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CARING TO LEARN, BUT LEARING TO CARE?:
THE ROLE OF EMPATHY IN PRECLINICAL MEDICAL TRAINING

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By

Barret A. Michalec
M.A., East Carolina University, 2004

Advisor: Corey, L. M. Keyes, Ph.D.

An abstract of
a dissertation submitted to the Faculty of the Graduate School of Emory University
in partial fulfillment of the requirements for the degree of
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Abstract

CARING TO LEARN, BUT LEARNING TO CARE?: THE ROLE OF EMPATHY IN PRECLINICAL MEDICAL TRAINING

By Barret A. Michalec

This project examines the empathy levels of first and second year students at one particular medical training institution, and the potential mechanisms behind any changes in those empathy levels. Data was gathered from July of 2007 to May of 2008 employing surveys, observations of classes, labs, and small groups, and interviews with students and administrators. It was found that first and second year students decreased significantly in clinical empathy during the course of the academic year. Although the negative impact of stress was found to not be a significant predictor of the decrease in empathy, it was suggested that students shed empathy in order to become less vulnerable to medical school stressors. Furthermore, decreases in hours of first- and second-year curriculums devoted to the discussion and practice of patient-centered care, lack of formal evaluation in communication skills and connectivity, and a "knowledge gap" accentuated by the hidden curriculum, are each argued to have led to the decrease in clinical empathy among preclinical students. Researchers, physicians, instructors, and patients all argue that empathy is a valuable asset in medical care that provides positive mental and physical health outcomes for doctors and patients. This study suggests that in order for clinical empathy to be taken seriously by students, medical schools must integrate formally graded exams (standardized patient exercises, and vignettes) on the skills associated with empathy into the preclinical curriculum.

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TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

DEFINITIONS AND CONCEPTUALIZATIONS

Introduction

Studies have shown that patients who perceive their doctor to be empathic also report higher satisfaction with their doctor, higher compliance with their doctor's suggestions, and even have better outcomes in terms of their physical and mental health (Robbins et al. 1993; Beckman and Frankel 1984; Falvo and Tippy 1988). Similarly, doctors who have high levels of empathy toward their patients report higher levels of job satisfaction (Horowitz et al. 2003). Suchman et al. (1997), however, suggest that there are many opportunities for doctors to express empathy towards their patients, yet a number of physicians frequently do not acknowledge these situations and neglect to react to both direct and indirect expressions of affect. This lack of expression of empathy among doctors poses a threat to the quality of the doctor-patient relationship. Furthermore, reports indicate that a number of patients are dissatisfied with how their doctors communicate with them, stating that their doctors are uncompassionate, make them feel rushed, and treat them as the symptoms and diseases rather than human beings (Katz 1984; Shorter 1985).

The absence of empathy from doctors appears to lead to higher levels of patient anger and resentment regarding their health outcomes. Lester and Smith (1993), and Levinson et al. (1997) found that the lack of positive, empathic communication behaviors exhibited by the doctor (i.e., no outwards signs of positive affect, harsh tones, no friendly physical contact) actually increased the risk of a malpractice suit being filed against them,

and other research has suggested that these negative communication behaviors are a significant source of the recent rise in litigious action towards physicians (Bernstein 1987; Edwards 1989; Olsen 1991). Put simply, empathic physicians not only have patients with better medical outcomes, but are considered better doctors, enjoy their job more, and are less of a financial burden on hospitals, clinics, and other areas of medical practice. Since empathy and emotional support from doctors are so beneficial in the medical encounter, attention has recently shifted to understanding whether and how empathy is cultivated during medical school.

