	215
NeutralAff	.362	.359	215
R2POSAFF	.302	.427	215
R2NEGAFF	.299	.419	215
R2NEUAFF	.397	.457	215

PosAffect = Principal Investigator's SPAFF-16 rating of positive affect
NegAffect = Principal Investigator's SPAFF-16 rating of negative affect
NeutralAff = Principal Investigator's SPAFF-16 rating of neutral affect
R2POSAFF = Independent Raters' SPAFF-16 ratings of positive affect
R2NEGAFF = Independent Raters' SPAFF –16 ratings of negative affect
R2NEUAFF = Independent Raters' SPAFF-16 ratings of neutral affect

N = 215 represents 215 talk turns from 9 randomly sampled medical interviews

Table 5

Inter-rater Reliability: Correlations Between Principal Investigator and Independent
Raters' SPAFF-16 Ratings of Positive, Negative and Neutral Affects in Videotaped
Interviews

		PosAffect	NegAffect	NeutralAff	R2POSAFF	R2NEGAFF	R2NEUAFF
PosAffect	Pearson Correlation	1.000	-.518**	-.592**	.562**	-.196**	-.344**
	Sig. (2-tailed)	.	.000	.000	.000	.004	.000
	N	215	215	215	215	215	215
NegAffect	Pearson Correlation	-.518**	1.000	-.382**	-.334**	.544**	-.187**
	Sig. (2-tailed)	.000	.	.000	.000	.000	.006
	N	215	215	215	215	215	215
NeutralAff	Pearson Correlation	-.592**	-.382**	1.000	-.293**	-.300**	.548**
	Sig. (2-tailed)	.000	.000	.	.000	.000	.000
	N	215	215	215	215	215	215
R2POSAFF	Pearson Correlation	.562**	-.334**	-.293**	1.000	-.415**	-.553**
	Sig. (2-tailed)	.000	.000	.000	.	.000	.000
	N	215	215	215	215	215	215
R2NEGAFF	Pearson Correlation	-.196**	.544**	-.300**	-.415**	1.000	-.529**
	Sig. (2-tailed)	.004	.000	.000	.000	.	.000
	N	215	215	215	215	215	215
R2NEUAFF	Pearson Correlation	-.344**	-.187**	.548**	-.553**	-.529**	1.000
	Sig. (2-tailed)	.000	.006	.000	.000	.000	.
	N	215	215	215	215	215	215

** Correlation is significant at the 0.01 level (2-tailed).

PosAffect = Principal Investigator's SPAFF-16 rating of positive affect
NegAffect = Principal Investigator's SPAFF-16 rating of negative affect
NeutralAff = Principal Investigator's SPAFF-16 rating of neutral affect
R2POSAFF = Independent Raters' SPAFF-16 ratings of positive affect
R2NEGAFF = Independent Raters' SPAFF –16 ratings of negative affect
R2NEUAFF = Independent Raters' SPAFF-16 ratings of neutral affect

N = 215 represents 215 talk turns from 9 randomly sampled medical interviews

The Pearson's r correlation between the principal investigator's positive affect ratings and independent raters' positive affect ratings was r = .56, (p < .01). The pearson r correlation between the principal investigator's negative affect ratings and independent raters' negative affect ratings was r = .54, (p < .01). The pearson r correlation between the principal investigator's neutral affect ratings and independent raters' neutral affect ratings was r = .55, (p < .01).

Within the structure of the primary investigator's and the independent raters' affect ratings, the relationships between affect categories were very consistent. One would expect positive, negative and neutral affect categories to be relatively independent, with positive and negative affect categories reflecting an inverse relationship. Within the primary investigator's ratings of affect categories, positive and negative affect categories were inversely related (r = -.52; p < .01), as were positive and neutral affect (r = -.59; p < .01). Within the primary investigator's ratings of affect categories negative and neutral affect were inversely related but to a lesser degree than positive and neutral (r = -.38; p < .01). This may reflect the relative inscrutability of the mid-range of physician affective behavior in which neutral information can appear as pure communication of fact or emotionally aloof, but definitely does not appear interested, warm, validating or humorous. Likewise, a strongly positive affect code easily may easily "take over" the message of a talk turn, turning it from neutral information giving to entirely warm, validating and humorous.

Within the independent raters' ratings of affect categories, positive and negative affect categories were also inversely related (r = -.415; p < .01), as were positive and neutral affect (r = -.55; p < .01). Independent raters appeared somewhat clearer than the

primary investigator about the distinction between negative and neutral affect codes ($r = -.53$; $p < .01$ for the independent raters as compared to $r = -.38$; $p < .01$ for the primary investigator).

To additionally verify inter-rater agreement, SPAFF-16 ratings of positive and negative affect in physician talk turns were divided into ordinal scale data in order to perform frequency estimates of inter-rater agreement such as coefficient kappa. Results from these analyses are included in Tables 6-11 below. Affect ratings for positive and negative affect were divided into low (presence rated as 0% to 32 % of affect in turn), moderate (presence rated as 33% to 65% of affect in the turn), or high (presence rated as 66 to 100% of affect in the turn). Frequency analyses were performed on agreement of these ordinal rankings of positive and negative affect across the principal investigator's ratings and other raters' ratings.

Frequency analyses produced chi-square and kappa statistics for inter-rater agreement. Regarding positive affect in physician talk turns, raters agreed on the presence of low, medium or high degree of positive affect at a rate that exceeded chance ($p < .001$) with a kappa statistic of .40. Regarding negative affect in physician talk turns, raters agreed on the presence of low, medium or high degree of negative affect at a rate that exceeded chance ($p < .001$) with a kappa statistic of .393.

Table 6

Crosstab Count of Inter-rater Agreement on Positive Affect Ratings Divided Ordinally into Low, Medium and High Affect Presence

	R2POSORD			Total
	high	low	mod	
KPOSORD				
high	33	15	8	56
low	10	92	4	106
mod	10	29	14	53
Total	53	136	26	215

KPOSORD = principal investigator's ordinal rating of positive affect;
R2POSORD = other raters' ordinal ratings of positive affect

Table 7

Chi-Square Tests of Inter-rater Agreement on Ordinal Positive Affect Ratings

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	74.316[a]	4	.000
Likelihood Ratio	72.203	4	.000
N of Valid Cases	215		

a 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.41.

Table 8

Symmetric Measures of Inter-rater Agreement on Ordinal Positive Affect Ratings

	Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal				
Kendall's Tau-b	.307	.076	3.964	.000
Measure of Agreement				
Kappa	.405	.050	8.408	.000
N of Valid Cases	215			

a Not assuming the null hypothesis.
b Using the asymptotic standard error assuming the null hypothesis.

Table 9

Crosstab Count of Inter-rater Agreement on Negative Affect Ratings Divided Ordinally into Low, Medium and High Affect Presence

	R2NEGORD			Total
	high	low	mod	
KNEGORD				
high	24	11	7	42
low	12	99	4	115
mod	17	25	16	58
Total	53	135	27	215

KNEGORD = principal investigator's ordinal negative affect rating;
R2NEGORD = other raters' ordinal negative affect ratings

Table 10

Chi-Square Tests of Inter-rater Agreement on Ordinal Negative Affect Ratings

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	68.951^A	4	.000
Likelihood Ratio	68.915	4	.000
N of Valid Cases	215		

a 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.27.

Table 11

Symmetric Measures of Inter-rater Agreement on Ordinal Negative Affect Ratings

	Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal Kendall's Tau-b	.192	.082	2.309	.021
Measure of Agreement Kappa	.393	.050	8.195	.000
N of Valid Cases	215			

a Not assuming the null hypothesis.
b Using the asymptotic standard error assuming the null hypothesis.

We may conclude from the statistically significant relationships between raters' observations that the categories of positive, negative and neutral affect are valid umbrella categories for affective expression.   Affect categories were related to one another in the expected directions, and the structural relationships between categories were similar across raters.

In addition, we may conclude from these analyses that, when using intervally scaled data, inter-rater correlations for positive, negative and neutral affect is high, ranging from a pearson's r = .55, (p < .01) to a pearson's r = .56, (p < .01).   We may also conclude that when the intervally scaled data on positive and negative affect is collapsed into ordinal data (low, moderate, and high presence of positive or negative affect) kappa statistics indicated that inter-rater agreement exceeded chance, with kappa coefficients of agreement between raters ranging from .39 for level of negative affect to .40 for level of positive affect

<div align="center">Reliability Analyses of PAFS-QVC Scales</div>

Cronbach's coefficient alpha for the PAFS-QVC was calculated on all PAFS-QVC used as covariate scales in the present data set. The coefficient alpha for each of the PAFS scales in the present data set was as follows:

Reliability coefficient alpha for intergenerational intimacy was $\alpha = .950$ in the present data set. Reliability data for intergenerational intimacy is in Appendix G.

Reliability coefficient alpha for peer fusion/individuation was $\alpha = .694$ in the present data set. Reliability data for peer intimacy is in Appendix H.

Reliability coefficient alpha for peer intimacy was $\alpha = .963$ in the present data set. Reliability data for peer intimacy is in Appendix I.

Reliability coefficient alpha for intergenerational intimidation was $\alpha = .843$ in the present data set. Reliability data for intergenerational intimidation is in Appendix J.

Reliability Analyses of the Physician Clinical Inferences Scale

The Physician Clinical Inferences Scale is composed of two subscales: Likelihood of Treatment Success scale and the Patient as Partner scale. Reliability analyses for each scale in the PCIS are in Appendices K and L.

The likelihood of treatment success score consists of summed items 4, 6 and 7 of the PCIS. Reliability coefficient alpha for the PCIS scale of patient as partner was $\alpha = .62$ in the present data set.

The patient as partner score consists of items 3,5 and 9 of the PCIS. Reliability coefficient alpha for the PCIS scale of patient as partner was $\alpha = .62$ in the present data set.

Examination of Data Assumptions

Sample sizes were the same for the Negative Own and Negative Other conditions (n = 16), and for the Positive Own and Positive Other conditions (n = 17). The unequal cells in the design indicate that the data represent an unbalanced model for multivariate analysis of variance (Cohen, Cohen, West & Aiken, 2003). Unbalanced as well as balanced models may be examined in a MANOVA. Therefore analysis of data proceeded. Sample size data is included in Table 12.

Table 12

Sample Size by Experimental Condition

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Positive Own	17	25.8	25.8	25.8
	Negative Own	16	24.2	24.2	50.0
	Positive Other	17	25.8	25.8	75.8
	Negative Other	16	24.2	24.2	100.0
	Total	66	100.0	100.0	
	Sample Size				

Missing Data

71 participants completed all or most of the components of the study including pre-experimental gathering of covariate data on the Personal Authority in the Family System Questionnaire (PAFS-Q), a review of the mock chart with information specific to experimental condition, an interview with a standardized patient, and post-interview paper and pencil self-report Physician Clinical Inferences scales. In data collection there were 5 participants who experienced technical malfunctions in the videotaping phase of the experiment. The videotape data was not available for Specific Affect Coding System (SPAFF) coding for these participants and thus these cases were not included as valid cases in the data set. There were 66 valid cases in the study.

Data Assumption One: Homogeneity of Variance/Covariance/Error Variance

SPSS 10.0 authors have stated: "The assumption for the multivariate approach is that the vector of the dependent variables follow a multivariate normal distribution and

the variance-covariance matrices are equal across cells formed by the between-subjects effects. Box's M tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups…if the significant level is significantly small (less than .05) then the null hypothesis is rejected." Analysis of variance is robust to departures from normality, however to check that the data set for this study met the assumptions required for a multivariate analysis, homogeneity of variance tests were examined, including Levene's test of equality of error variance and Box's M test of equality of covariance. In this study, the significance level of both the Levene's test of equality of error variance and the Box's M test of equality of covariance was larger than $p = .05$, therefore the null hypothesis of equality of error variance and covariance between experimental groups was not rejected. Data for these tests are included in Tables 13 and 14.

Also included here in Tables 15a to 15d are variance, skewness and kurtosis estimates for each experimental condition by each of the dependent variables.

Table 13

Levene's Test of Equality of Error Variances

	F	df1	df2	Sig.
PosAffect	2.327	3	46	.087
NegAffect	2.213	3	46	.099
Clinical Inferences: Tx Success	.397	3	46	.756
Clinical Inferences: Patient as Partner	.305	3	46	.821

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a Design:
Intercept+INTTIMID+PEERINT+GENDER+INTINT+PEERIND+DRWORDS+INFOSRC+INFOSLNT+
INFOSRC * INFOSLNT

Table 14

Box's Test of Equality of Covariance Matrices

Box's M	37.421
F	1.042
df1	30
df2	5114
Sig.	.404

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a Design: Intercept+INTTIMID+PEERINT+GENDER+INTINT+PEERIND+DRWORDS+INFOSRC+INFOSLNT+ INFOSRC * INFOSLNT

Table 15a

Variance, Skewness and Kurtosis Estimates for Each Experimental
Condition by the DV Positive Affect

Experimental Condition	Variance	Skewness	Skewness SE	Kurtosis	Kurtosis SE
Positive Own	43.87	.963	.661	.782	1.28
Positive Other	121.47	1.46	.661	1.52	1.28
Negative Own	154.30	1.036	.616	-.514	1.19
Negative Other	37.29	.493	.597	-.795	1.15

Table 15b

Variance, Skewness and Kurtosis Estimates for Each Experimental
Condition by the DV Negative Affect

Experimental Condition	Variance	Skewness	Skewness SE	Kurtosis	Kurtosis SE
Positive Own	47.92	.802	.661	-1.081	1.279
Positive Other	28.229	.550	.661	-.215	1.279
Negative Own	17.199	.165	.616	-.660	1.191
Negative Other	25.926	-.372	.597	-.778	1.154

Table 15c

Variance, Skewness and Kurtosis Estimates for Each Experimental
Condition by the DV Clinical Inferences: Treatment Success

Experimental Condition	Variance	Skewness	Skewness SE	Kurtosis	Kurtosis SE
Positive Own	14.364	-.980	.661	.163	1.279
Positive Other	7.364	-.023	.661	-1.825	1.279
Negative Own	8.308	.329	.616	-.781	1.191
Negative Other	10.462	.764	.597	-.791	1.154

Table 15d

Variance, Skewness and Kurtosis Estimates for Each Experimental
Condition by the DV Clinical Inferences: Patient as Partner

Experimental Condition	Variance	Skewness	Skewness SE	Kurtosis	Kurtosis SE
Positive Own	8.0	-.097	.661	-1.359	1.279
Positive Other	5.255	.242	.661	.049	1.279
Negative Own	10.474	.465	.616	-.929	1.191
Negative Other	6.593	-.757	.597	-.291	1.154

Data Assumption Two: Multivariate Normality

The results of the Levene's test of equality of error variance and Box's M test of equality of covariance suggested that homogeneity of error variance and covariance were not issues for the data set in this study. Because all cell sizes are similar, it was unlikely this would be an issue in the present data set. However it was also necessary to ensure that the data set met the assumption of multivariate normality. When a multivariate exploration of the data used Kolmogorov-Smirnov and Shapiro-Wilk statistics to examine possible violations of the assumption of multivariate normality, significant differences were found between several of the experimental conditions with regards to both positive and negative affect as dependent variables.

The results indicating departures from multivariate normality in several of the cells of this study must temper interpretation of any statistically significant results in the multivariate analysis of data in this study. Bray and Maxwell (1985) noted "in many conditions, violating the assumptions does not necessarily invalidate the results" (of a MANOVA type analysis)(p. 33). Results from analyses examining the assumption of multivariate normality are included in Table 16.

Table 16

Multivariate Tests of Normality

Dependent Variable	Experimental Condition	Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Positive Affect	positive own	.134	17	.200	.929	17	.276
	negative own	.248	16	.010	.874	16	.034
	positive other	.224	17	.023	.862	17	.016
	negative other	.163	16	.200	.946	16	.451
Negative Affect	positive own	.202	17	.063	.869	17	.021
	negative own	.078	16	.200	.972	16	.830
	positive other	.155	17	.200	.894	17	.054
	negative other	.149	16	.200	.947	16	.456
Clinical Inferences: Treatment Success	positive own	.190	17	.105	.928	17	.264
	negative own	.119	16	.200	.964	16	.699
	positive other	.202	17	.063	.904	17	.083
	negative other	.214	16	.048	.944	16	.430
Clinical Inferences: Patient as Partner	positive own	.121	17	.200	.952	17	.484
	negative own	.205	16	.072	.906	16	.099
	positive other	.158	17	.200	.976	17	.880
	negative other	.171	16	.200	.920	16	.218

* This is a lower bound of the true significance.
a Lilliefors Significance Correction

Data Assumption Three: Linearity and Outliers

Boxplots detailing distribution of scores for each experimental condition within each DV are included in Figures 2 to 6. These plots search for outliers within each of the four experimental groups for each DV. An examination of these plots revealed no outliers in any of the experimental groups for three of the DVs: Clinical Inferences (Patient as Partner), Clinical Inferences (Treatment Success), and Negative Affect. However there were two outliers found in several of the experimental groups for the DV Positive Affect. Data was examined and cleaned. It was determined that the outliers were not due to data entry errors, therefore they were allowed to remain in the final data set.