Research highlights a shift in medical students' attitudes and values during their medical school years, and notes an increase in cynical attitudes and a decrease in expressions of humanitarian feelings (Wolf et al. 1989; Whitemore et al. 1985). Focusing primarily on empathy of medical students in the clinical years (i.e., the 3rd and 4th years of medical school), studies have shown that medical students are often judged to be inadequate in terms of empathizing with patients and acknowledging patients' anxieties and emotional cues (Hornblow, Kidson, and Ironsides 1988). Similarly, Diseker and Michielutte (1981) and Hojat et al. (2004) found a significant decline in empathy among 3rd year medical students during the course of this clinical year, and Kramer, Ber, and Moore (1989) suggest that this 'dehumanization' may be attributed to increased ward responsibilities for patients, as well as "adopting patterns of communication demonstrated to them by their role models" (168).

Clearly, aspects of medical training and medical education are influencing medical students' reports of empathy. Unfortunately, due to the focus of past research on the experiences of 3rd and 4th year medical students, little is known regarding the

experiences of medical students during their preclinical years and how these experiences may influence their levels of empathy. What is evident from literature regarding 3rd and 4th year medical students, however, is that two main aspects of medical training, namely increases in academic/clinical responsibilities and pressures to perform, and the internalization of behaviors, attitudes, and values expressed by others, have significant impact on medical students' reports of empathy (Marcus 1999). Therefore, this project addresses how the stress related to medical training, and the socialization processes within medical education may impact preclinical students' levels of empathy.

Medical socialization occurs in both formal and informal fashions (Hafferty 1998). In this project, socialization, both formal and informal, is conceived as a climate within—or the ecology of—medical school, suggesting that all students are exposed to this atmosphere. Although experiences within medical training are somewhat subjective, all students encounter explicit and implicit aspects of medical training through their courses, labs, and small groups, as well as their interactions with professional medical staff, medical school faculty, and other medical students (Lief and Fox 1963). Although there may be a dramatic shift in empathy among 3rd year medical students, it is important to understand if the suggested mechanisms of socialization behind this shift impact students' earlier in medical training. Therefore, this project addresses the informal and formal avenues of socialization that medical students experience and investigates how these experiences may influence 1st and 2nd year medical students' reports of empathy.

This study argues that not only do medical socialization processes have a significant impact on students' empathy levels, but also that the general stressors and demands of medical school experienced in the first two years can negatively impact

students' ability and willingness to connect with others. Perhaps it is not *how* the material is taught but *how much* material is taught and the stressful nature of medical training itself that is to blame for the decreased levels of empathy. This approach to understanding how the rigorous demands of medical training impact particular personal attributes of students is often raised, as studies frequently depicted a significant increase in students' levels of stress, anxiety and depression during their first two years of medical training (Stewart et al. 1999; Stewart et al. 1997; Tooth, Tonge, and McManus 1989), but rarely undertaken with preclinical students, and even more rarely explored parallel with medical socialization processes. Therefore, this project also investigates medical school stressors, how they influence medical students' lives, and how the wear and tear of medical school stress may have detrimental effects on medical 1st and 2nd year students' levels of empathy.

Taking these individual-level and organizational-level perspectives, and utilizing both qualitative and quantitative methodologies, the aims of this study are to identify change in preclinical medical students' reports of empathy and investigate potential mechanisms and aspects within medical school preclinical training, and within the students themselves, that may serve as catalysts to these potential changes. Medical education literature often neglects the experiences of preclinical medical students, citing the clinical years as the more formative in terms of shaping students' values, attitudes, and perceptions. Yet, in order to fully understand how aspects of medical training may impact future doctors' levels of empathy, it is necessary to dissect these first two years.

Conceptual Overview

This study unearths possible mechanisms within preclinical medical training that may impact 1st and 2nd year students' reports of empathy, focusing specifically on the stressors associated with medical education and the explicit and implicit socialization processes that are nested within the rearing of future doctors. Neglected by a majority of previous research, this project spotlights the events and experiences of preclinical medical students during this initial phase of their training and examines potential culprits behind the possible change in students' empathy at micro, meso, and macro levels of medical education. Yet, in order to better understand how these aspects of medical education may influence students' empathy, it is important to elaborate on particular concepts discussed thus far.

What is Empathy?

The experience of empathy (in these processes) stems from the recognition of an individual in some form of distress or need (Batson 1991; Eisenberg et al. 1994; Davis 1996). The observer evaluates particular cues from the expression of distress (verbal and/or nonverbal) and, through shared meanings with their interaction partner, recognizes that the victim of the stressor is experiencing a negative emotional state. Such recognition and concern directly stimulates the cognitive and affective experience of empathy (Roberts and Strayer 1996). Therefore, within this paper, empathy is defined as an emotional and cognitive experience of another's emotional state.

Although every individual may have the capacity to experience some degree of empathy, empathy can be cultivated through experience and can be taught through

teaching and practice (Nathanson 2003; Roberts and Strayer 1996). According to Nathanson (2003: 113),

> [w]e may be born with the capacity for empathy, but the actual experience of empathy requires certain skills or tendencies that develop over time, including perspective taking, and inference abilities, a sense of person permanence and personal identity, emotional insight, and moderate levels of emotional responsiveness.

Empathy is therefore characterized by its other-oriented nature (Hart 1999), an emotional response (Batson et al. 2005), and taking the perspective of the other person (Eisenberg and Miller 1987).

Because the experience of empathy is rooted in the other's emotional state, the observer must cognitively evaluate and interpret the other's emotional state. Furthermore, the observer must then understand that they are in fact experiencing the same, or at least a similar emotional state as the other person (Feshbach and Roe 1968). Zillman and Cantor (1977) argue that the empathic process begins ". . . as a result of witnessing the emotional state of another person, he (the observer) comes to 'share' that emotional state" (156). Whether this is a primarily an emotional happening, the product of personal cognitive abilities (Roberts and Strayer 1996), or an additive feature of both aspects (Davis 1996; Thornton and Thornton 1995) is still under debate. It is assumed, however, that the experience of empathy is a result of both emotional understanding as well as certain cognitive skills.

What Is The Function of Empathy; What Is An Empathic Physician?

The practice of medicine is, by definition, a formal and professional arena within which doctors and nurses are trained to engage in helping behavior. Therefore, research has recently turned to exploring the role of empathy and empathic communication within doctor-patient interactions (Arling 1958; Wilmer 1968; Spiro 1992; Zinn 1993; Suchman et al. 1997; Anonymous 2007). As discussed earlier, empathic physicians not only have healthier and happier patients but are happier themselves. Therefore, understanding what makes a physician empathic provides information into how to improve doctor-patient relations, as well as the health and well-being of patients and doctors alike. However, along with being trained to help patients by actively listening and communicating in a positive, empathic manner, doctors are also trained to examine and uncover what ailment the patient suffers from by utilizing a wide breadth of knowledge regarding symptomology, diseases, and potential treatments, and then conducting a series of physical and technological tests. Researchers contend that these two arenas of training often conflict with one another, and unfortunately, it is the empathy training that is lost in favor of a more bio-medical, technologically based approach to patient care (Marcus 1999; Rosenfield and Jones 2004). The following section dissects popular conceptions of empathy in the world of medicine, highlighting the potential conflict medical students must face in terms of learning to cure and learning to care.

Often in this particular realm of medical literature, the term empathy is used interchangeably with the more specific concepts of "clinical empathy" (Halpern 2001), or "physician empathy"[1] (Hojat et al. 2002; Hojat et al. 2003), to denote the level of

[1] For the sake of simplicity I will use the terms "clinical empathy" and physician empathy" interchangeably as well.

empathy experienced by the physician towards the patient and/or patient's family. Arling's (1958) work, *Sympathy and Empathy*, serves as one of the earliest discussions of the role of empathy within medical practice. Arling argues that physicians should refrain from feeling *with* the patient, "A subtle and significant feature of a happy medical practice is to remain unencumbered by the patient's problem" (452). Although Arling states that it is important for physicians to appreciate and recognize their patients' feelings and emotions (as well as their own), putting themselves in the emotional 'shoes' of their patients would only complicate the doctor-patient relationship.