Figure 2

Boxplot Detailing Distribution of Scores for CR: Patient as Partner
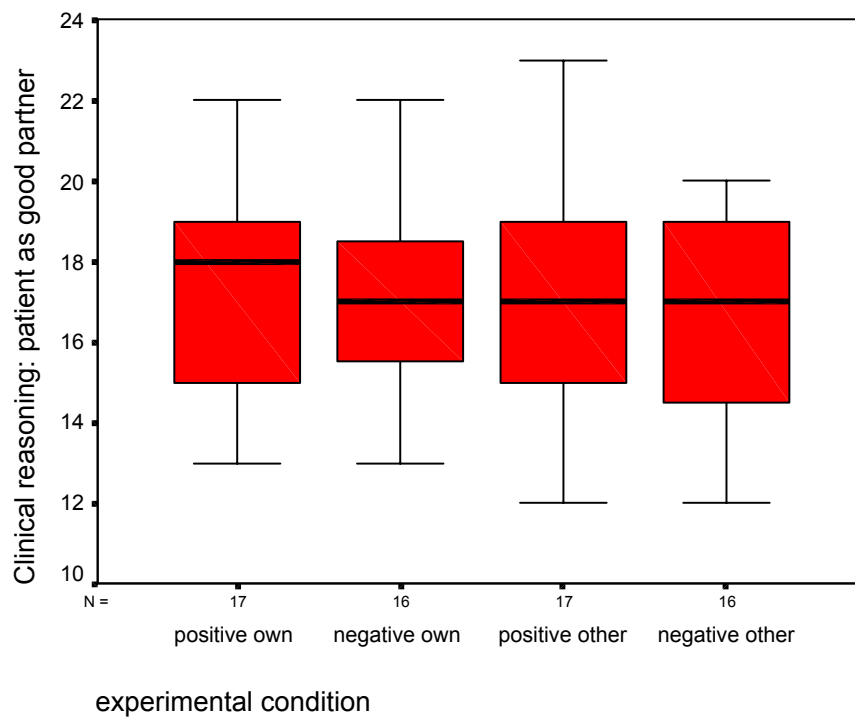
Figure 3

Boxplot Detailing Distribution of Scores for CR: Likelihood of Treatment Success

experimental condition
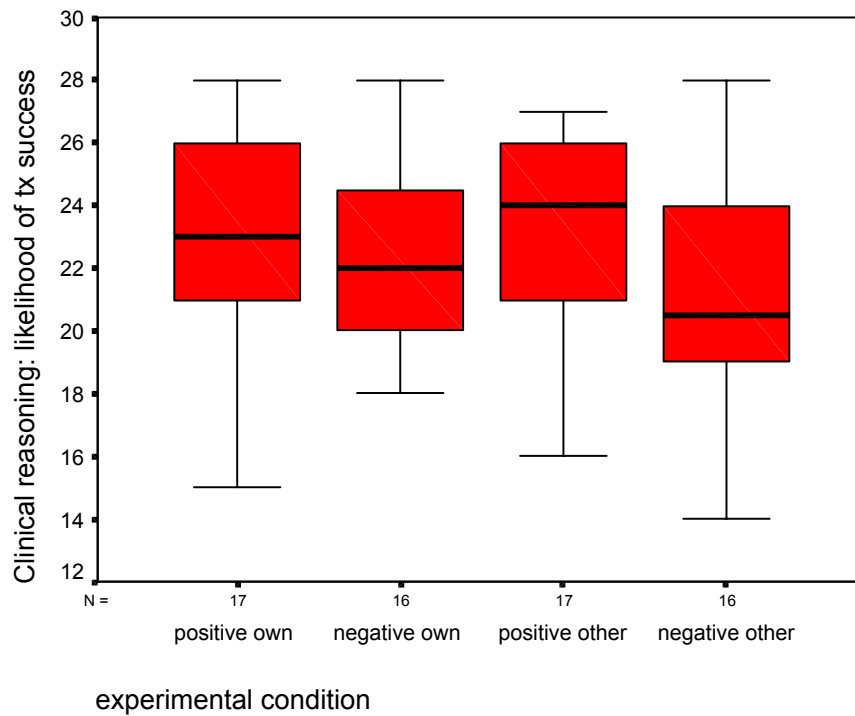
Figure 4

Boxplot Detailing Distribution of Scores for Negative Affect

experimental condition
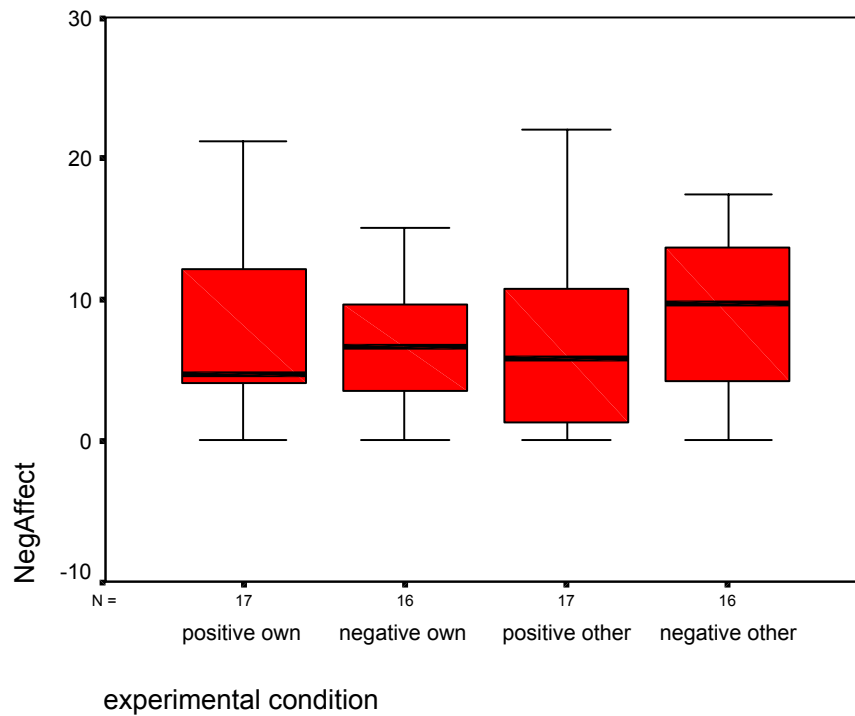
Figure 5

Boxplots Detailing Distribution of Scores for Positive Affect

experimental condition
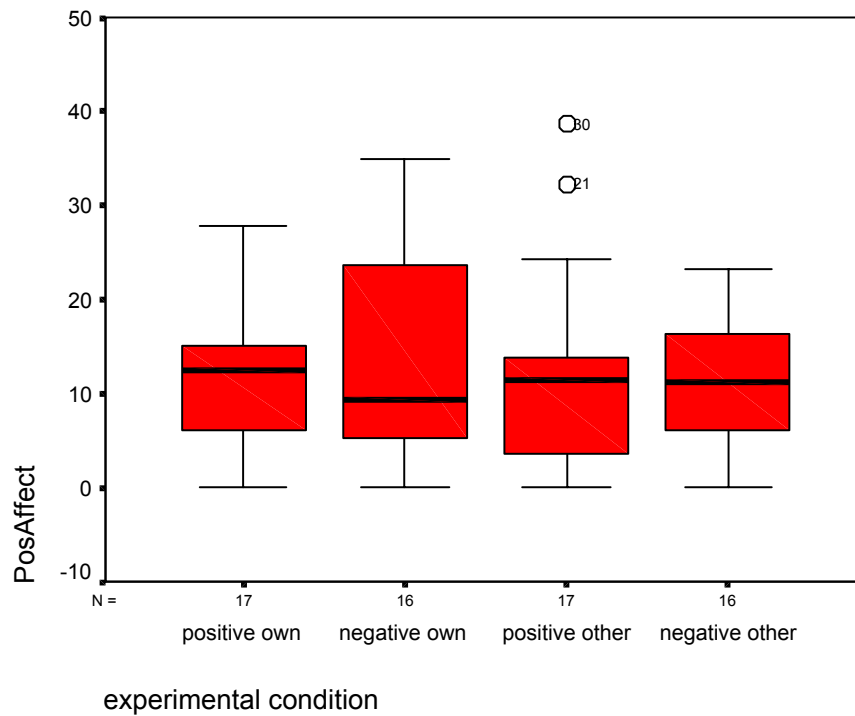
Figure 6

Boxplot Summarizing Distribution of Scores for all DVs

experimental condition
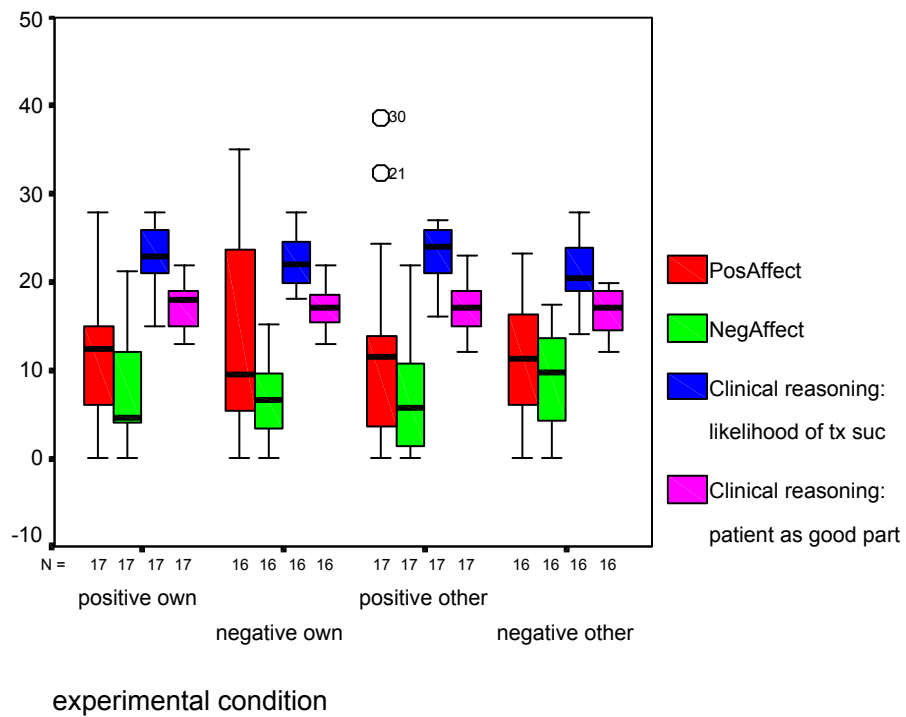
Data Assumption Four: Reliability of Covariates

The covariates included in this study were: Gender, Physician Verbosity, and PAFS-QVC subscales of Intergenerational Intimacy, Intergenerational Intimidation, Peer Intimacy, and Peer Individuation.   Coefficient alpha results reviewed again here for the following PAFS-QVC subscales: Intergenerational Intimacy, Intergenerational Intimidation, Peer Intimacy, and Peer Individuation. Table 17 includes coefficient alpha results for the PAFS-QVC subscales used in the study. Coefficient alpha results are not reported for Gender as it is a status variable, neither are coefficient alpha results reported for the Physician Verbosity Index, as it is a single item summative score.

The covariate Physician Verbosity Index consists of a summed word count of all physician talk turns in the first five minutes of the medical interview. Coefficient alpha results are not reported for the Physician Verbosity Index, as it is a single item summative score.

Table 17

Reliability of PAFS-QVC Covariates

PAFS Scale	Coefficient α	Number of Items
Intergenerational Intimacy	.95	23
Intergenerational Intimidation	.84	8
Peer Intimacy	.96	11
Peer Individuation	.69	8

Bivariate Correlations Among Variables in the Data Set

Prior to running multivariate or regression analyses, the data was examined for correlations between predictors and DVs. Table 18 includes bivariate correlations among variables in the data set.

In examining the relationship between variables in this data set it was noticeable that the correlation between the affective variables of interest (Positive Affect and Negative Affect) was not statistically significant ($r = -.166$). This may indicate that student physicians' Positive Affect and Negative Affect, as expressed in the medical interviews, are relatively orthogonal concepts, rather than inter-related poles on a single continuum. Conversely, the Clinical Inferences variables have a strongly positive and statistically significant correlation ($r = .465**$; $p < .01$). Physicians' perspectives on their patient and the potential for treatment success with the same patient would logically be related, as the data here confirm

Table 18

Correlation Matrix of Independent and Dependent Variables (N=66)

	NEGA	POSA	CRTS	CRPP	GEN	INTM	INTD	INFUS	INTRI	PRAT	PINT	PFU
NEGA	1.0	-.166	.041	.104	⁻**309****	.232	-.043	-.025	000	.069	-.035	-.041
POSA		1.0	.088	.064	.158	-.187	.102	.089	-.046	-.084	-.068	**.243***
CRTS			1.0	**.465****	.086	-.105	**.270***	.093	.179	-.060	**-.404****	-.096
CRPP				1.0	.127	-.135	.025	-.036	.169	.060	-.139	-.175
GEN					1.0	-.127	-.131	.175	.117	-.058	-.098	.043
INTM						1.0	-.152	**-.468****	-.237	-.481	.070	-.241
INTD							1.0	.222	**.354****	.070	-.190	.056
INFU								1.0	**.444****	**.265***	-.198	**.262***
INTRI									1.0	.161	-.231	.100
PRAT										1.0	.001	**.30***
PINT											1.0	-.157
PFU												1.0

* $p < .05$, ** $p < .01$.

NEGA= Negative Affect; POSA= Positive Affect; CRTS = Clinical Inferences/Likelihood of Treatment

Success; CRPP = Clinical Inferences/Patient as Partner; GEN=Gender; INTM = Intergenerational Intimacy;

INFU = Intergenerational Fusion/Individuation; INTD = Intergenerational Intimidation; INTRI =

Intergenerational Triangulation; PRAT = Personal Authority; PINT = Peer Intimacy; PFU = Peer

Fusion/Individuation.

Several variables had correlation coefficients that were statistically significant at the p < .05 level in relationship to the dependent variables of Positive or Negative Affect, Clinical Inferences (Likelihood of Treatment Success), and Clinical Inferences (Patient as Partner). For the variable of Negative Affect, one variable had a statistically significant correlation coefficient: Gender (r = -.309; p < .01). This indicates that in general female participants had statistically significant lower ratings on Negative Affect in the medical interview. A second variable also had a correlation coefficient that approached statistical significance: Intergenerational Intimacy (r = .232; p < .06). This indicates that in general participants with higher scores on Intergenerational Intimacy (more intimacy with parents) may have been more likely to express Negative Affect (Anger/Irritation, Domination/Control, Stonewalling, Defensiveness, Fear/Tension, Sadness) in the medical interview.

For the variable Positive Affect, one variable had a statistically significant correlation coefficient: Peer Fusion/Individuation (r = .243; p < .05). This indicates that in general participants with greater individuation in peer relationships were more likely to express Positive Affect (Interest, Hope, Validation, Caring/Affection, Humor) in the medical interview.

For the variable Clinical Inferences: Likelihood of Treatment Success, two variables had statistically significant correlation coefficients: Intergenerational Intimidation (r = .270; p < .05) and Peer Intimacy (r = -.404; p < .01). The positive correlation between Intergenerational Intimidation and Likelihood of Treatment Success may indicate that in general participants with less intimidation in their relationship with parents were more likely to predict that treatment with the standardized patient would be successful, and that participants with more intimidation in their relationship with parents were less likely to

predict that treatment would be successful.   The moderate negative correlation between Peer Intimacy and Likelihood of Treatment of Success may suggest that participants with greater intimacy and degree of satisfaction with peer relationships may have been much less likely to predict that treatment with the standardized patient would be successful.

There were also several correlations between PAFS variables. Further study of the relationships between these variables may be of interest for the purposes of evaluating the effect of PAFS variables on student physicians' affective interactions and clinical inferences about standardized patients, even though some PAFS variables do not correlate with the Affect and Clinical Inferences variables of interest in the present study. It is possible that these variables may have exerted influence on affect and clinical inferences in the medical interview through their indirect influence on other PAFS variables that did have direct relationships with affect and clinical inferences variables.

Table 19

Multivariate Tests of Experimental Data

Effect		Value	F	Hypothesis df	Error df	Sig.	Eta Squared	Noncent. Parameter	Observed Power
Intercept	Pillai's Trace	.330	4.557	4.000	37.000	.004	.330	18.230	.912
	Wilks' Lambda	.670	4.557	4.000	37.000	.004	.330	18.230	.912
	Hotelling's Trace	.493	4.557	4.000	37.000	.004	.330	18.230	.912
	Roy's Largest Root	.493	4.557	4.000	37.000	.004	.330	18.230	.912
INTTIMID	Pillai's Trace	.196	2.260	4.000	37.000	.081	.196	9.040	.603
	Wilks' Lambda	.804	2.260	4.000	37.000	.081	.196	9.040	.603
	Hotelling's Trace	.244	2.260	4.000	37.000	.081	.196	9.040	.603
	Roy's Largest Root	.244	2.260	4.000	37.000	.081	.196	9.040	.603
PEERINT	Pillai's Trace	.135	1.441	4.000	37.000	.240	.135	5.762	.402
	Wilks' Lambda	.865	1.441	4.000	37.000	.240	.135	5.762	.402
	Hotelling's Trace	.156	1.441	4.000	37.000	.240	.135	5.762	.402
	Roy's Largest Root	.156	1.441	4.000	37.000	.240	.135	5.762	.402
GENDER	Pillai's Trace	.186	2.115	4.000	37.000	.098	.186	8.459	.570
	Wilks' Lambda	.814	2.115	4.000	37.000	.098	.186	8.459	.570
	Hotelling's Trace	.229	2.115	4.000	37.000	.098	.186	8.459	.570
	Roy's Largest Root	.229	2.115	4.000	37.000	.098	.186	8.459	.570
INTINT	Pillai's Trace	.194	2.226	4.000	37.000	.085	.194	8.905	.595
	Wilks' Lambda	.806	2.226	4.000	37.000	.085	.194	8.905	.595
	Hotelling's Trace	.241	2.226	4.000	37.000	.085	.194	8.905	.595
	Roy's Largest Root	.241	2.226	4.000	37.000	.085	.194	8.905	.595
PEERIND	Pillai's Trace	.076	.758	4.000	37.000	.559	.076	3.031	.220
	Wilks' Lambda	.924	.758	4.000	37.000	.559	.076	3.031	.220
	Hotelling's Trace	.082	.758	4.000	37.000	.559	.076	3.031	.220
	Roy's Largest Root	.082	.758	4.000	37.000	.559	.076	3.031	.220
DRWORDS	Pillai's Trace	.070	.693	4.000	37.000	.602	.070	2.772	.203

Table 19 continued.

Effect		Value	F	Hypothesis df	Error df	Sig.	Eta Squared	Noncent. Parameter	Observed Power
DR WORDS continued	Wilks' Lambda	.930	.693	4.000	37.000	.602	.070	2.772	.203
	Hotelling's Trace	.075	.693	4.000	37.000	.602	.070	2.772	.203
	Roy's Largest Root	.075	.693	4.000	37.000	.602	.070	2.772	.203
INFOSRC	Pillai's Trace	.020	.186	4.000	37.000	.944	.020	.743	.085
	Wilks' Lambda	.980	.186	4.000	37.000	.944	.020	.743	.085
	Hotelling's Trace	.020	.186	4.000	37.000	.944	.020	.743	.085
	Roy's Largest Root	.020	.186	4.000	37.000	.944	.020	.743	.085
INFOSLNT	Pillai's Trace	.084	.847	4.000	37.000	.504	.084	3.389	.244
	Wilks' Lambda	.916	.847	4.000	37.000	.504	.084	3.389	.244
	Hotelling's Trace	.092	.847	4.000	37.000	.504	.084	3.389	.244
	Roy's Largest Root	.092	.847	4.000	37.000	.504	.084	3.389	.244
INFOSRC * INFOSLNT	Pillai's Trace	.027	.260	4.000	37.000	.902	.027	1.038	.100
	Wilks' Lambda	.973	.260	4.000	37.000	.902	.027	1.038	.100
	Hotelling's Trace	.028	.260	4.000	37.000	.902	.027	1.038	.100
	Roy's Largest Root	.028	.260	4.000	37.000	.902	.027	1.038	.100

a Computed using alpha = .05
b Exact statistic
c Design:
Intercept+INTTIMID+PEERINT+GENDER+INTINT+PEERIND+DRWORDS+INFOSRC+INFOSLNT+ INFOSRC * INFOSLNT

MANCOVA Results of Experimental Data

Results from the MANCOVA analyses reported in Table 19 above indicated that there were no statistically significant multivariate relationships in the 2X2 experiment of Information Source for Priming Statements (Own Statements/Matched Participant) X Statement Affective Valence (Positive/Negative). In the multivariate context, this was true for both the Affect DVs (Positive Affect or Negative Affect), or Clinical Inferences DVs (Treatment Success or Patient as Partner), even when controlling for correlated Physician PAFS variables, Physician Gender, and Physician Verbosity. That is, the experimental condition was not the source of any sizable variance in either the student physicians' affective interactions with or clinical inferences about standardized patients. The MANOVA testing for the effect of the experimental interventions on the DVs of interest did not reject the null hypothesis of no difference in means between experimental groups in this study. This is a result most likely due to weakness of intervention and small sample size (which reduces power to detect an already subtle experimental effect).

Univariate ANOVA Results of Experimental Data

The univariate results for the experimental data are included in Table 20 below. These results must be considered circumspect due to the absence of a multivariate main effect in the experiment. In addition, the SPSS 10.0 program does not include a Bonferroni correction for the significance level of these results. According to the SPSS 10.0 output, with no bonferroni correction for Type I error, there are several statistically significant effects between physicians' family of origin/peer relationships (as measured by the Personal Authority in the Family System Questionnaire or PAFS-QVC) and the Clinical Inferences: Likelihood of Treatment Success dependent variable.

Table 20

Univariate ANOVA Results of Experimental Data

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Eta Squared	Noncent. Parameter	Observed Power
Corrected Model	PosAffect	596.706	9	66.301	.749	.662	.144	6.744	.312
	NegAffect	478.499	9	53.167	2.336	.032	.345	21.023	.844
	Clinical Inferences: Tx Success	171.638	9	19.071	2.420	.027	.353	21.779	.859
	Clinical Inferences: Patient as Partner	54.877	9	6.097	.769	.645	.148	6.921	.321
Intercept	PosAffect	14.497	1	14.497	.164	.688	.004	.164	.068
	NegAffect	47.466	1	47.466	2.085	.156	.050	2.085	.291
	Clinical Inferences: Tx Success	73.900	1	73.900	9.377	.004	.190	9.377	.848
	Clinical Inferences: Patient as Partner	133.377	1	133.377	16.822	.000	.296	16.822	.979
INTTIMID	PosAffect	5.127	1	5.127	.058	.811	.001	.058	.056
	NegAffect	.343	1	.343	.015	.903	.000	.015	.052
	Clinical Inferences: Tx Success	70.639	1	70.639	8.963	.005	.183	8.963	.832
	Clinical Inferences: Patient as Partner	1.477	1	1.477	.186	.668	.005	.186	.071
PEERINT	PosAffect	2.918	1	2.918	.033	.857	.001	.033	.054
	NegAffect	.636	1	.636	.028	.868	.001	.028	.053
	Clinical Inferences: Tx Success	42.940	1	42.940	5.449	.025	.120	5.449	.625
	Clinical Inferences: Patient as Partner	1.038	1	1.038	.131	.719	.003	.131	.064
GENDER	PosAffect	90.463	1	90.463	1.022	.318	.025	1.022	.167
	NegAffect	142.263	1	142.263	6.250	.017	.135	6.250	.684
	Clinical Inferences: Tx Success	.941	1	.941	.119	.731	.003	.119	.063
	Clinical Inferences: Patient as Partner	9.300	1	9.300	1.173	.285	.028	1.173	.185
INTINT	PosAffect	73.330	1	73.330	.829	.368	.020	.829	.144
	NegAffect	136.183	1	136.183	5.983	.019	.130	5.983	.665

Table 20 continued.

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Eta Squared	Noncent. Parameter	Observed Power
INTINT	Clinical Inferences: Tx Success	2.045	1	2.045	.259	.613	.006	.259	.079
	Clinical Inferences: Patient as Partner	8.061	1	8.061	1.017	.319	.025	1.017	.166
PEERIND	PosAffect	54.376	1	54.376	.615	.438	.015	.615	.119
	NegAffect	6.429	1	6.429	.282	.598	.007	.282	.081
	Clinical Inferences: Tx Success	3.983E-03	1	3.983E-03	.001	.982	.000	.001	.050
	Clinical Inferences: Patient as Partner	6.748	1	6.748	.851	.362	.021	.851	.147
DRWORDS	PosAffect	88.763	1	88.763	1.003	.323	.024	1.003	.165
	NegAffect	53.570	1	53.570	2.354	.133	.056	2.354	.322
	Clinical Inferences: Tx Success	5.587E-02	1	5.587E-02	.007	.933	.000	.007	.051
	Clinical Inferences: Patient as Partner	6.591	1	6.591	.831	.367	.020	.831	.145
INFOSRC	PosAffect	2.607	1	2.607	.029	.865	.001	.029	.053
	NegAffect	.919	1	.919	.040	.842	.001	.040	.054
	Clinical Inferences: Tx Success	.404	1	.404	.051	.822	.001	.051	.056
	Clinical Inferences: Patient as Partner	5.105	1	5.105	.644	.427	.016	.644	.123
INFOSLNT	PosAffect	5.035	1	5.035	.057	.813	.001	.057	.056
	NegAffect	30.782	1	30.782	1.352	.252	.033	1.352	.206
	Clinical Inferences: Tx Success	7.230	1	7.230	.917	.344	.022	.917	.155
	Clinical Inferences: Patient as Partner	.450	1	.450	.057	.813	.001	.057	.056
INFOSRC * INFOSLNT	PosAffect	2.583	1	2.583	.029	.865	.001	.029	.053
	NegAffect	18.788	1	18.788	.825	.369	.020	.825	.144
	Clinical Inferences: Tx Success	2.628	1	2.628	.333	.567	.008	.333	.087

Table 20 continued.

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Eta Squared	Noncent. Parameter	Observed Power
INFOSRC * INFOSLNT	Clinical Inferences: Patient as Partner	1.837	1	1.837	.232	.633	.006	.232	.076
Error	PosAffect	3539.200	40	88.480					
	NegAffect	910.439	40	22.761					
	Clinical Inferences: Tx Success	315.242	40	7.881					
	Clinical Inferences: Patient as Partner	317.143	40	7.929					
Total	PosAffect	13635.287	50						
	NegAffect	5361.658	50						
	Clinical Inferences: Tx Success	25396.000	50						
	Clinical Inferences: Patient as Partner	15061.000	50						
Corrected Total	PosAffect	4135.906	49						
	NegAffect	1388.938	49						
	Clinical Inferences: Tx Success	486.880	49						
	Clinical Inferences: Patient as Partner	372.020	49						

a Computed using alpha = .05
b R Squared = .144 (Adjusted R Squared = -.048)
c R Squared = .345 (Adjusted R Squared = .197)
d R Squared = .353 (Adjusted R Squared = .207)
e R Squared = .148 (Adjusted R Squared = -.044)

The ANOVAs that were printed as part of the MANOVA SPSS 10.0 output included in Table 20 are considered with the understanding that MANOVA procedures in SPSS 10.0 do NOT take into account that multiple ANOVAs have been conducted by using traditional Bonferroni correction procedures to control Type I error. *Without* Bonferroni corrections, the univariate ANOVA for Intergenerational Intimidation was statistically significant for its effect on Clinical Inferences: Treatment Success F (1, 40) = 8.963, $p < .005$. $R^2 = .14$, as was the variable Peer Intimacy F (1, 40) = 5.449, $p < .05$, $R^2 = .345$. On the other hand, the variables of Gender F (1, 40) = 6.250, $p < .05$, $R^2 = .353$ and Intergenerational Intimacy F (1, 40) = 5.983, $p < .05$, $R^2 = .148$ were significant for their effects on the DV of Negative Affect.

It must be noted again that the MANOVA procedures in SPSS 10.0 do NOT take into account the need for adjustment for Type I error when multiple ANOVAs have been conducted. When traditional Bonferroni correction procedures were used to control Type I error in multiple comparisons, the critical p value for statistical significance in this instance became .0052. Using this standard for statistical significance, only the control variable Intergenerational Intimidation produced a statistically significant mean difference in any of the DVs between experimental groups, and only on the variable of Clinical Inferences: Likelihood of Treatment Success. Data on the dependent variable means of each experimental group are included in Table 21. SPSS 10.0 does not report the means for each experimental group by control variable. The univariate results will not be interpreted here further due to the likelihood that they are due to Type I error.

Table 21

Descriptive Statistics for MANOVA and Between Groups Comparisons

Dependent Variable	Independent Variable I: Patient chart info source	Independent Variable II: Patient chart info valence	Mean	Standard Deviation	N
Positive Affect	own personal statements	positive	14.414	6.623	11
		negative	13.57	12.421	13
		Total	13.957	9.988	24
	matched participant personal statements	positive	14.721	11.021	11
		negative	12.817	6.558	15
		Total	13.623	8.578	26
	Total	positive	14.567	8.874	22
		negative	13.167	9.540	28
		Total	13.783	9.187	50
Negative Affect	own personal statements	positive	9.590	6.922	11
		negative	7.917	4.147	13
		Total	8.684	5.525	24
	matched participant personal statements	positive	8.770	5.313	11
		negative	9.386	5.342	15
		Total	9.125	5.231	26
	Total	positive	9.180	6.036	22
		negative	8.704	4.795	28
		Total	8.913	5.324	50
Clinical inferences: Likelihood of tx success	own personal statements	positive	23.181	3.789	11
		negative	21.846	2.882	13
		Total	22.458	3.322	24
	matched participant personal statements	positive	22.818	2.713	11
		negative	21.733	3.283	15
		Total	22.192	3.046	26
	Total	positive	23.000	3.221	22
		negative	21.785	3.047	28
		Total	22.320	3.152	50
Clinical inferences: Patient as good partner	own personal statements	positive	18.000	2.828	11
		negative	17.153	3.236	13
		Total	17.541	3.021	24
	matched participant personal statements	positive	16.636	2.292	11
		negative	16.866	2.695	15
		Total	16.769	2.486	26
	Total	positive	17.318	2.607	22
		negative	17.000	2.905	28
		Total	17.140	2.755	50

Hierarchical Regression Results

Although the experimental aspect of the study did not produce statistically significant results, the possibility of the covariates acting as important predictors of the dependent variables was of relevance to the final research question. The principal investigator was interested in whether intergenerational family relationships could predict student physicians' affective interactions with and clinical inferences about patients regardless of patient information source or patient information valence.

If intergenerational family relationships predict student physicians' affective interactions and clinical inferences with patients, then social cognitive processes could still be in play in the physician patient relationship while specific social cognitive mechanisms remain unclear. To the end of clarifying these linear predictive relationships between physicians' intergenerational variables and physicians' affective behavior and clinical inferences with patients, four different three-step hierarchical regressions were performed, one on each of the dependent variables of interest in the present study. These dependent variables were: Negative Affect, Positive Affect, PCIS (Likelihood of Treatment Success & Patient as Partner).

The predictor variables for the hierarchical regression analyses were chosen on the basis of their conceptual and empirical relationships with the dependent variables. The predictor variables were entered in exactly the same groupings and order for each of the three-step hierarchical regressions. The groupings and order of variables were as follows: Step One: Gender; Step Two: Gender, Intergenerational Intimacy and Intergenerational Intimidation; Step Three: Gender, Intergenerational Intimacy, Intergenerational Intimidation, Peer Intimacy, and Peer Individuation. Gender was

chosen as the first variable to be entered because of its well-documented implications for interpersonal interactions and affective expression. Intergenerational Intimacy and Intergenerational Intimidation were added in Step Two because of their theoretical importance to the development of interpersonal patterns of communication and affect expression (Sullivan, 1953). Peer Intimacy and Peer Individuation were added in Step Three for similar reasons to the Intergenerational variables, as well as their empirical relationship to the Clinical Inferences and Positive Affect variables (previously suggested in the MANOVA analysis and the bivariate correlation analysis). The investigator felt that peer relationship variables were important variables to examine as predictors of transference effects in affective interactions and clinical inferences, because these variables theoretically should be related to family of origin relationships and gender, but would be more accessible to medical educators for assessment and intervention in medical education environments. Results from the hierarchical regressions are included in Tables 22a to 22d below.

Table 22a

Summary of Hierarchical Regression Analysis for Personal Authority in the Family System Scales Predicting Physician Negative Affect in Medical Interview (n = 57)

Variable	Unstandardized Coefficient B	SEB	Standardized Coefficient β	95% CI for B *lower*	95% CI for B *upper*	Squared Structure Coefficient
Step 1*						
Gender	-2.893	1.5	-.252*	-5.898	.113	1.4
Step 2*						
Gender	-2.159	1.49	-1.88	-5.160	.842	.578
Intergenerational Intimacy	.113	.049	.308**	.016	.210	.33
Intergenerational Intimidation	-.042	.125	-.044	-.293	.209	.01
Step 3						
Gender	-2.28	1.525	-.198	-5.337	.786	.55
Intergenerational Intimacy	.119	.051	.326**	.017	.222	.312
Intergenerational Intimidation	-.058	.129	-.060	-.318	.202	.01
Peer Intimacy	-.065	.108	-.080	-.282	.152	.006
Peer Individuation	.083	.182	.002	-.281	.449	.008

*p <.05; ** p <.025
Note
Model 1: R = .252; R^2 = .063, p ≤ .059, R^2 change = .063, p ≤ .059;
Model 2: R = .402; R^2 = .162, p ≤ .024, R^2 change = .099, p ≤ .053;
Model 3: R = .416; R^2 = .173, p ≤ .077, R^2 change = .011, p ≤ .717

The data for the first hierarchical regression is included in Table 22a. In the first hierarchical regression the predictor variables of Gender, Intergenerational Intimacy, Intergenerational Intimidation, Peer Intimacy and Peer Individuation were regressed onto the dependent variable of Negative Affect. The final R^2 effect size of .173 indicated that together all five of the predictor variables could account for seventeen percent (17%) of the variance in Negative Affect expressed by the physicians in the medical interviews with standardized patients: this is considered a moderate effect size in behavioral science research. Of the five variables, Gender (β ranging from -.252 to $\beta = .198$) had a large and highly statistically significant contribution, as intergenerational and peer relationship variables were added. In Step Two Intergenerational Intimacy made a statistically significant contribution to the R^2 effect size of the predictor variables on Negative Affect (Step Two $R^2 = .16$) with a β weight of .326. In Step Three of the regression onto Negative Affect Intergenerational Intimacy appeared to make the largest contribution to the final R^2 effect size of .173, with a weight of $\beta = .326$.

Table 22b Summary of Hierarchical Regression Analysis for Personal Authority in the
Family System Scales Predicting Physician Positive Affect in Medical Interview (n = 57)

Variable	Unstandardized Coefficient B	SEB	Standardized Coefficient β	95% CI for B *lower*	95% CI for B *upper*	Squared Structure Coefficient
Step 1						
Gender	4.239	2.541	.219	-.854	9.331	.512
Step 2						
Gender	3.749	2.655	.194	-1.575	9.074	.378
Intergenerational Intimacy	-.0783	.086	-.127	-.251	.094	.523
Intergenerational Intimidation	.0479	.222	.030	-.398	.494	.157
Step 3						
Gender	3.666	2.669	.19	-1.693	9.025	.24
Intergenerational Intimacy	-.0449	.089	-.073	-.224	.134	.336
Intergenerational Intimidation	.0420	.226	.026	-.412	.497	.10
Peer Intimacy	-.0119	.189	-.009	-.391	.368	.045
Peer Individuation	.452	.318	.198	-.187	1.091	.57

*p <.05
Note:
Model 1: $R = .219$; $R^2 = .048$, $p \leq .101$; R^2 change = .101, p ≤ .048;
Model 2: $R = .257$; $R^2 = .066$, $p \leq .301$; R^2 change = .018, p ≤ .603;
Model 3: $R = .321$; $R^2 = .103$, $p \leq .337$; R^2 change = .037, p ≤ .360

The data for the second hierarchical regression is included in Table 22b. In the second hierarchical regression the predictor variables were regressed onto the dependent variable of Positive Affect. The R^2 effect size of .103 indicated that together all five of the predictor variables could account for ten percent of the variance in Positive Affect in medical interviews: this is considered a small effect size. Of the five variables, Gender (β ranging from .19 to .219) was assigned the most weight in contributing to the variance explained and alone produced an effect size of 5%. Peer Individuation ($\beta =$ .198) made a contribution similar to that of Gender; together with Peer Intimacy, Peer Individuation increased the effect of the predictor variables on Positive Affect from $R^2 =$ 6.6% in Step Two to $R^2 =$ 10.3% in Step Three. The results of this regression suggest that the predictor variables of Gender, Intergenerational Intimacy and Individuation, and Peer Intimacy and Individuation may have been part of the transference equation for the physicians in interactions between student physicians and standardized patients, insofar as transference was expressed by the physicians as Positive Affect (Interest, Hope, Validation, Caring/Affection, Humor).