These early sentiments were later echoed by Herrman Blumgart (1964), who agreed with Arling's notion that feeling a patient's emotional state could lead to a lack of objectivity and poor patient outcomes. Specifically, Blumgart called for "neutral empathy" or "compassionate detachment," where "one enters into the feelings of one's patient without losing an awareness of one's own separateness" (451). The essence of neutral empathy and compassionate detachment for Blumgart is not ignoring the patient's emotional state, and not joining it, but rather appreciating it. The power of neutral empathy is to be free of the problematic chains of emotional attachment. Although Blumgart does emphasize the importance of actively listening to a patient, he clearly advocates a detached version of empathy that is similar to that expressed by Arling.

Sir William Osler (1932), the champion of patient focused care, believed that doctors should learn and practice to control the physiological manifestations of their emotions such as blushing, grimacing, and even sweating.

> Even under the most serious circumstances, the physician or surgeon who allows his outward action to demonstrate the native act and figure of his heart in complement extern,

> who shows in his face the slightest alteration, expressive of anxiety or fear, has not his medullary centres under the highest control, and is liable to disaster at any moment (4).

In his writings and teachings, Osler promoted the notion of "equanimity," an attitude towards medical practice that allows the physician to recognize that the doctor and patient share the same human qualities and attributes. When exercised properly, according to Osler, a physician's equanimity enables them to be outwardly and inwardly composed in the face of distress experienced by others. Osler states, however, this equanimity can only be achieved through an emotionally detached position from the patient. Osler believed that a good doctor is not emotionless in the face of patients but rather is well trained at detaining his or her emotions during medical practice. He or she is above their emotions and therefore can more objectively understand and treat their patients.

Lief and Fox (1963) suggest that a doctor's experience of empathy includes a feeling of "being on the same affective wave length as the patient" (12). Along with this emotional understanding of the patient, Leif and Fox state that physician empathy also involves a conscious understanding by the doctor of the distinct position between themselves and the patient. They argue that the empathic physician remains detached from the patient while balancing a level of concern so as to not only exercise objective medical decisions but also present sensitivity and understanding. The authors label this set of attitudes as "detached concern", and propose that medical students' internalize these attitudes through a series of experiences and witnessing these attitudes in action by practicing physicians.

More (1996) argues, however, that concern is not a product of the experience of clinical empathy. Rather, the physician's empathic experience is neither objective nor subjective, and there is not a level of detachment or identification between the physician and patient, but rather "The physician is *present* with the patient" (245). The author emphasizes the dialogical connection between the patient suggesting that it is through the cycle of relation and interpretation that the physician is able to communicate the experience of empathy. More states that physician empathy is more than a mere affective and/or cognitive experience and discusses empathy as almost a transcendental experience in which there is a higher form of connectedness between the doctor and patient that exceeds objective and subjective boundaries.

In a study investigating whether certain training exercises can increase medical students' empathy levels, Feighny et al. (1998) define physician empathy as the combination of the ability to understand the needs of the patient, a heightened sensitivity to the patients' affective state, and the actual ability to relate those qualities to the patient with purposeful behavior. According to the authors, this broad definition encompasses the cognitive, affective, and behavioral elements of physician empathy. Their work highlights an important aspect of the literature on physician empathy, the behavioral element. Communication skills and the ability to express compassion and empathy for patients are frequently proposed in the literature as valuable features of empathic physicians.

Discussing communication skills affiliated with empathy, Benner, Kidis, and Stannard (1999) emphasize how skills like clinical empathy are cultural interventions quite distinct from how people naturally affiliate emotionally with each other. In their

work, they discuss how unnatural it is for health care providers to appreciate the emotional worlds of patients without confusing them with their own. Researchers contend that the physician's ability to understand and empathize with the patient is of the utmost importance and value to the patient's outcome and the doctor-patient relationship (Evans, Stanley, and Burrows 1993; Marcus 1999; Elizur and Rosenheim 1982; Silvester et al. 2007). Previous studies, however, portray the difficulty physicians (and medical students) face when attempting to balance the emotions they experience and the desire to maintain an objective detachment (Halpern 2001; Branch et al. 1993).