Table 22c Summary of Hierarchical Regression Analysis for Personal Authority in the Family System scales predicting Physician Clinical Inferences: Likelihood of Treatment Success in Medical Interview (n = 57)

Variable	Unstandardized Coefficient B	SEB	Standardized Coefficient β	95% CI for B *lower*	95% CI for B *upper*	Squared Structure Coefficient
Step 1						
Gender	.126	.905	.019	-1.688	1.94	16.0
Step 2*						
Gender	.384	.901	.057	-1.424	2.191	.067
Intergenerational Intimacy	.00819	.029	.038	-.050	.067	.10
Intergenerational Intimidation	.191	.075	.338*	.039	.342	.757
Step 3*						
Gender	.112	.860	.017	-1.615	1.838	.03
Intergenerational Intimacy	.006	.029	.030	-.051	.064	.048
Intergenerational Intimidation	.15	.073	.267*	.004	.297	3.27
Peer Intimacy	-.172	.061	-.359*	-.294	-.050	.70
Peer Individuation	-.0277	.103	-.035	-.234	.178	.04

*p <.05

Note:

Model 1: $R = .019$; $R^2 = .000$, $p \leq .890$; R^2 change = .000, $p \leq .89$;

Model 2: $R = .331$; $R^2 = .109$, $p \leq .047$; R^2 change = .109, $p \leq .047$;

Model 3: $R = .480$; $R^2 = .23$, $p \leq .025$; R^2 change = .120, $p \leq .025$

The results for the third hierarchical regression are included in Table 22c. In the third hierarchical regression the predictor variables were regressed onto the dependent variable of Clinical Inferences: Likelihood of Treatment Success. The final R^2 effect size of .23 indicated that together all five of the predictor variables could account for twenty-three percent of the variance in Positive Affect in medical interviews: this is considered a moderate effect size. Of the five variables, Intergenerational Intimidation (β ranging from .267 to .338) was assigned the most weight in contributing to the total variance in expectations of treatment success explained by the predictors. Peer Intimacy also contributed a β weight of -.359 in the final step of the regression. Notably, Gender had a β of almost zero at every step in the equation (β ranging from .017 to .059) which may indicate either no relationship to the DV, or that Gender works as a suppressor variable for other variables in the equation through its correlation with other predictor variables.

Table 22d Summary of Hierarchical Regression Analysis for Personal Authority in the Family System scales predicting Physician Clinical Inferences: Patient as Partner in Medical Interview (n = 57)

Variable	Unstandardized Coefficient B	SEB	Standardized Coefficient β	95% CI for B *lower*	95% CI for B *upper*	Squared Structure Coefficient
Step 1						
Gender	.852	.724	.157	-.599	2.302	.64
Step 2						
Gender	.82	.744	.151	-.672	2.312	.375
Intergenerational Intimacy	-.0399	.027	-.230	-.093	.014	.425
Intergenerational Intimidation	-.0859	.066	-.200	-.29	.047	.014
Step 3						
Gender	.750	.742	.138	-.740	2.24	.140
Intergenerational Intimacy	-.0454	.027	-.262	-.099	.009	.158
Intergenerational Intimidation	-.0835	.069	-.195	-.221	.054	.005
Peer Intimacy	-.0656	.052	-.170	-.171	.040	.168
Peer Individuation	-.0996	.091	-.155	-.282	.083	.266

*p <.05
Note:
Model 1: R = .157; R^2 = .025, $p \leq$ .244; R^2 change = .025, $p \leq$ .244
Model 2: R = .267; R^2 = .072, $p \leq$ .265; R^2 change = .017, $p \leq$ .271
Model 3: R = .339; R^2 = .115, $p \leq$ .268.; R^2 change = .048, $p \leq$ .294

The results for the fourth hierarchical regression analysis are included in Table 22d. In the fourth and final hierarchical regression the predictor variables were regressed onto the dependent variable of Clinical Inferences: Patient as Partner. The final R^2 effect size of .115 indicated that together all five of the predictor variables could account for twelve percent (12%) of the variance in Clinical Inferences (Patient as Partner) in the medical interviews between student physicians and standardized patients: this is considered a small effect size in behavioral science research. Intergenerational Intimacy had the largest β weight of -.262, followed by Intergenerational Intimidation with a β weight of -.195. Peer relationships also made an impact on student physicians' perceptions of their patients as partners in the medical interview, with Peer Intimacy and Peer Individuation making contributions of $\beta = -.170$ and $\beta = -.155$ respectively.

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

Research question number one in the present study was: Is a student physicians'

affective tone in a medical interview influenced by triggered significant other

representations? Research question number one had two sub-questions: 1a and 1b.

Question 1a asked whether there would be a difference in the affective tone of physician

patient interactions between conditions based on the priming of student physicians' own

versus a matched participants' significant other representations. Question 1b asked

whether the priming of positive or negative significant other representations. Questions

1a and 1b were answered using a 2 x 2 MANOVA controlling for participant gender,

physician verbosity, and PAFS-QVC variables. Results of the 2x2 MANOVA indicated

that there was no statistically significant difference between experimental groups in either

positive or negative affect based on the priming of student physicians' own versus a

matched participants' significant other representation, or the priming of positive or

negative significant other representations. These results indicate that with respect to the

experimental manipulation of social cognition, there was no statistically significant

difference found between experimental groups when they were exposed to statements in

the mock medical chart that were positive or negative. Likewise there was no statistically

significant difference found between experimental groups when they were exposed to

statements in the mock medical chart that were drawn from either the student physician's

own personal history or from the history of a matched participant. The answer to

research questions 1a and 1b is that the social cognitive paradigm as exported to this

particular field setting did not detect a significant difference between groups that is attributable to the experimental manipulation. However, the larger omnibus question of whether the affective tone of the physician-patient interview was influenced by triggered significant other representations in the physician, remains open for questioning. This is because ot the strong predictive value of the intergenerational and peer relationship variables in accounting for several aspects of student physicians' affective behavior and clinical inferences with standardized patients. The hierarchical regressions performed between the PAFS-QVC scales and the cumulative positive and negative affects detected by the SPAFF-16 Coding System, suggested that there may have been transference effects expressed in affective interactions with and clinical inferences about patients. However these transference effects may not have been produced by the experimental manipulation. Rather, these transference results may have been produced by strong and salient aspects of the intergenerational relationships between student physicians and their significant others, that were triggered by the content and process of the standardized patient scenario and interview. These results will be discussed in the section on research question number three.

Research question number two was: Is the clinical inferences of the student physician influenced by triggered significant other representations? More specifically,

a.　　　Is there a difference in clinical inferences when a student physician's own, rather than a matched participant's, significant other representations are activated?

b.　　　Is there a difference in clinical inferences when a student physician's positive rather than negative significant other representations are activated?

Questions 2a and 2b were answered using a 2 x 2 MANOVA controlling for participant gender and PAFS-QVC variables. Results of the 2x2 MANOVA indicated that there was no statistically significant difference between experimental groups in terms of clinical inferences about patients based on the priming of participants' own versus a matched participants' significant other representation, or the priming of positive or negative significant other representations. The results indicated that with respect to the experimental manipulation of social cognition, there was no statistically or clinically significant difference found between experimental groups on the dependent variable of clinical inferences when student physicians were exposed to statements in the mock medical chart that were either positive or negative. Likewise, there was no statistically or clinically significant difference found between experimental groups on the dependent variable of clinical inferences when participants were exposed to statements in the mock medical chart that were drawn from either the student physician's own personal history, or from the history of a matched participant. The answer to research questions 2a and 2b is that the social cognitive paradigm as exported to a field setting did not detect a significant difference in clinical inferences between groups that is attributable to the experimental manipulation. However, the larger omnibus question of whether the clinical

inferences of the physician-patient interview was influenced by triggered significant other representations in the physician, remains open for questioning. The hierarchical regressions performed between the PAFS-QVC scales and physicians' clinical inferences, as measured by the Physician Clinical Inferences Scale (PCIS), suggested that there may have been transference effects expressed in physicians' clinical inferences about patients. However these transference effects may not have been produced by the experimental manipulation. Rather, these transference results may have been produced by strong and salient aspects of the intergenerational relationships between the student physicians and their significant others that were triggered by the content and process of the standardized patient scenario and interview. As stated previously, these results will be discussed further in research question number three.

Research question number three asked whether intergenerational family relationships, specifically individuation from significant others as measured by participants' PAFS-QVC scores, could predict transference effects on student physicians' affective interactions and clinical inferences with patients. This question was addressed in several ways. First, PAFS-QVC scores were included as covariates in a MANOVA of the experimental results. In the MANOVA analysis, no significant effect was detected between experimental conditions when PAFS-QVC scales were included as covariates.

The ANOVAs that were printed as part of the MANOVA SPSS 10.0 output are only briefly mentioned here with the understanding that MANOVA procedures in SPSS 10.0 do not take into account that multiple ANOVAs have been conducted by using traditional Bonferroni correction procedures to control Type I error. In addition, the investigator feels that extensive interpretation of univariate results in the absence of a

multivariate main effect is an inappropriate use of data. Most covariates identified as statistically significant in the initial SPSS 10.0 univariate results, no longer met the criteria for statistical significance when a Bonferroni correction for number of univariate tests changed the significance level to .005. The following result was the only covariate that suggested a main effect between experimental groups on a dependent variable when Bonferroni corrections for Type I error were performed. In the univariate ANOVAs included as part of the MANOVA analysis in SPSS 10.0, with Bonferroni corrections performed post hoc, Intergenerational Intimidation was statistically significant for its effect on Clinical Inferences: Treatment Success $F(1, 40) = 8.963$, $p < .005$. $R^2 = .14$. This result may imply that the degree of intimidating control exerted by parents over student physicians in student physicians' intergenerational family relationships somewhat negatively impacted ($R^2 = .14$) student physicians' optimism about their patients' prognosis.

Apart from tests of experimental effects, student physicians' intergenerational family relationships appeared to predict transference effects on student physicians' affective interactions and clinical inferences with patients as expected from previous studies of therapist and patient interpersonal factors in psychotherapy (Hilliard, Henry & Strupp, 2000) . The usefulness of intergenerational family relationship variables as predictors of transference effects was explored through a series of four hierarchical regression analyses of PAFS-QVC scores onto SPAFF-16 ratings of positive or negative affect and physicians' clinical inferences scores (Treatment Success or Patient as Partner). Results indicated that several PAFS-QVC scores did significantly predict some

aspects of physicians' affective interactions and clinical inferences about patients. Discussion of these results follows below.

In the first hierarchical regression analysis the variable of Gender, and the PAFS-QVC variables of Intergenerational Intimacy, Intergenerational Intimidation, Peer Intimacy and Peer Individuation were regressed onto the SPAFF-16 derived dependent variable of Negative Affect (defined as contempt, domination and control, anger, defensiveness, whining, sadness, stonewalling, and fear/tension/anxiety). The final R^2 effect size of .173 indicated that together all five of the predictor variables could account for almost seventeen percent (17%) of the variance in Negative Affect expressed by the physicians in the medical interviews with standardized patients. These results may indicate that gender and intergenerational intimacy have an impact on the degree of negative affect (defined as contempt, domination and control, anger, defensiveness, whining, sadness, stonewalling, and fear/tension/anxiety) expressed by student physicians in a medical interview. The variables that appeared to make the largest contribution to the expression of negative affect were Gender and Intergenerational Intimacy, with standardized weights of $\beta = -.198$, and $\beta = .326$ respectively. These results suggest that the degree of intimacy between parents and student physicians was a predictor of student physicians' expressions of negative affect in medical interviews.

In the second hierarchical regression the variable of Gender, and the PAFS-QVC predictor variables of Intergenerational Intimacy, Intergenerational Intimidation, Peer Intimacy and Peer Individuation were regressed onto the SPAFF-16 derived dependent variable of Positive Affect. Positive Affect consists of the SPAFF-16 categories of: interest, affection/caring, humor, delight/excitement/surprise, and validation. The R^2

effect size of .103 indicated that together all five of the PAFS-QVC predictor variables could account for ten percent of the variance in Positive Affect in medical interviews: this is considered a small effect size. Of the five variables, Gender (β ranging from .19 to .219) was assigned the most weight in contributing to the variance explained and alone produced an effect size of 5%. These results present interesting possibilities regarding the socialization of positive affect. That is, socialization in intergenerational family relationships may include overt modeling and teaching about what defines appropriately positive social behavior. This socialization may be particularly strong for women, a hypothesis that is borne out by previous research on gender differences in expression of affect, and the present results in which gender was the most powerful predictor of expression of positive affect.

In the third regression analysis the variables of Gender, and the PAFS-QVC predictor variables of Intergenerational Intimacy, Intergenerational Intimidation, Peer Intimacy and Peer Individuation were regressed onto the dependent variable of Clinical Inferences: Likelihood of Treatment Success. The final R^2 effect size of .23 indicated that together all five of the predictor variables could predict twenty-three percent of the variance in a student physician's clinical inferences about their patient's prognosis in a medical interview: this is considered a moderate effect size. Of the five variables, Intergenerational Intimidation (β ranging from .267 to .338) was assigned the most weight in contributing to the total variance in expectations of treatment success explained by the predictors. Peer Intimacy also contributed a β weight of -.359 in the final step of the regression. Notably, Gender had a β of almost zero at every step in the equation (β ranging from .017 to .059) which may indicate either no relationship to the DV, or

that Gender works as a suppressor variable for other variables in the equation through its correlation with other predictor variables.

These results suggest patterns of intergenerational family relationships characterized by high degrees of control and intimidation predicted student physicians' clinical inferences that there would be a poor likelihood of treatment success with their patients. However close peer relationships also appeared to influence student physicians' expectations of treatment consequences. These results present an opportunity for a host of interpretations regarding the degree to which clinical expectations of a good prognosis are related to student physicians' own needs for control, or student physicians' own tendencies to be determined in their efforts for mastery, even in providing medical treatment. In addition, these results suggest that peer relationships may deserve attention in the medical curriculum as they can influence physicians' clinical inferences made about patients' care.

In the fourth and final hierarchical regression the variables of Gender, and the PAFS-QVC predictor variables of Intergenerational Intimacy, Intergenerational Intimidation, Peer Intimacy and Peer Individuation were regressed onto the dependent variable of Clinical Inferences: Patient as Partner. The final R^2 effect size of .339 indicated that together all five of the predictor variables could account for thirty-four percent (12%) of the variance in Clinical Inferences (Patient as Partner) in the medical interviews between student physicians and standardized patients: this is considered a small effect size in behavioral science research, but may be of clinical importance given the stakes in medical inferences and physician decision making about patient care. Intergenerational Intimacy had the largest β weight of -.262, followed by

Intergenerational Intimidation with a β weight of -.195. Peer relationships also made an impact on student physicians' perceptions of their patients as partners in the medical interview, with Peer Intimacy and Peer Individuation making contributions of $\beta = -.170$ and $\beta = -.155$ respectively.

These results may suggest that student physicians' clinical inferences about the partner aspect of their relationship with patients may be predicted by a combination of intergenerational and peer relationship variables. That is, the degrees of affiliation and control experienced by student physicians in their intergenerational family relationships appeared to exert a very strong influence on how student physicians perceived the collaborative aspect of the physician patient relationship. Encouragingly, the degree of intimacy with differentiation in peer relationships also appeared to predict on how student physicians perceived the collaborative aspect of the physician patient relationship.

Conclusions

In conclusion, the present study provided inconclusive evidence for three of the hypotheses generated, and powerful supportive evidence for the fourth and final hypothesis. The first hypothesis for this study suggested that experimentally-induced transference, defined as priming of significant other representations through the introduction of statements into a mock medical chart, would have a main effect on student physicians' affective behavior and clinical inferences with patients. This hypothesis was not supported in the present experimental study.

The second hypothesis in this study suggested that there would be an interaction between the experimental conditions of primed positive and negative significant other representations and participants' own versus matched participant's significant other

representations. This interaction was expected to impact student physicians' affective behavior in interactions with standardized patients. That is, primed representations of positive significant others, when they were the participant's own versus that of a matched participant, were expected to exert the strongest effect on student physicians' affective behavior and clinical inferences with patients. This hypothesis was not supported in the present experimental study.

The third hypothesis in this study anticipated that there would be an interaction between the conditions of primed positive and negative significant other representations, and a participant's own versus a matched participant's significant other representations. This interaction would impact participants' clinical inferences about standardized patients. That is, primed representations of positive significant others, when they were a participant's own versus that of a matched participant, were hypothesized to exert the strongest effect on clinical inferences about patients in terms of hope for prognosis, perceptions of patient reporting accuracy and compliance etc. Also, a participant's *own* positive representation of a significant other would exert a stronger effect than the positive representation of a matched participant's significant other. This hypothesis was not supported in the present experimental study.

The fourth hypothesis in this study anticipated that transference effects on student physicians' affective interactions and clinical inferences with patients could be predicted by student physicians degree of differentiation with intimacy in their intergenerational and peer relationships. Specifically, it was hypothesized that negative transference effects might be weaker for those physicians who had individuated successfully from their family of origin and other significant relationships, due to an enhanced ability to

recognize, integrate, and manage transference induced responses. This hypothesis found some support in the results of four hierarchical regressions performed in which the variables of intergenerational intimacy, intergenerational intimidation, peer intimacy, peer individuation, and gender were used to predict the affect and clinical inferences dependent variables.