Halpern (2001) discusses clinical empathy in her work *From Detached Concern to Empathy*, in which she promotes a model of empathy based on emotional reasoning. According to Halpern, "what makes (clinical) empathy therapeutic is not the intensity of a physician's positive feelings for a patient, but the ability of the physician to understand a patient's emotional point of view" (17), for this understanding of another's emotional perspective, she states, is the *goal* of empathy (68).

Halpern contends that previous work regarding clinical empathy falls into two basic camps, one that emphasizes detached knowledge, and the other that emphasizes affective merging. According to Halpern, authors such as Arling, Blumgart and Osler each represent a detached, cognitive insight model of empathy, and that such a model of empathy does not serve the patients' best interest, because it neglects to understand the patients' experience and the context of the patient's emotional state. However, regarding the opposing camp - affective merging - Halpern contends that emotional resonance does not fully entail what it means to be empathic. Much like the cognitive insight perspective, Halpern believes that the affective merging view does not yield the full

understanding of the patients' emotional stance. For Halpern, clinical empathy experienced by the physician entails being affected by the patient's emotional state (and expression of that state), and the recognition and appreciation of the patient's emotion in "some quasi-first-person-way" (74). Furthermore, she stresses the importance of physicians using their imaginations to better understand and experience how patients may feel given their ailment and situation. "Rather than feeling what, specifically, another feels about a similar particular (affective merging), I argued that the listener *imagines* how the experience feels" (92 parentheses added).

The authors presented above make a distinction between the cognitive and the emotional aspects of empathy. Although Halpern's ideas are the closest to recognizing an emotional connection between doctor and patient in clinical empathy, it is evident that the detached perspective is the most common viewpoint on the ideal expression of empathy among physicians.

Empathy and Clinical Empathy: Conceptually Different?

There appears to be a significant difference between empathy in the social-psychological sense and clinical empathy as it is represented in the medical literature. Whereas empathy in the social-psychological sense features both the cognitive and emotional aspects of the experience, clinical empathy focuses specifically on the cognitive element and denounces the notion of "sharing" the emotional state of another. Hojat et al. (2003) define Physician Empathy as "A *cognitive* (as opposed to affective) attribute that involves an *understanding* of the inner experiences and perspectives of the patient, combined with a capability to *communicate* this understanding with the patient"

(28). In contrast, the social-psychological literature suggests that if an individual experiences even a minimal level of empathy with another, this experience represents some level of emotional attachment.

Medical researchers Howard Spiro (1993) and Shimon Glick (1993) provide a more social psychological conceptualization of clinical empathy. They argue that it is possible to engage in this type of empathy, connecting cognitively and emotionally with patients, and still be a highly skilled physician. "Empathy… underlies the qualities of the humanistic physician and should frame the skills of all professionals who care for patients" (Spiro 1993: 7). Spiro even suggests that the current view of clinical empathy lacks the emotional aspect of the experience but states that Osler's idea of equanimity can co-exist with the empathy in the contemporary medical setting.

According to Glick (1993), empathic physicians hold an exceptionally high regard for human life, maintain altruistic values in regards to their practice and social lives, are mature emotionally, are well trained in the diagnostic and therapeutic aspects of medicine, and hold high ethical standards for themselves. Glick notes the inverse relationship between the increase in technological advances in medicine and the decrease in reports of caring physicians made by patients and much like Spiro, argues that the favoritism placed on technology rather than kindness, the increase in medical specialization, and an actual decrease in motivation of doctors[2] to be caring, are three fundamental causes of the decrease in compassion and empathy in the medical field (87-88). According to both Glick and Spiro, these aspects of medicine are adding to the deconstruction of empathic physicians. A number of researchers argue, however, that it

[2] Glick acknowledges that this trend of decreasing motivation to be caring is not merely limited to the medical profession but actually a by-product of contemporary Western culture.

is not merely the state of contemporary medicine and medical culture that has led to this decline (Rezler 1974; Kupfer et al. 1978; Rosenfield and Jones 2004). Rather, they argue that particular aspects of medical education propagate the devaluing of empathy as well as socialize students to become less empathic physicians.