Regarding affect, the family-of-origin and peer relationship variables were able to predict a small but important portion of the variance in positive affect, indicating that positive family and peer relationships may indeed produce some positive transference effects in student physicians' affective interactions with patients. The researcher hypothesized that there may have been some ceiling effects with a highly socialized study population, or that in general the experimental situation was conducive to role-appropriate positive affect. Regarding negative affect, family of origin and peer relationship variables exerted a very strong effect on student physicians' expression of negative affect, with peer intimacy and individuation as well as intergenerational intimidation making the strongest contribution. Intergenerational intimidation appeared to exacerbate transference effects on negative affect in student physicians' interactions with patients. Peer intimacy and individuation strongly predicted negative affect.

Regarding clinical inferences, the family-of-origin and peer relationship variables were able to predict a moderate proportion of the variance in student physicians' expectations of treatment success. Intergenerational intimidation again played an important role in this effect, as did peer intimacy. Apparently student physicians with family histories low in control and intimidation were more optimistic regarding treatment success, whereas student physicians with family histories high in control and intimidation

were more pessimistic regarding treatment success. This finding suggests that developmental factors can indeed exert an effect on thinking and expectations in the physician patient relationship. The more puzzling result here is the peer intimacy variable, in which low peer intimacy reflected high expectations of treatment success or in which high peer intimacy reflected low expectations of treatment success. The family of origin and peer relationship variables predicted a moderate to large proportion of the variance in student physicians' clinical inferences about patients as partners. Apparently high intergenerational intimacy may have influenced perceptions of the patient as less of a partner in the treatment relationship, as measured by the PCIS.

Results for the present study indicated that Andersen's social cognitive experimental paradigm for evaluating transference effects, when transported from the laboratory to a controlled medical interview setting in which student physicians conducted interviews with standardized patients, did not detect any statistically significant differences between experimental groups. That is, when participants were presented with either positive or negative statements about their patients in a mock medical chart, no statistically significant differences between experimental groups were detected in terms of affective interactions (positive or negative affect) or clinical inferences (likelihood of treatment success or patient as partner). Likewise, when participants were presented with statements about their patients that were drawn either from their own or a matched participant's experience, no statistically significant differences between experimental groups were detected in terms of affective interactions (positive or negative affect) or clinical inferences (likelihood of treatment success or patient as partner). These results were consistent even when controlling for correlated

variables such as Gender, Physician Verbosity, and intergenerational family relationship variables as measured by the PAFS-QVC including: Intergenerational Intimidation, Intergenerational Intimacy, Peer Individuation and Peer Intimacy. However, the fourth hypothesis in the study did find some support in the present study. That is, developmental variables including relationships with family of origin and significant others, and an individual's level of differentiation with intimacy with respect to these relationships, appeared to predict transference based variance in student physicians' affective interactions and clinical inferences with patients.

Discussion

One of the goals of this study was to examine whether Andersen's social cognitive paradigm for studying transference might elucidate the mechanisms of transference in the physician patient relationship, and provide evidence for how transference may be expressed in student physicians' affective behavior and clinical inferences with patients. In addition, the researcher hoped to understand whether developmental variables could predict the effects of transference in student physicians' clinical inferences and affective interactions with standardized patients. Clearly the present study did not find evidence for the usefulness of Andersen's social cognitive experimental paradigm for elucidating the mechanisms of transference in the particular context under examination. However, the absence of statistically significant evidence in the use of Andersen's experimental paradigm for studying a social cognitive model of transference does not disconfirm the validity of a social cognitive model of transference. If it is true, as the social cognitive model posits, that transference consists of affect, inferences, and interpersonal behavior with new people based on the activation and

application of mental representations of significant others, and if it is true that transference in social cognitive terms is "going beyond the information given" (Andersen & Glassman, 1996), then this study provides several interesting empirical observations that support the social cognitive model of transference.

The final hypothesis in the study was that transference effects would be predicted by intergenerational family relationships. Specifically, it was hypothesized that negative transference effects would be weaker for those participants who had differentiated successfully from their nuclear family and family of origin, or achieved personal authority (differentiation with intimacy) in their development (Bowen, 1978; Williamson, 1991). This way of thinking about personal authority as a possible means of transforming transference-based cognitive and affective responses, is grounded in the concept of personal authority in the family system (PAFS) developed by Williamson (1991). To review, intergenerational family theory emphasizes the importance of the family of origin and its influence on other intimacy demanding situations both in and beyond the family (Williamson, 1981). Bowen held that the family of origin continues its influence with or without family contact, into one's current relationships (Harvey & Bray, 1991; Harvey, Curry, & Bray, 1991; Kerr & Bowen, 1988). Bowen (1978) held that one's level of differentiation is transmitted across generations by interactional processes between family members, especially between parents and children. Through the differentiation process, a person becomes increasingly autonomous (i.e., self-determined and less automatically governed by relationships) from one's emotional relational contexts (Bowen, 1978; Kerr & Bowen, 1988), the major ones being the family of origin, nuclear family, and later occupational and peer relationships. Personal authority in the

family system represents a higher order of differentiation that emphasizes the need to balance the inherent tension between individuation (or differentiation) and intimacy within the family of origin (Williamson, 1991). Of particular relevance to the present study, differentiation with intimacy (PAFS) affects not only family relationships but also significant relationships beyond the family, including one's professional identity and work setting

A goal of the present study was to explore the possibilities for transformation of transference effects on student physicians' affective interactions and clinical inferences with patients through a deeper understanding of the developmental influences that mediate transference-based processes. Therefore, the theoretical inferences behind the final hypothesis in the present study was that individuals who have achieved differentiation with intimacy (PAFS) would be able to: a) recognize when they were thinking about and reacting to a person based on memories of past experiences with other people rather than information from their experience in the present, b) become aware of their own autonomy and power of choice in an intimacy-demanding situation, as well as their preferred alternatives for responding to social information based on a differentiated set of personal values, and then c) initiate patterns of thinking and responding to a new person based on an accurate assessment of present information, rather than reactive patterns based on past experiences with other people.

In these terms, transference processes were evident in student physicians' clinical inferences and affective interactions with standardized patients. The evidence for this statement may be found in the hierarchical regression results in the present study. The present results may provide tentative support for an integrated transformation model of

transference that integrates personal authority in the family system and Andersen's social cognitive theory of transference. A view of transference based on an integration of social cognitive and intergenerational family theory suggests that activated representations of significant others in memory, contrary to a purely social cognitive model, do not automatically lead to "going beyond the information given" in present day interactions. Rather, the present study's model of transference suggests that social cognitive processes underlying transference effects in present day relationships may be transformed by an individual's developmental process. Full personal authority in significant relationships could lead to an ability to transform signals from activated representations of significant others. The development of personal authority could allow an individual to interrupt automated, reactive pathways of thinking and affective response, to apply awareness and free choice to thinking and affective response, consequently allowing interactions with others to be based on present day information rather than "going beyond the information given" and applying old constructs of significant other relationships to a new person. In this manner personal authority could serve as an antidote to any potentially negative effects of social cognitive processes of transference.

The integrated transformation model of transference (ITMT) is illustrated in Figure 7.

Figure 7

Integrated Transformation Model of Transference (ITMT)

Absence of   Optimal
Differentiation with Intimacy   Differentiation with Intimacy
in Significant Relationships   in Significant Relationships

←---*Present Developmental Process---*→

↕

Activated
Representations
←*Past Focus/Restricted Choices-----------of-------------Present Focus/Many Choices*→
Significant Others
in Memory

↕

←------*Consequences in Present Social Interaction-----*→

Reactivity in   Responsiveness in
Thoughts and Emotions in   Thoughts and Emotions in
Present Social Interactions   Present Social Interactions
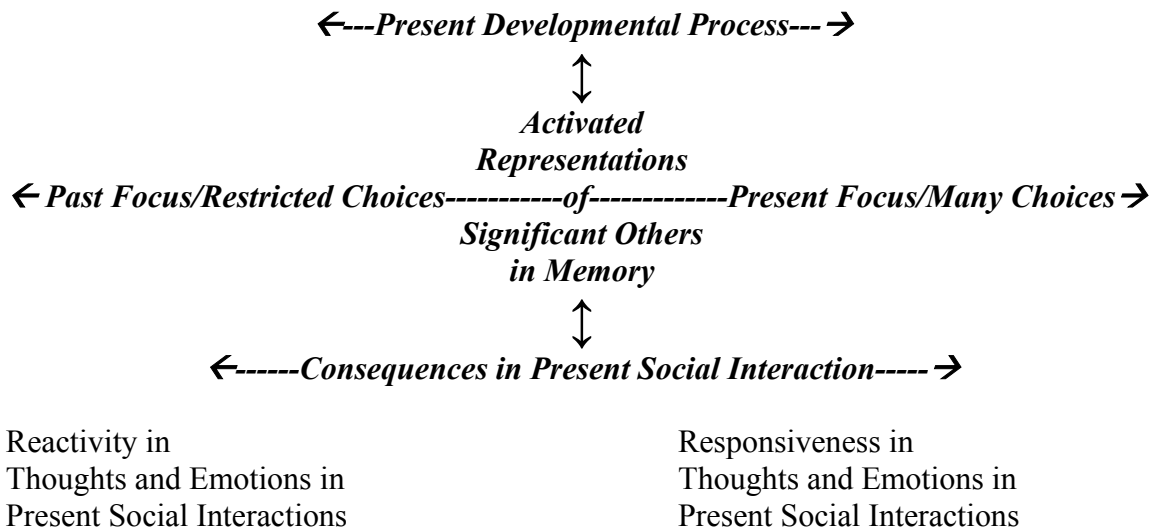
Andersen's research on a social cognitive model of transference is generally focused in the lower left portion of the ITMT, and does not tend to hypotheses about antidotes to the chronic activation of readily available constructs of significant other relationships, tending to focus instead on verification of the specific cognitive and behavioral manifestations of activated constructs of significant others in memory. By contrast, intergenerational family theory is often concerned with the upper left corner of the ITMT.

The present study integrated Andersen's social cognitive focus on the mechanism of transference, with a concept (PAFS) from a theory (intergenerational family theory) that identifies the developmental influences of specific patterns in relationships with significant others, specifically the family of origin. Through the integration of these two viewpoints, the present study hoped to illuminate how patterns of intergenerational family relationships may intensify or alleviate cognitive and emotional manifestations of a social cognitive process of transference in the physician patient relationship. In particular, this study was interested in whether differentiation with intimacy could be an antidote to the automaticity of negative thoughts and behaviors triggered by the activation of chronically available representations of significant others. As eminent neurologist of emotion and reason, Antonio Damasio has stated: "consciousness buys an enlarged protection policy" or more specifically "being conscious of emotions offers you flexibility of response based on the particular history of your interactions with the environment" (Damasio, 2000, p. 133).

The experimental aspect of the present study did not produce detectable effects in the manipulation of social cognitive information intended to activate chronically

available representations of significant others, with intergenerational family relationship variables included as covariates. However it is the intergenerational family relationship variables that have provided interesting hierarchical regression results regarding possible transference effects on student physicians' affective interactions and clinical inferences with patients. That is, the present study found important variations in the clinical inferences and affective interactions of student physicians that could be predicted by the developmental influences of patterns in intergenerational family relationships, gender, and individuation in peer relationships. The primary weakness in these results is that they are difficult to manipulate in an experimental paradigm, leaving their mechanism of action difficult to verify. That is, the process at the center of a social cognitive model of transference: the activation of chronically available representations of significant others, remained a black box in the present study due to the absence of statistically significant results in the experimental portion of the study.

Despite the lack of clarity on the mechanism of action in transference effects on student physicians and their affective interactions and clinical inferences with patients, the present study provided valuable support for the social cognitive contention by Reis and Downey (1999) that "thinking is for relating". That is, thought processes, even in the professional context of clinical medicine, are highly responsive to social information, are designed to maximize survival through connection, and function to minimize the distress of disconnection. It is logical then that student physicians' patterns of thought and emotion in the physician patient relationship are highly responsive to learning from relationships both past and present. The tendency of student physicians to rely on past relationships as a processing shortcut when making clinical inferences and affectively

responding to their patients was clear in the present study. These results support the social cognitive model of transference in which transference is defined as going beyond the information directly presented in a social interaction.

Regarding the effect of intergenerational family relationships on transference processes that are expressed through student physicians' affective interactions and clinical inferences with patients, the results suggested that physicians' internalized constructs of intergenerational "dynamisms" (Evans, 1996), measured as physicians' PAFS-QVC self reports of their intergenerational family relationships, had a measurable effect on student physicians' expressions of negative and positive affect in their interactions with patients. Seventeen percent (17%) of the variance in negative affect (defined as the SPAFF-16 categories of contempt, domination and control, anger, defensiveness, whining, sadness, stonewalling, and fear/tension/anxiety) expressed by student physicians could be explained by the variables of gender, and intergenerational intimacy. Gender, and the degree of closeness in intergenerational family relationships (intimacy) were the most important predictors of expression of negative affect in hierarchical regression analyses.

These results on the importance of intergenerational family relationships in student physicians' expression of negative affect in a medical interview appear to support previous research on the importance of family of origin relationships in the development of emotional regulation. Dawson, Frey, Panagiotides, Yamada, Hessl and Osterling (1999) showed that by one year of age, infants whose mothers are depressed have lower activation in the left frontal lobe, a pattern consistent with that of their mother. That is, patterns of emotional intimacy and connection within the family of origin may influence

unconscious patterns of emotional responding and thought in present social interactions. This may be true even in situations where individuals experience highly defined role demands, as in the physician role in clinical medicine, and are highly trained in specific methods of responding, as in Lawson and Brossart's (2003) study of counseling psychologists in training.

In the present study, patterns of intimacy and connection in intergenerational family relationships, combined with gender, influenced the degree to which student physicians expressed negative affect in interviews with standardized patients. Apparently, student physicians may have reproduced with their patients patterns similar to the patterns they reported experiencing in intergenerational family relationships. Alternatively, it is also possible that present day skills in relationships with important significant others, including skills in maintaining intimacy with differentiation, had an important influence on student physicians' ability to transform the potentially destructive impact of their negative affects in the medical interview, allowing student physicians to tolerate awareness of negative affect, and to choose a non-reactive stance in which responsive and skillful interactions modulated the destructive elements of negative affects.

The relationship between patterns in student physicians' relationships with significant others and affect expressed in a medical interview are somewhat more puzzling regarding positive affect. Intergenerational and peer relationship variables appeared to have a weaker effect on physicians' expression of positive affect in hierarchical regression analyses. Gender was assigned the most weight in contributing to the variance explained in Positive Affect and alone produced an effect size of 5%. It is

possible that with regards to the expression of positive affect in a medical interview, the highly developed socialization of most student physicians came into play. That is, socialization processes are much better at teaching children how to express positive emotion ("smile!" "Be nice!") than they are at teaching children how to transform negative emotions. In particular, women are gender socialized to avoid expressions of negative affect (Davis, 1995), therefore some of the present results of the impact of intergenerational patterns on positive emotion could be expected given previous research in this area. Also interesting are the contributions of the predictors of intergenerational intimacy and peer individuation to student physicians' expressions of positive affect. Although intergenerational intimacy has a small beta weight, it has a squared structure coefficient close to that of gender when peer variables are added in the third step of the model. Peer individuation also made a strong contribution to student physicians' expressions of positive affect, suggesting that a student physician's level of individuation in peer relationships may be an important developmental factor in whether or not negative transference effects can be transformed in physician patient interactions.

Regarding the effect of intergenerational family relationships on transference processes expressed through student physicians' clinical inferences with patients, the results were also quite clear: intergenerational family relationships had a statistically significant effect on student physicians' clinical inferences about the likelihood of treatment success. These results suggest that there may be a transference effect in which present intergenerational family relationships and present level of individuation in peer relationships may impact student physicians' clinical inferences about the likelihood of treatment success. These results are moderately powerful statistically, and may be

clinically significant evidence of the potential for past significant relationships to influence how student physicians "go beyond the information given" and reason about the likelihood of treatment success in ways that are perhaps more related to past experiences in relationships than to the information presented to them by their patients. Regarding the effect of intergenerational family relationships and peer relationships on student physicians' clinical inferences about their patients as partners in the treatment process, the present study found a more muted effect on student physicians' perceptions of patients as partners in the treatment relationship the predictor variables could account for twelve percent (12%) of the variance in Clinical Inferences (Patient as Partner) in the medical interviews between student physicians and standardized patients.

Intergenerational intimidation and peer intimacy were the most important variables in explaining student physicians' expectations of treatment success. These results suggest that student physicians who experienced patterns of intergenerational family relationships characterized by high degrees of control and intimidation tended to reason clinically that there would be a low likelihood of treatment success with their patients. This presents an opportunity for a host of interpretations regarding the degree to which clinical expectations of a poor prognosis are related to student physicians' own needs for control. It is possible that the pattern of intimidation in intergenerational family relationships was associated with student physicians' expression of negative emotions in the medical interview. The investigator in the present study hypothesizes that there is a feedback loop between cognition and emotion such that negative affect could lead to negative cognitive expectancies and vice versa. Damasio's (1994, p. 139) neurological definition of emotion as "a combination of a mental evaluative state…with dispositional

responses to that process, mostly toward the body proper, resulting in an emotional body state, but also toward the brain itself…resulting in additional mental changes" supports this interpretation of the present results by confirming a physiological feedback loop between affect and cognition. The earlier discussed research link between early relationships and neurological patterns of affect (Dawson, Frey, Panagiotides, Yamada, Hessl & Osterling, 1999) demonstrated the relational nature at the heart of emotion's mental evaluative states and physical affective responses. Patterns of linkage between affect, cognition, and relationships with significant others that have been demonstrated in the neurological, developmental, and social cognitive research cited earlier in this study, are easily observed in the present results of clinical inferences and affective responses between student physicians and their patients.