Clearly, there is debate on the conceptualization of empathy in regards to patient care. Given the ambiguity of the concept in the literature, it is important to question how empathy is actually addressed in medical school classes, labs, and small groups. In what ways are contemporary medical students learning how to care? This thesis not only investigates the potential shift in preclinical medical students' reports of empathy, but also examines elements of the explicit and implicit curriculums of preclinical medical education that may impact these reports. The goal of this particular aspect of the study is to spotlight the influential nature of formal and informal socialization processes within preclinical medical training.

Socialization

According to McWhinney (1995), Lown (1996) and others, modern medicine relies heavily on technological procedures, evidence-based clinical knowledge, and does little to foster humanistic qualities in medicine. It has been suggested that during the course of their training, medical students' attitudes, values, and behaviors shift to reflect the upheld culture of medicine through processes of medical socialization (Fredericks and Mundy 1976; Bloom 1979). The stages of medical training are designed to expose participants to experiences that help them acquire the appropriate skills, attitudes, and behavioral dispositions required for success in their future role (Coombs 1978). During

each stage, students are molded through the explicit, implicit, and hidden curriculums to fit the role of physician.

In the classic work, *The Student Physician*, Merton (1957) contended that socialization served as the ". . . processes through which individuals are inducted into their culture. It involves the acquisition of attitudes and values, of skills and behavior patterns making up socials roles established in the social structure" (41). Socialization refers to the social conditioning processes whereby an individual internalizes the knowledge, skills, values, and behaviors deemed appropriate by socializing agents, entities that instruct or influence (teachers, group leaders, classmates) (Coombs 1978; Hafferty 1988). Therefore, it is through these socialization processes that medical students learn to behave as a doctor *should* with colleagues and with patients. It is through these processes that medical students learn how to care. This specific project explores aspects of the formal and informal socialization processes by observing and analyzing students' experiences within the explicit, implicit, and "hidden" curriculums of medical education.

Formal Socialization: The Explicit Curriculum

An organization, such as a medical school, has series of structured events and evaluative measures that train students to understand what is expected of them and display what it means to be in the role they seek. Events such as lectures, labs, and small group sessions provide the medical student with explicit examples and evidence of the formal knowledge and actions of being a doctor. Often this form of socialization occurs within the formal or explicit curriculum. The explicit curriculum refers to learning in

regards to scientific facts, body systems, appropriate volumes and masses of prescriptions or treatments, labels of organs and diseases, as well as any other issue that relates specifically to the advancement of formal medical knowledge for the student such as that provided in lectures and lab settings (Wear 1998). These formal teachings reflect the current foci of the culture of medicine, "Technological orientation has supplanted human orientation in diagnosing and treating patients, and this tendency dominants the doctor's bedside manner as well as the teaching of medical students" (Kramer, Ber, and Moore 1989: 168). How instructors discuss concepts such as doctor-patient communication, how patients and cases are discussed, how many credits are allotted to particular classes (biomedical and social aspects of medicine), and the mechanisms by which students are evaluated are all important aspects of the explicit curriculum.

Informal Socialization: The Implicit Curriculum

The internalization of values, behavioral traits, and attitudes comes not only formally but also through informal processes such as role modeling behavior, imitation and identification, and is reinforced by social sanctions (rewards and punishments) (Wear 1998). These role modeling and identification processes represent the informal curriculum of medical school. Students exercise particular values and behaviors exhibited by those who currently maintain the role the student strives for (such as a doctor in the clinic they are working in, the instructor of one of their classes, or even a fellow student they admire) to build self-esteem and to garner a better understanding of the role they seek. These behaviors and values not only reflect the culture of medicine,

but when re-enacted and internalized, reestablish the norms and legitimacy of the larger organization.