The present results suggest that Andersen's experimental paradigm is not an effective paradigm for the study of a social cognitive model of transference between physicians and patients. An integrated transformation model of transference is suggested as a more useful model. However the present results do not disconfirm a social cognitive model as an appropriate lens for a theoretical understanding of the potential for transference to impact student physicians' affective interactions and clinical inferences with patients. Clearly intergenerational intimidation, present skills in peer relationships, gender, and intergenerational intimacy all play a role in how physicians "go beyond the information given" in their affective interactions and clinical inferences with patients. The present results do support a vision of medicine as a holistic enterprise. The relational variables represented in social cognition theory as "chronically available

mental representations of significant others", are very near the center of physicians' clinical inferences and affective interactions with patients.

In the opinion of the author, the present results also support an integrated transformation model of transference, in which student physicians' clinical inferences and affective interactions with patients involve social cognition in an interactive feedback loop with thoughts and emotion, as well as with individual developmental processes. These integrated feedback loops, particularly loops that are deeply connected to intergenerational family relationships, may expand or constrict an individual's awareness and freedom of choice in how thoughts and affect are expressed in present day interactions.

Limitations

A major limitation of this study is its focus on young adult medical students in their pre-clinical years of medical training. Therefore, the results from this study will not be generalizable to older, more experienced physicians. Future studies may wish to consider years of experience, and identified medical specialty as variables contributing to physicians' affective interactions and clinical inferences with patients.

Another limitation of the present study is that the sample was limited to one class of medical students at one small southwestern medical school. It is possible that variance in institutional environment, emphases in medical curriculum, or geo-cultural factors could account for the results rather than intra-individual variables. Future studies may wish to consider a multi-site collaboration between medical schools, in order to obtain a more representative sample of medical students.

A third limitation of the present study was that a medical interview with a standardized patient is a loosely controlled environment when compared to previous laboratory-based social cognitive studies of transference. Therefore it is possible that the experimental effects observed in a highly controlled social cognition lab may not be observable in the less controlled medical interview setting. Future studies using Andersen's social cognitive paradigm for the study of transference in the physician patient relationship may wish to include manipulation checks in their study in order to verify that their results are indeed due to the priming of associations to significant others, and not (as in the present study) due to strong pre-existing patterns of intergenerational family relationship that may manifest in interpersonal interactions and social cognition regardless of what kind of associations were primed.

A fourth limitation of this study was the level of control represented by the standardization of the patient scenario. A medical interview with a standardized patient is loosely controlled environment in comparison to a university-based social cognition laboratory. However, a medical interview with a standardized patient is a highly controlled clinical situation with little of the procedural variance and organizational chaos associated with a busy medical practice. Therefore the results from this study may not be generalizable to a less controlled clinical setting. While generalizability is a laudable goal, the investigator in this study recommends future studies of transference effects in physician patient interaction strive for more control rather than less. For example, in the present study six standardized patients were used, in order to prevent actor fatigue effects over long days of back-to-back interviews with student physicians. While the present study may have successfully managed standardized patient fatigue effects, it may have

cancelled out this control by introducing a large amount of individual difference variance between standardized patients. In future studies, investigators may wish to either a) institute more rigorous monitoring of SP adherence to the SP scenario and script or b) run fewer interviews per day over more days, so that fewer SPs could be used and individual differences between SPs are minimized.

A fifth limitation of the study is its failure to verify the mechanisms of social cognition in medical interviews between student physicians and standardized patients. Without statistically significant results in the experimental component of the study, it is the opinion of the author that the hierarchical regression results, while easily attributable to transference based responses by the student physicians, could arguably be attributed to other variables such as in-born temperament or mood on the day of testing. This line of argument would suggest that temperament or mood color all aspects of self-reporting and self-presentation, consequently biasing the results and causing self-reports of family relationships, clinical inferences, and observed behavior in a medical interview to appear to have strong linear relationships when these variables were in fact unrelated. This line of thinking also brings the validity of the measurement instruments into question. While several of the instruments (PAFS-QVC, SPAFF-16) had been used extensively in previous research studies, the PCIS was a new scale with no prior validity and reliability studies to verify its robustness to situational variables mentioned earlier. More research is needed to develop instruments relevant to the study of psychological models of physician patient interaction, and to examine empirically the mechanisms of social cognition in professional relationship, before definitive statements about the transference effects of social cognition can be made.

As alluded to in earlier discussion of limitations due to SP adherence or non-adherence to the standardized scenario and script, it is important that future studies examine the role of the SPs behavioral confirmation of physicians' primed representations of significant others. For example, if SPs did not provide behavioral confirmation, or even acted in ways that vividly disconfirmed the priming information, would physicians' affective interactions and clinical inferences still be consistent with the priming information? It is important that future studies examine SP behavior in the medical interview, to examine whether there are cues given by the SP that disconfirm transference based cognitions, or at least lessen the possibility of the physician acting out the transference based on primed information. It may be possible that there is another pathway to the transformation of transference based reactivity; that is, physicians may take the internal or developomental route of enhanced differentiation with intimacy, or physicians may actually experience deactivation of their social cognitions by very salient aspects of patient behavior that tips physician reactivity into responsiveness. The case that patients may "heal" their healers' cognitions so that the healers can heal more effectively is thought provoking and worthy of further examination.

Recommendations

The present information on the transference effects of significant-other relationships on student physicians' affective interactions and clinical inferences with patients has potential usefulness in the design of medical education. For example, medical educators may wish to examine their theoretical conceptualization of the medical interview to better account for the influence a physician's intergenerational and peer

relationship variables exert on that physician's affective interactions with patients. The present results on the potential transference effect on student physicians' affect in medical interviews suggested that the degree to which closeness and connection are expressed by parents towards student physicians in student physicians' intergenerational family relationships, together with student physicians' degree of gender socialization may have had a very large effect on the student physicians' expression of negative affect in medical interviews. This may have implications for medical education, in that training to raise awareness of gendered patterns of communication, and conscious attention in medical school to the cultivation of healthy intimacy in student physicians' relationships with family of origin, may have a strongly positive impact on a student physician's awareness of negative affective patterns and use of self in medical interviews with patients.

Positive affect in the physician patient relationship also deserves further study. Gender (β ranging from .19 to .219) was assigned the most weight in contributing to the variance explained in Positive Affect and alone produced an effect size of 5%. These results present interesting possibilities regarding the socialization of positive affect. That is, socialization in intergenerational family relationships may include overt modeling and teaching about what defines appropriately positive social behavior. This socialization may be particularly strong for women, a hypothesis that is borne out by the present results in which gender was the most powerful predictor of expression of positive affect. Future studies on the expression of positive affect in medical interviews may wish to explore the degree of student physicians' socialization to social propriety, in addition to the degree of student physicians' identification with stereotypical gender roles. In

addition to raising students' awareness of their gender socialization and its impact in interactions with patients, medical educators may wish to be attentive to student physicians' developemental level with respect to individuation in peer relationships. Peer individuation had the largest squared structure coefficient of all predictors in positive affect in the final step of the regression model, and its impact was only followed by intergenerational intimacy and gender. It is possible that security of attachment and the capacity to balance intimacy with individuation in peer relationships is an important predictor of how student physicians minimize and transform negative affect into more positive and pro-social expressions of emotion in interactions.

Researchers who develop clinical inferences logarithms may wish to include physician relational variables that influence a physician's clinical inferences about likelihood of treatment success, and the patient as partner. Given the powerful impact negative patterns of intimidation and control in the family of origin on expectations for treatment failure, further exploration of the relationship between student physicians' intergenerational patterns of intimidation, and a tendency to expect treatment failure is warranted.

Medical educators may wish to include modules in the undergraduate medical curriculum that cultivate student physicians' awareness of self-in-relationship and the potential implications of interpersonal histories, perceptions and patterns on affective interactions and clinical inferences with patients. Also, given the importance of family of origin intimacy and peer individuation variables in influencing student physicians' affective interactions with and clinical inferences about patients, medical educators may wish to modify the type of formative evaluations used in undergraduate medical

education to include 360 degree observational feedback from peers, colleagues, and patients about student physicians' presentation of self in relationship to peers, colleagues, and patients, as this information may be invaluable to recognizing and changing maladaptive patterns of affective interaction and clinical inferences in patient care (Novack,, Epstein, & Paulsen, 1999).

Further research is needed to clarify the mechanisms at work in a social cognitive model of transference in the physician patient relationship. The present study supports the statement that particular patterns of intergenerational family relationships and peer relationships may be predictive of both negative and positive types of affective expression in the physician patient relationship, as well as specific ways a physician may reason about the clinical information presented that "goes beyond the information given".

Further research is also needed on models of transference that integrate social cognition theory and intergenerational family theory. The integrated transformation (IT) model of transference was suggested here as an alternative model of transference that explains in a simple manner how developmental processes related to the family of origin might exacerbate or transform the reactive thoughts and emotions related to unconscious activation of chronically available mental representations of significant other relationships. From a practical perspective, it is the opinion of the author that any model of transference that does not include suggestions for the interruption of automatic transference processes will be less than optimally useful for clinicians, educators, and patients.

Transference is alive and well in the physician patient relationship. It is expressed in the affective interactions and clinical inferences of physicians with patients. As social

cognitive theory suggests, transference is a normal and everyday process. Transference processes exert influence on physicians' clinical inferences and affective interactions with patients. These transference effects remain largely outside of physicians' awareness. However, there may be physician developmental and relational influences that exacerbate or counter the negative cognitive and affective effects of transference in the physician patient relationship. Aspects of these developmental influences, specifically the development of differentiation with intimacy in relationships with significant others, could lead to the transformation of transference processes into skillful responsiveness by physicians towards their patients.

On a qualitative note, as the researcher diligently transcribed and coded sixty six medical interviews between student physicians and standardized patients, she noted that in the interviews with the most satisfying "feel", that is the interviews in which there appeared to be a mutually influencing dialogue between physician and patient, the physicians demonstrated an affective attunement and responsiveness that was absent in interviews with a jarring or unsatisfactory "feel". This qualitative observation could be a facet of a physician's ability to transcend his or her transference and respond rather than react to the person and information at hand. This type of skillful responsiveness could be a qualitative observation of the very differentiation with intimacy hypothesized as part of an integrated transformation model of transference. An integrated transformation model of transference needs further exploration and research to be used for the Asclepeion quest for healing and transformation in medicine.

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APPENDIX A

INFORMED CONSENT

Texas A&M University Health Science Center
Informed Consent

In an effort to improve researchers' and medical educators' understanding of how doctors think about their patients, I will participate in the following: 1) completion of several paper and pencil forms regarding my background in interviewing and my family background (10-20 minutes) 2) the completion of confidential paper and pencil questionnaires about my perceptions of and experience in the standardized patient interview (total time = 10-15 minutes)., 3) I agree that the videotape of my interview with the standardized patient may be released for confidential use by the research office of the Department of Family and Community Medicine. I understand that the videotape will remain in a locked, secure environment and will only be viewed for research purposes by authorized research assistants within the facilities of the Health Science Center/ College of Medicine (HSC-COM). I understand that the videotape of my interview will be erased by September 1, 2004. I understand that neither my instructors nor any other HSC-COM faculty, nor HSC-COM administrators nor anyone other than research assistants employed or contracted with the HSC-COM will be involved in the collection and the analysis of data. I understand that my instructor will not view any data until the termination of the course and at that time will only be allowed to view data in aggregate form. I understand that information from my videotaped interview and paper and pencil reports will e used anonymously to enhance researchers' understanding of how student doctors think about their patients.

I understand that all of my test scores and performance ratings and videotapes will be kept confidential. No information about me as an individual participant in this study will be released. I will not be identified. My participation in this study will be kept confidential. My results will not be available to my instructors except in aggregate form. My results have no bearing on my course grade. My results will be sent directly to the research office of the Department of Family and Community Medicine. I understand that all individual data will be viewed only by research assistants and researchers who are not involved in the evaluation of my performance in medical school. I understand all information regarding my performance will be kept in complete confidence. I understand that all reporting of data will be done as composite scores, as to eliminate the possibility of recognition of my performance as an individual.

My participation is strictly voluntary. I understand that my decision whether to participate or not will have no impact on my grades or on my performance in the College of Medicine. Upon completion of this study, I understand that I may request a copy of the results.

"I understand that this research study has been reviewed and approved by the Institutional Review Board – Human Subjects in Research, Texas A&M University. For research related problems or questions regarding participants rights, I can contact the Institutional Review Board through Dr. Richard Ewing, Vice President for Research, Office of the Vice President for Research and Associate Provost for Graduate Studies, at 979-845-1811."

I have read and understand the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntary participate in this study. I understand that I may withdraw my consent at any time and discontinue participation without penalty, and that I am not waiving legal claims, rights or remedies. I have received a copy of this consent form.

------------------------   -------------------------
Signature of participant   Date

------------------------   --------------------------
Printed name   Date

Dr. Rachel Bramson
154 Reynolds Medical Bldg
979.845.7829 email: bramson@medicine.tamu.edu
Dr. Richard Ewing, TAMU Vice President for Research
email: richard-ewing@tamu.edu

APPENDIX B

STANDARDIZED PATIENT SCENARIO

Personal Data
- Melissa Jones
- 23 years old
- Race: Caucasian
- Birthplace: Dallas, Texas
- DOB: 7/1/1979
- Single, never married
- No children
- Graduated from TAMU with major in Elementary Education. She and boyfriend Michael are job hunting. She is looking for the Big Job somewhere in Texas, but will be in College Station until then….

Boyfriend Data
- Michael Harris
- 25 years old
- Military man
- Single, never married
- No children
- Discussed history of STDs together. He says he is clean and Melissa believes this.
- Trustworthy, reliable, mature, supportive
- 5 sexual partners in the past. Melissa is his sixth.
- Melissa and Michael used condoms for the first two months of their sexual relationship, and they have been using birth control pills for the past 7 months – no condoms.

Feelings and Emotions
- Before the doctor even comes into the room: shame, anxiety, fear
- Initial reaction upon receiving the news of an invasive cervical cancer diagnosis: closed shock.
- First emotional expressions in response to the news: anger, denial, resistance.

Personal Ethics
- Wants to get married and have children
- Exclusive relationships, monogamous sexual relationships
- Spiritual vs. religious
- Exclusively heterosexual, no lesbian encounters
- Non-smoker
- Social drinker
- Only smoked marijuana once
- Sporadic condom user: uses condoms until she "trusts" a man, and then starts on the pill
- She and MH are not living together; each has their own apartment

Sexual History
- Currently in a 9 month, monogamous relationship with MH
- Engaged to be married to MH – wedding planning for 1 year after MH finds work.
- Only participates in heterosexual, vaginal sex and oral sex
- Is taking birth control pills, quit using condoms with MH 7 months ago
- Uses douching products
- First sexual relationship: Billy her first love. Lost virginity to each other at 15 years old, broke up with she moved to College Station. Sexually active 15-18 used condoms.
- Second sexual relationship: Joseph freshman fling, fraternity boy, condoms to pill, three month relationship, ended over the first Christmas break. Talked about history of STDs, etc. and trusted mutually that each "clean".
- Third sexual relationship: Andrew: dated for a year. Relationship ended during spring of sophomore year because he was not faithful. Used condoms only. Both agreed to be tested prior to exclusive use of birth control pills: full screening and blood work, all clean.

Medical History

- First PAP smear at age 18 and none since. First one normal. Present pap smear abnormal with 2 cm friable (bleeds easily) lesion on cervix. Pathologist has viewed results and told physician they are consistent with invasive cervical cancer. Has never seen the present doctor before – current doctor out of town.
- No health insurance
- No history of STDs
- No pregnancies/No terminated pregnancies
- In generally good health
- Non-smoker

Family History

- Parents together, living in Dallas
- Only child
- Maternal aunt died of breast cancer

Communication Style

- Demanding more information
- Does not give personal information easily.
- Need to defend/protect Michael – worried whether he will stay with her if she can't have children.
- Wants to have her own children. Has planned this extensively with her fiancé Michael. very determined about this- does not want to lose her fertility.

APPENDIX C

MODIFICATIONS TO THE SPAFF – 16 AFFECT DEFINITIONS – INSTRUCTIONS

TO CODERS

SPAFF 16 Code # & Title	Notation	Gottman Definition	van Walsum Modification
Note: Code only GENUINE behaviors – with emotion resonating beneath behavior. For example, this means that caring statements judged to be delivered in a rote manner will not be coded caring.	The goal is to assess emotional tone and resonance rather than rote performance of behaviors. This will require use of one's own emotional intelligence and consciously developed subjectivity.		
1. Disgust	Dis	Rejection; Involuntary; Aversion; Au 9 and mild 10	
2. Contempt	C	Sarcasm; Eye roll; Hostile humor; Mockery; Insults; Uni or bilateral 14s	Impersonal and intrusive handling of patient emotions; very ill timing with patient cues; makes unchecked assumptions about patient's life and relationships; subtle put-down
3. Belligerence	B	UN reciprocated humor; taunting questions; Interpersonal terrorism;dare	
4. Domineering	Do	Incessant speech; low balling; patronizing; lecturing; invalidating; quoting authorities	"If you don't do this…"; insisting on own solution; sudden topic change; direct order; repeating self to emphasize point; taking over – God-like behavior – solving all problems; taking back the floor from patient
5. Anger	An	Irritation/annoyance; frustration/impatience; lip presses; yelling/raising voice; constrained anger	Cold formality in response to patient's challenging behavior

SPAFF 16 Code # & Title	Notation	Gottman Definition	van Walsum Modification
6. Defensiveness	Def	Yes-but statements; cross-complaining; excuses; negative mind-reading; counter criticism; rubber man/woman	Subtle or not subtle arguing; direct contradiction; minimizing patient emotion
7. Whining	W	Non-defensive complaint; high pitch voice tone; sing song voice quality	
8. Sadness	S	Passiveness; sighing; crying; helpless/hopeless behavior; pouting/hurt	Voice softening and dropping off at end of sentence; overinvolved in patient sadness; catastrophizing
9. Stonewalling	St	Away behavior; automanipulation; monitoring gaze; no backchannels	Actively avoiding difficult issues through deferral; bored; dismissive of patient's concerns; no response to patient's obvious plea for comfort; avoids pain of direct statement about illness; technocratic language; "stone heart"; flat voice
10. Neutral	N	Noncodable behavior; "other" directed behavior; resting face; information exchange	Delivering patient's requested information
11. Interest	I	Positive energy; seeks elaboration; increase in vocal amplitude and tempo; attentive	Energetic interest in the PERSON of the patient; lively; inviting participation; harmonizing with patient's rythmn /pace
12. Affection/Caring	Car	Warmth; direct "love you" statements; compliment; empathy; concerned question/statement	Self-disclosure; obvious interpersonal warmth; well timed and appropriate touch or offers of other physical comforts (water, tissue, chair)
13. Humor	H	Joking/good natured teasing; laughing/giggling/private joke; nonsensical speech/exaggeration; recognizing absurdity/wit	NOT nervous laughter

SPAFF 16 Code # & Title	Notation	Gottman Definition	van Walsum Modification
14. Delight/Excitement/Surprise	E (Energy)	Anticipation; expansive; exclamation point!	E for generally energetic; emphatically hopeful; eager/upbeat but not necessarily about person of patient rather about activity/action/other doctor etc.
15. Validation	V	Backchanneling; agreement/apology; respect; summarizing; head nod	Affirming not necessarily agreeing with patient's experience
16. Fear/Tension/Anxiety	T	Speech disturbances; fidgeting; nervous laughter; shifting physically – "hot seat"; embarrassment	Multiple uhs, ahs, ums; broken sentences, quavering voice; hesitations

APPENDIX D

PHYSICIAN CLINICAL INFERENCES SCALE

Clinical Inferences About Patients

Answer the following questions based on your assessment of this patient. 1 = Strongly Disagree to 10 = Strongly Agree.

1. This patient is able to report the signs and symptoms of her illness accurately.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree				Somewhat Disagree	Somewhat Agree				Strongly Agree

2. This patient is motivated to tell me the whole truth about her health.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree				Somewhat Disagree	Somewhat Agree				Strongly Agree

3. This patient is very motivated to engage in treatment.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree				Somewhat Disagree	Somewhat Agree				Strongly Agree

4. This patient is likely to comply with my treatment recommendations.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree				Somewhat Disagree	Somewhat Agree				Strongly Agree

5. This patient is able to understand the information I have just given her.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree				Somewhat Disagree	Somewhat Agree				Strongly Agree

6. This patient will be easy to care for.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree				Somewhat Disagree	Somewhat Agree				Strongly Agree

7. The prognosis for this patient is hopeful.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree				Somewhat Disagree	Somewhat Agree				Strongly Agree

_____

8. If I was to provide follow up care to this patient, I would enjoy working with her.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree				Somewhat Disagree	Somewhat Agree				Strongly Agree

_____

9. This patient is in the following stage of change with regards to her illness **(circle one):**
   a. ***Precontemplation stage****: not currently ready to address her thoughts and feelings in order to cope with her illness.*
   b. ***Contemplation stage:*** *beginning to adapt what she thinks and feels about her diagnosis in order to cope more effectively with her illness.*
   c. ***Preparation stage:*** *developing an action plan for how she is going to cope most effectively with her illness.*
   d. ***Action stage:*** *believes she has the ability and autonomy to take action in coping effectively with her illness, and takes appropriate action.*
   e. ***Maintenance stage:*** *growing and becoming more of the kind of person she wants to be while coping effectively with her illness.*

_____

10. I would refer this patient to another physician rather than assume responsibility for her care.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree				Somewhat Disagree	Somewhat Agree				Strongly Agree

_____

APPENDIX E

FORM FOR COLLECTING DESCRIPTORS OF SIGNIFICANT OTHERS

Student Doctors' Thinking About Significant Others

****

Thank you for taking the time to complete this questionnaire for our study on how student physicians think about others. All information shared is confidential. You will not be identified with this information at any time during or after this study. Faculty members and others evaluating your performance will not have any access to this information.

****

I. Positive Significant Other

INSTRUCTIONS: Please write 8 sentences containing statements describing *a very important person in your life with whom you are close and would like to be closer*. After writing the 8 sentences, please *rank order* the sentences from 1(most describes this person) to 8 (least describes this person).
(Please circle one)

This significant other I am describing in these sentences is:
- my parent
- my sibling
- my spouse
- my friend
- other (please specify role e.g. coach, teacher etc.)_____

Descriptors of a Positive Significant Other The following sentences describe a very important person in your life *with whom you are close and would like to be closer* Examples: Lives for Houston Astros games. Tends to be very quiet when angry. Has a silly, contagious laugh. Shops only at Nieman Marcus.	Rank (1 = most describes this person. 8 = least describes this person)
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

REMEMBER TO TURN OVER AND COMPLETE THE OTHER SIDE. THANK YOU!

II. Negative Significant Other

INSTRUCTIONS: Now do the same thing but describe a NEGATIVE SIGNIFICANT OTHER. Please write 8 sentences containing statements describing a very important person in your life *with whom you are NOT close and/or would like to avoid if possible.* After writing the 8 sentences, please *rank order* the sentences from 1(most describes this person) to 8 (least describes this person).

(Please circle one)
This significant other I am describing in these sentences is:
- my parent
- my sibling
- my spouse
- my friend

other (please specify role e.g. coach, teacher etc.)_____

Descriptors	Rank
The following sentences describe a very important person in your life *with whom you are NOT close and would like to avoid if possible.* Examples: Lives for Houston Astros games. Tends to be very quiet when angry. Has a silly, contagious laugh. Shops only at Nieman Marcus.	(1 = most describes this person. 8 = least describes this person)
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

APPENDIX F

EXAMPLES OF DESCRIPTORS OF A POSITIVE SIGNIFICANT OTHER

Sample Significant Other Attributes	Ranking of Attribute (1= most descriptive to 8 = least descriptive)
Is very sensitive	1
Is not always respectful	8
Has curly hair	4
Talks very quickly	3
Gets depressed sometimes	7
Is hardly ever mad	2
Is a creative photographer	6
Has dimples	5

APPENDIX G

RELIABILITY DATA FOR PAFS-QVC SUBSCALE INTERGENERATIONAL

INTIMACY

		Mean	Std Dev	Cases
1.	PAFS2	1.6061	1.0796	66.0
2.	PAFS3	1.7879	1.0600	66.0
3.	PAFS5	1.7727	1.1066	66.0
4.	PAFS6	2.0152	1.1961	66.0
5.	PAFS7	1.8485	1.0705	66.0
6.	PAFS8	1.9242	1.1274	66.0
7.	PAFS17	2.2727	1.3306	66.0
8.	PAFS19	1.8788	1.1963	66.0
9.	PAFS20	2.2879	1.3897	66.0
10.	PAFS22	2.1818	1.1755	66.0
11.	PAFS23	2.5758	1.3016	66.0
12.	PAFS25	1.7273	1.1967	66.0
13.	PAFS26	1.9242	1.2565	66.0
14.	PAFS27	1.9242	1.1544	66.0
15.	PAFS28	1.8788	1.1703	66.0
16.	PAFS31	1.9091	1.1194	66.0
17.	PAFS32	2.2121	1.1963	66.0
18.	PAFS33	1.7121	1.1471	66.0
19.	PAFS34	1.7121	1.1336	66.0
20.	PAFS35	1.4697	1.0410	66.0
21.	PAFS36	1.5455	1.1119	66.0
22.	PAFS38	1.8636	1.3461	66.0
23.	PAFS40	1.6667	1.1810	66.0

Statistics for	Mean	Variance	Std Dev.	Variables
Scale	43.6970	359.5375	18.9615	23

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	1.8999	1.4697	2.5758	1.1061	1.7526	.0693

Item Variances	Mean	Minimum	Maximum	Range	Max/Min	Variance
	1.3955	1.0837	1.9312	.8476	1.7821	.0513

Inter-item Covariances	Mean	Minimum	Maximum	Range	Max/Min	Variance
	.6471	.0979	1.1548	1.0569	11.7952	.0511

Inter-item
Correlations

	Mean	Minimum	Maximum	Range	Max/Min	Variance
	.4690	.0629	.8927	.8299	14.2034	.0270

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
PAFS2	42.0909	328.8224	.7547	.9555	.9491
PAFS3	41.9091	333.4070	.6460	.8740	.9503
PAFS5	41.9242	328.5019	.7432	.8916	.9492
PAFS6	41.6818	329.6972	.6541	.8343	.9502
PAFS7	41.8485	337.2382	.5380	.7435	.9515
PAFS8	41.7727	336.2706	.5320	.6766	.9516
PAFS17	41.4242	330.4019	.5657	.6186	.9515
PAFS19	41.8182	328.2741	.6881	.8453	.9498
PAFS20	41.4091	323.2608	.6873	.7819	.9499
PAFS22	41.5152	329.8228	.6636	.8138	.9501
PAFS23	41.1212	333.3697	.5149	.7090	.9521
PAFS25	41.9697	331.0452	.6214	.8014	.9506
PAFS26	41.7727	325.1629	.7237	.8763	.9493
PAFS27	41.7727	329.1322	.6941	.7536	.9497
PAFS28	41.8182	325.5972	.7712	.8854	.9488
PAFS31	41.7879	332.4466	.6329	.7396	.9504
PAFS32	41.4848	330.7152	.6295	.6905	.9505
PAFS33	41.9848	327.8613	.7309	.9322	.9493
PAFS34	41.9848	329.3690	.7020	.9515	.9496
PAFS35	42.2273	329.5322	.7652	.9334	.9490
PAFS36	42.1515	329.1152	.7234	.9208	.9494
PAFS38	41.8333	327.5256	.6199	.9125	.9508
PAFS40	42.0303	325.8145	.7582	.9098	.9489

Alpha = .9521   Standardized item alpha = .9531

APPENDIX H

RELIABILITY DATA FOR PAFS-QVC SUBSCALE PEER INDIVIDUATION

		Mean	Std Dev	Cases
1.	PAFS53	4.0909	1.0187	66.0
2.	PAFS54	4.2424	.8604	66.0
3.	PAFS55	4.1667	.8518	66.0
4.	PAFS56	3.9697	1.0224	66.0
5.	PAFS57	4.0909	1.0035	66.0
6.	PAFS58	4.0606	.8572	66.0
7.	RPAFS51	4.0000	.8038	66.0
8.	RPAFS52	3.7879	1.0454	66.0

Statistics for	Mean	Variance	Std Dev	Variables
Scale	32.4091	17.9378	4.2353	8

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	4.0511	3.7879	4.2424	.4545	1.1200	.0188

Item Variances	Mean	Minimum	Maximum	Range	Max/Min	Variance
	.8787	.6462	1.0928	.4466	1.6912	.0332

Inter-item Covariances	Mean	Minimum	Maximum	Range	Max/Min	Variance
	.1948	-.0462	.5744	.6205	-12.4444	.0297

Inter-item Correlations	Mean	Minimum	Maximum	Range	Max/Min	Variance
	.2214	-.0564	.6595	.7159	-11.7011	.0389

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
PAFS53	28.3182	14.8972	.2547	.3610	.6974
PAFS54	28.1667	15.3410	.2754	.3777	.6884
PAFS55	28.2424	13.7865	.5415	.5319	.6332
PAFS56	28.4394	12.8963	.5442	.5627	.6253
PAFS57	28.3182	13.6664	.4400	.5636	.6525
PAFS58	28.3485	14.4767	.4180	.4835	.6594
RPAFS51	28.4091	15.6916	.2512	.4102	.6921
RPAFS52	28.6212	13.9005	.3778	.4013	.6684

Alpha = .6950   Standardized item alpha = .6947

APPENDIX I

RELIABILITY DATA FOR PAFS-QVC SUBSCALE PEER INTIMACY

		Mean	Std Dev	Cases
1.	RPAFS1	4.1719	.9686	64.0
2.	RPAFS42	3.7500	1.1409	64.0
3.	RPAFS43	4.1719	.8647	64.0
4.	RPAFS44	4.2969	.9374	64.0
5.	RPAFS45	4.3438	.8948	64.0
6.	RPAFS46	4.4063	.8858	64.0
7.	RPAFS47	4.3750	.9677	64.0
8.	RPAFS48	4.2188	.9507	64.0
9.	RPAFS49	4.3906	.9018	64.0
10.	RPAFS50	4.4375	.8706	64.0
11.	RPAFS4	3.9063	1.1370	64.0

Statistics for Scale	Mean	Variance	Std Dev	Variables
	46.4688	79.7450	8.9300	11

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	4.2244	3.7500	4.4375	.6875	1.1833	.0480

Item Variances	Mean	Minimum	Maximum	Range	Max/Min	Variance
	.9233	.7478	1.3016	.5538	1.7406	.0387

Inter-item Covariances	Mean	Minimum	Maximum	Range	Max/Min	Variance
	.6326	.4524	.9529	.5005	2.1064	.0069

Inter-item Correlations	Mean	Minimum	Maximum	Range	Max/Min	Variance
	.7034	.4432	.9229	.4797	2.0825	.0149

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
RPAFS1	42.2969	66.1486	.8034	.8274	.9563
RPAFS42	42.7188	67.3482	.5925	.4851	.9650
RPAFS43	42.2969	66.6248	.8764	.8169	.9542
RPAFS44	42.1719	65.5414	.8779	.8885	.9538
RPAFS45	42.1250	66.2381	.8724	.8397	.9542
RPAFS46	42.0625	65.8690	.9104	.9217	.9530
RPAFS47	42.0938	66.0546	.8108	.7875	.9560
RPAFS48	42.2500	65.9048	.8381	.7833	.9551
RPAFS49	42.0781	66.5494	.8416	.8386	.9551
RPAFS50	42.0313	66.9196	.8472	.8607	.9551
RPAFS4	42.5625	64.6627	.7541	.8301	.9588

Alpha = .9599   Standardized item alpha = .961

APPENDIX J

RELIABILITY DATA FOR PAFS-QVC SUBSCALE INTERGENERATIONAL

INTIMIDATION

		Mean	Std Dev	Cases
1.	PAFS9	4.0303	1.0950	66.0
2.	PAFS10	4.0303	1.1228	66.0
3.	PAFS11	3.8485	1.1128	66.0
4.	PAFS12	4.0758	1.0857	66.0
5.	PAFS13	4.2879	1.0636	66.0
6.	PAFS14	4.6061	.7417	66.0
7.	PAFS15	4.1061	1.0397	66.0
8.	PAFS16	4.1667	1.0316	66.0

Statistics for	Mean	Variance	Std Dev	Variables
Scale	33.1515	32.8998	5.7358	8

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	4.1439	3.8485	4.6061	.7576	1.1969	.0506

Item Variances	Mean	Minimum	Maximum	Range	Max/Min	Variance
	1.0879	.5501	1.2606	.7105	2.2915	.0521

Inter-item Covariances	Mean	Minimum	Maximum	Range	Max/Min	Variance
	.4321	.2051	.8897	.6846	4.3375	.0253

Inter-item Correlations	Mean	Minimum	Maximum	Range	Max/Min	Variance
	.4018	.2324	.8296	.5972	3.5697	.0172

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
PAFS9	29.1212	25.5543	.5552	.5369	.8241
PAFS10	29.1212	24.5697	.6351	.5935	.8133
PAFS11	29.3030	25.8452	.5141	.4482	.8297
PAFS12	29.0758	25.3326	.5845	.5376	.8201
PAFS13	28.8636	25.9350	.5385	.4516	.8261
PAFS14	28.5455	28.0364	.5491	.4810	.8274
PAFS15	29.0455	25.0902	.6460	.7909	.8122
PAFS16	28.9848	25.7382	.5826	.7720	.8204

$\overline{\text{Alpha}}$ = .8405   Standardized item alpha = .8431

APPENDIX K

RELIABILITY DATA FOR PHYSICIAN CLINICAL INFERENCES SCALE:

PATIENT AS PARTNER SUBSCALE

		Mean	Std Dev	Cases
1.	CR4	8.1667	1.2960	66.0
2.	CR6	7.1061	1.5800	66.0
3.	CR7	7.1364	1.7531	66.0

Statistics for Scale	Mean	Variance	Std Dev	Variables
	22.4091	12.2762	3.5037	3

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	7.4697	7.1061	8.1667	1.0606	1.1493	.3646

Item Variances	Mean	Minimum	Maximum	Range	Max/Min	Variance
	2.4164	1.6795	3.0734	1.3939	1.8300	.4906

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
CR4	14.2424	7.6942	.4037	.1686	.5522
CR6	15.3030	6.4914	.4085	.1692	.5356
CR7	15.2727	5.3399	.4768	.2285	.4360

$\overline{\text{Alpha}}$ = .6142   Standardized item alpha = .6178

APPENDIX L

RELIABILITY DATA FOR PHYSICIAN CLINICAL INFERENCES SCALE:

LIKELIHOOD OF TREATMENT SUCCESS SUBSCALE

		Mean	Std Dev	Cases
1.	CR3	7.3788	1.5568	66.0
2.	CR5	7.8788	1.3418	66.0
3.	CR9	1.8788	.7341	66.0

Statistics for Scale	Mean	Variance	Std Dev	Variables
	17.1364	7.7811	2.7895	3

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	5.7121	1.8788	7.8788	6.0000	4.1935	11.0833

Item Variances	Mean	Minimum	Maximum	Range	Max/Min	Variance
	1.5876	.5389	2.4235	1.8846	4.4970	.9219

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
CR3	9.7576	3.0788	.4171	.1776	.4803
CR5	9.2576	3.7326	.4336	.2030	.4127
CR9	15.2576	5.7326	.4294	.1875	.5263

Alpha =   .5818   Standardized item alpha =   .6257

APPENDIX M

SAMPLE TRANSCRIPTION OF VIDEOTAPED MEDICAL INTERVIEW WITH

SPAFF-16 CODES

Speaker	Speech	Coder 1	Coder 2
D	Miss Jones? Hi.	i	I
P	Hi		
D	I'm B--- ----	I,n	I
P	Nice to meet you		
D	Your regular dr. is out of town for a couple of weeks. Um..you are here for the uh the uh results of your PS (inaud). Um – can u bring me up to date on what y our u/sing is so far …	N,i	N
P	Uh…I came in for a PS…uh…I…I…don't know why I got called in. Uh..they called me and said there was some results and I needed to come in and talk to the doctor…		
D	Mmhmm..yeah we did…ok…do you have someone in the waiting room..do you want an extra set of ears or…	V,i	I
P	No, I came by myself today.		
D	Ok. Ok. Um. Well. I have some bad news for you um..the uh the results of your PS indicate that you have a form of CC. Um	V,i	I
P	C?		
D	Yes um..now I that's kind of a um big hot button word. It can mean a lot of things, but right now it shows that the results are consistent with CC. Um we are going to need to do some more tests and get the staging on this and try to find whether its an early stage thing that we can take care of, or whether its something more progressed um…	V,I,n	I,n
P	By progressed you mean…		
D	Um Staging can be stage 1,2, 3 or 4. Um stage 1 its its going to determine what kind of treatment we have and what kind of outcomes we have. Um we don't do the staging here. Well be actually sending you to a um gynecological oncologist. And that's a that's an oncologist who specializes in this kind of thing. And for staging they'll actually do a CT scan of you. Um they may inject a kind of dye. They may do whats called a colcoscopy – its basically where they just take a kind of telescope and they look in at the cervix like that. It's not a real invasive thing so..	N,I,v	I,n
P	Ok……		
D	But uh…I know this IS lot and -	V,car	v.ca
P	Patient laughs nervously		
D	**I'm sorry! Im hitting you with an awful lot.	I,v	V,ca
P	**I..I..ok I don't u/s you said you said ** con-sis-tent with cancer but its not…is it…are you SURE I-I-its cancer? IM is this a		
D	(inaud)	n	N
P	…is this a possibility that this isn't cancer? That its just…		
D	No test is ever accurate 100% sure. But on these were pretty sure. IM this is something that…that…	n	N
P	(Tearing up)		
D	Yes..I know.	car	Car
P	O..Ok..and.and then you said ok staging and then dye..I.I..I'm sorry ***exhalation**		
D	(empathic laugh/exhalation ***)I know this is like ugh..	V,car	Car,v
P	That's just that's just		
D	Let me..Ok. Ok.	V,car	Car

Speaker	Utterance		
P	(crying) IM can u back up and		
D	(talking over each other) And uh (inaudible)	v	Car
D	Yes!	v	Car
P	..and start again with this…		
D	Yes!	v	car
P	Bc Im sorry that's just WAY		
D	Yeahs..I hear you!	V,car	car
P	Too much information!		
D	I hear you. (slowing down pace) The..the PS indicates that you have a form of CC.	V,car	car
P	OK		
D	Ahm. There is a little 2cm growth on your cervix that. And that. When we sent that to the pathologist who looked at your PS, it showed the kind of cells that are cancer cells. And they look at those. They - they know what those are.	n	n
P	Ok		
D	NOW. Its REAL important that we go to this next dr. and get this staged properly, whether its stage 1,2,3 or 4. Ahm.	I,n,	N,car
P	Ok. HOW do they do that?		
D	The way they do that is they're gonna do a CT scan. That's where you'll lay down and just go into a tube and itll just take a a picture of you. Its ah Its ah sophisticated X-ray.	n	n
P	OK		
D	And ahm. they may inject a dye into your veins so that they can c it better.	n	n
P	Would that hurt?		
D	Well its ahm. Its just like getting a needle put into your vein and getting something injected. IT Its like an IV they put into you.	N,v	n
P	OK…		
D	So that's all pretty standard stuff. And they do colposcopy also which is just using a big magnifying glass to..its just like doing a regular pelvic exam with this uh magnifying glass.	V,n	n
P	OK. How much does this all cost.		
D	Oh goodness! Um..it should be covered in your insurance.	V,I,n	n
P	I don't HAVE any insurance.		
D	Oh OK	v	car
P	IM im a substitute teacher and I work..		
D	That's right.	v	car
P	And I work part time as a waitress.		
D	That's right.	v	n
P	So…I don't HAVE any insurance.		
D	OK. We …this is expensive stuff. I know its getting into like the 200 thousand dollar range for these kinds of things. That's something well talk about with the front office. The the this is a this is a serious life threatening disease that we need to …	V,car, i	n
P	Im gonna DIE!? (talking over each other)		
D	…we need to get this taken care of .	Car,n	n
D	Well that's not what Im saying but.**indraw breath** Let me talk about staging with you, because..because this *is* life threatening.	V,t,I, n	n
P	OK **		
D	Do you do you need a moment? To collect your…	V,car	Car,v
P	(Exhalation – crying) **		
D	Take as much time as you need, because I know this is…this is awful news.	I,v,ca r	Car,v
P	…uh…ok…stuh…staging. What…?		

D	When we talk about staging this is talking about how how big its grown and has it spread. And if its spread, where has it spread to? Has it gotten OUTside of your pelvis? Has it gotten into lymph nodes? Has it gotten around? So that's what we do staging for. When we take this CT scan we can see if its spread or we can c if its if its right where it is. If it HASN't spread at all and its just in that o ne little place then we call it a stage 1. that has…I hate to talk about percentages because because you never know what per-Cent you are going to be in;	,I,n,car	n
P	Mmhmm…		
D	But that's that's they're helpful for us to identify groups of survivors. Stage 1 right now, 95 to 100% of the ppl get thru that. They have a 5 year surival rate but its you progress all the way from that to stage FOUR – its very SERious. IM most ppl who have stage four DIE from it and its..we DON't know what stage you are and we need to find that out.	N,I,car	N,car
P	(pause) But I'm..not..sick. IM..		
D	No your not and that's..	n	car
P	IM I don't FEEL sick and I I don't even get colds! I don't have allergies!		
D	That's, that's one of thuh most encouraging things right now is that you ARE in good health. And..and…this kind of C can jst happen out of the blue! IM there are RISK factors for it most of which you don't have the risk factors…you're NOT a smoker..yk you are basically a healthy person.	V,car, I,n	Car,n
P	OK…		
	RESEARCHER NOTE: 5 MINUTE POINT FOR CALCULATING PHYSICIAN VERBOSITY		
D	Umm. There…..	n	n
P	(tearing up)		
D	(waits…) it can just happen out of the blue. I mean this is just like walking across the street and getting getting hit by a car. It can just happen out of the blue! Through no fault of your own, it can just it can just happen.	V,car, I,n,t	n
P	Is this gonna affect my ability to have children?		
D	Yes it can. I want to talk about…I want to talk aobut the kinds of treatments you are going to be looking at. Depending on the staging is whats gonna be the treatment. IF it's a simple stage 1 they USED to do a complete hysterectomy. And you wouldn't be able to have children. NOW. They are doing a lot of new things where they'll just do some radiation and you DON'T have to get a hysterectomy. And they're able to preserve fertility in a lot of women.	V,n	n
P	RA-di-A-tion?		
D	Uh—radiation..	v	n
P	But doesn't that affect fertility?		
D	It it	N,t	n
P	IM…		
D	It can but it doesn't Always. Ther are there are ways now…also they can go in and just cut it out if its not that spread and they can do whats called a CONE biopsy where they just take out a little part of your cervix. And they're able to preserve fertility.	n	n
P	Ok. Ok.		
D	Again this is gonna depend on the staging and we..we Really need to talk with the gynecological oncologist about this because he's really up to date on, on, all the current um..ways that we can preserve fertility. I know you are wanting to be a mom.	N,I,v, t,v	N,car
P	I just got ENGAged. IM…my my my bf is NOT going to ..Oh my God!		
D	Im so SORRY, im SO Sorry. If you'd like we can have your bf come in uhm now or today or any time you'd like	Car,v, i	Car, v
P	He can't get off work. (softly) That's why he's not here…		
D	Well if if you want to come in with him after work. When he gets off work I'd be glad to speak with you both again so we can answer questions.	Car,v, i	car
P	(crying) I just don't even know what he's gonna do! I my wha what if he leaves me? I can't! I can't!		

D	Im so sorry. I can see you are REALLy upset about this…	V,car, i	Car,v
P	(weeping) if if it was if it was that bad..could I wait? Could I Could I have a kid and then have the surgery done?		
D	That's something I can't answer. I don't know about that.Um I'm gonna need to…WE are gonna have to ask the gynecological oncologist about that. And I honestly don't know whether you are able to wait or not. Again, a lots gonna depend on the staging. And…treatment wise they are also – treatment wise. If it IS andvanced they are going to have to get into umm chemotherapy also…and I know and I know you've pbbly heard about chemotherapies and they have some regimens now that aren't as harsh as they used to be, but a lot of them frankly Are harsh.	N,t,v,i	N,car
P	(crying)		
D	(waits)	I,v	n
P	I don't u/s. I don't know why this is happening to me. I…uhh****(weeping)		
D	(waits) (gently) I'm very sorry.	V,I,ca r	car
P	(weeping –inaud) wha am I s'posed to do? (weeping) I dk what im s'posed to do!		
D	Well we'll have to take this one step at a time.	Car,i	car
P	(weeping)		
D	Your regular dr and myself we'll be with you through this whole thing and…and we'll help you construct your support and get through this…however we can get through this.	N,I,v	N,car
P	(weeping) but what am I supposed to do now? What what's the next step? IM		
D	The next step…the VERY next step is we want to talk to the gynecological oncologist as soon as we can. Um hopefully we'll make your appt for the next couple of days. Um until then.. really you just need to keep resuming as much of your normal life as you can. If you need to take time off from your work to absorb this um we can sure write you a note to get off from work.	n	n
P	I can't I can't take time off from work…		
	RESEARCHER NOTE: 10 MINUTE POINT, END OF SPAFF-16 CODING		
D	I u/s you are under a lot of pressure now.		
P	(***) can I can I give this to somebody? Is this contagious?		
D	No. This is. This is not contagious. This is not contagious at all. What this is are just some cells on yr crvx that started growing too much. And this is part of C we have not solved yet is why these cells start to grow and become a tumor. AND hopefully it has just stayed where it is and has not spread but um a lot of times they'll tend to try to spread and um even detaches from the body. And that's where we need to do the staging to make sure what were looking at here. And really, until then IM right now this is a huge hit and this is this is suddenly you are going to be unknown right now that you don't KNOW what what DEGREe this is. And that's why we want to get as soon as possible get the stage.		
P	Is there anything I can't do while I…wait for this doctor's appointment?		
D	There's really not. There's really not. IM right..all it really amounts to right now are some cells that are growing too much.		
P	Can I still have sex?		
D	Yes, you can still have sex. Um you can you can just live your normal life though I know right now its not going to be very normal. And I'm I'm so sorry for that.		
P	So how do I get the doctor's appt?		
D	WE are going to make it for you. AS a matter of fact I've they're pbbly right now calling to make it for you.		
P	Am I going to need to take a day off work or….		
D	For this, first you are going to talk to the gynecological oncologist and..and they have there own facility I believe with the radiology…well well find that out for you.		
P	Ok.		
D	We'll find out. But uh..usually uh a CT scan amounts to just a few minutes. Now if		

	they are gonna need to put in an IV with some dye or stg then that may take a little while longer but I wouldn't think it would be more than a cpl hours.		
P	Ok. (crying)		
D	(Waits)		
P	I..I ** feel so confused. I don't u/s…I don't know how Im gonna pay for this. I don't' know how I'm gonna tell Michael..I don't know how to tell my parents… (crying)		
D	If there's any way we can help you with that. IM If you want to bring him in we can tell him HERE with US.		
P	(crying)		
D	I know. I know this is…Its very awful.		
P	(inaudible)		
D	Yeah. Its right here..(hands Kleenex)		
P	(crying)		
D	(waits) As far as the payments and all those details I know those are things that are gonna weigh on you but those are things we are just gonna have to work out. IM fortunately we are in America where you can where you can get good medical care regardless. And well we will find a way. There's gonna have to be a lot of adjustments made to get through this, and its just…its gonna be a huge challenge and well help you whatever way we can to get through this. Soo..and its gonna take…a lot of times this news comes as an awful shock.		
P	Can, can I make an appt to come in with Michael?		
D	Absolutely. If u want him to come in tonight after work I can stay after work when he gets off.		
P	He gets off at 6		
D	Ok. Ill be here and just uh Ill hang out and yall come on in and well just tell him here. And..now also we have some pamphlets and things that well get together for you somethings you can read about this. Obviously there are support groups and things. There's going to be a LOT of outside support that we're going to be able to garner you to help you through this. And um again I'm I'm So sorry.		
P	(Sniffs) **		
D	(waits)		
P	I just don't know what I'm gonna do if I can't have kids!		
D	I know.		
P	I don't know how were supposed to get…IM we were talking about Moving and…I have a wedding to plan and um….(crying)		
D	Its all stuff that were just gonna have to sort out one thing at a time.		
P	(crying)		
D	(waits) (reaches to lay hand on arm)		
P	So I should be gg to that dr like at the bgnng of next week? Or..		
D	We are gg to try to gt u an appt in the next few days. Because …in my experience the worst part is notkwing is having to wait. And um Im assuming that you want to hurry up and lets find out.		
P	And how…long does it take to get the results IM..am I going to be waiting for a month?		
D	No, this is something that they should know by the next day…bec it's a matter of doing the tests, getting the films, and having the radiologist look at it. And..were going to prsnlly make sure that this is, YK this is a serious thing so yk, you are gg to get priority and they'll get the results turned around right away. The turnaround is usually by the next day, so…and throughout this entire process it becomes, in my exp it becomes a process of not knowing, finding out, making a plan, doing the next thing..and then n ot knowing again. Theres a LOT of unknowns involved in this.		
P	OK		

D	So all thoughout it we try to get you OUT of the unknowns as much as we can as quick as possible. So…		
P	(silence) ***exhales**		
D	Do you have to be anywhere else the rest of the afternoon today?		
P	No Im off work so…		
D	So, you might be able to go home and OK…		
P	Crying		
D	Yeah. I know its gonna take Yeah.		
P	**How do I tell my parents? (inaud)		
D	Do they not live here?		
P	They live in Dallas.		
D	Ok. Ok. If If your parents have any questions Id certainly be glad to answer them.		
P	OK		
D	I have a phone number you can give them my number and id be glad to answer any questions they…they have.		
P	(sniff ***)		
D	Are you going to be ok to drive yourself home? You are really upset.		
P	** Yeah Im ok.		
D	Well you can take as much time as you need and uh		
P	Ok		
D	And if you think of any more questions, Id be glad to answer them. I know this is a s__? Right now. And half of this you pbbly won't remember when we get out of here….but well go over it again tonight. And um we can be sure to write some of this down. So that whenever you are talking to you bf or your fiancée….		
P	I just don't u/s how I can have C and not feel sick. I know my aunt had cancer and she felt sick and that's how she knew to go in….		
D	DIFFerent Cs present Different ways. And especially with older people. You are young and healthy. And that really can disguise a C that otherwise would be felt. And um and uh again its encouraging that you are young and healthy bc when these kinds of things happen to older ppl and to sick ppl they have a lotmore difficult time getting through it the the the best kind of patient to have to go through this is someone healthy like you..and uh and uh		
P	(quiet) Ok. I can't think of anything else.		
D	I know!		
P	I feel like my head's gonna explode!		
D	I knw! I know! Its WAY too much information to try to take in at once.		
P	R U sure..IM there's no way that this was a mistake?		
D	Its SO rare for this to be a mistake. IM were never 100% sure on anything. But they really are on this. When the pathologist looks at the cells they either are or they are not. And in this case…they…put a lot of failsafes into their diagnostics on these things…bc we never want to bring this news to someone that we don't have to.		
P	Silent		
D	Again, the next big step is to get you staged and find out where you are so we can make a plan and so we can we can get through this.		
P	(inaud)		
D	Im going to go ahead and find out about your appointment and get some materials for you. Do you need some time to just be alone? I understand…		
P	(nodding) yes.		
D	If you need me or if you need the nurse just push the button and well be right back in here, OK?. Again, I am just sop sorry for this.		
P	Thank you.		
D	We'll find a way through, OK?		
P	All right.		

VITA

Kimberly Lynn van Walsum received her Bachelor of Arts degree with distinction, from the Honors Psychology program at Trinity Western University in British Columbia, Canada in 1989. She received her Master of Education in Counseling from McGill University in Montréal, Québec, Canada in 1991. Kim worked as a counselor at the prestigious bilingual École St-Georges School of Montreal before embarking on a yearlong sailing cruise down the East Coast of the U.S. and into the Bahamas. Upon her return to the U.S., she worked with the rural poor in Vermont designing and delivering community mental health services for children. Kim entered the APA program in Counseling Psychology at Texas A&M University in College Station in 2000. While at Texas A&M University she pursued her interest in health psychology through a research assistantship in the Texas A&M University System Health Science Center/College of Medicine. In 2004 she was invited to participate in a groundbreaking new internship track in Behavioral Health at the University of Texas at Austin's University Health Service. Kim has published in the areas of asylum history, relational influences on the physician patient working alliance, and medical education. Following her Ph.D. Kim will be employed as an Assistant Professor and Educational Director of Clinical Simulation at the Texas A&M University System's Health Science Center/ College of Medicine in Temple, Texas. She plans to continue research on human and relational factors in medicine. She is developing a private psychology practice in Central Texas specializing in health psychology and mindfulness based stress reduction. She may be contacted at the Texas A&M University System Health Science Center/College of Medicine, 2401 South 31st Street, Temple, TX 76508 or by email at k.vanwalsum@medicine.tamu.edu.