The "Hidden" Curriculum

Much like the informal curriculum, the "hidden" curriculum influences students' behavior and values outside of the course materials and formal lessons, and when internalized by the student, reflects the values and norms of the institution and the authority of its players (Jackson 1968). Elements of the hidden curriculum can be found in customs, rituals, and everyday experiences within medical training and have been argued to replicate ideologies regarding inequality and stratified relationships (Hafferty and Franks 1994). "..the traditions of the hidden curriculum remain similar: education is an agency of differentiation and stratification, holding the keys that access valued cultural elements" (Margolis et al. 2001: 18). Hence, the hidden curriculum reflects the standards and ideals of the medical field, serves to differentiate between the role of physician and everyone else, and highlights the authority of the doctor over the patient. "Medical training is not just learning about become a physician, it involves learning how to 'cease' to be a lay person" (Hafferty and Franks 1994). This particular element of the hidden curriculum instructs medical students that they are no longer lay people—they are emerging physicians, gaining knowledge and information that grants them a degree of power in their relations with others. In this sense, the hidden curriculum can "teach" students that medical knowledge is more valuable than patients' knowledge, thereby creating distance between doctors-to-be and lay-persons.

This specific project investigates potential changes in preclinical medical students' levels of empathy from two separate (yet related) approaches. The first approach highlights how socialization processes within the explicit, implicit, and hidden curriculums of preclinical medical education may affect students' levels of empathy. The second approach identifies the stressors of preclinical medical education, and examines how the impact of these stressors on students' lives may impact their reports of empathy and other personal attributes. The experiences of preclinical medical students have long been neglected by medical education researchers. This thesis employs quantitative and qualitative methodologies to explore how aspects of the first two years of medical training have significant impact on students' reports of empathy.

Research Questions

- Are there changes in students' reports of clinical empathy and/or general empathy during the preclinical years of medical school?
- Are there differences among and/or between first and second year students regarding their reports of clinical empathy and/or general empathy?
- What stressors associated with medical school do first and second year students find most harmful?
- How do the stressors associated with medical school affect preclinical students' levels of clinical and general empathy?
- How does first and second year students' mental health affect their levels of empathy?

- Is there a relationship between students' personality and their levels of empathy?
- How do elements of the explicit, implicit, and/or hidden curriculums within medical education affect first and second year students' levels of empathy?

Hypotheses

- First and second year students' reports of empathy (both clinical and general) will decline from Time 1 to Time 2.
- Reports of the decline in empathy (both clinical and general) will vary between first and second year students, in that second year students will report a larger decline than first year students in both measures of empathy.

I believe that the decrease in clinical and general empathy actually begins within the first year of medical school because first year students experience similar noxious elements of medical training as those outlined in previous literature to have an impact on third year students' levels of empathy (i.e. heightened stress, interactions with hospital/clinic staff, exposure to death and dying, etc.). Furthermore, because second year students have been exposed to these negative aspects of medical education for longer periods of time their grade cohort will experience a larger decline in empathy than first year students.

- First and Second year students will report similar stressors as harmful and these will be more academic-related stressors.

- The stressors associated with medical school will be a significant predictor of the change in students' empathy for both first and second year students.

Because a majority of doctor training in the first and second year occurs within the classrooms, labs, and small groups, and students' evaluations during these primary years are based significantly on their performance on exams, preclinical students' stressors will be predominantly in regards to academic achievement. As stated earlier, medical school related stress was a major predictor of the decline in empathy among clinical students, therefore it is likely that I will find similar results with first and second year students.

- Positive mental health will be associated with lower levels of empathy at Time 1 and Time 2, and for both grade cohorts. Furthermore, mental health will serve as a predictor of the change in empathy for either grade cohorts.
- Students who are more extroverted will report higher levels of empathy at Time 1 and Time 2, and for both grade cohorts. Personality measures, however, will not serve as a predictor of the change in empathy for either grade cohorts.

As will be discussed in more detail in the following chapter, research has indicated that certain levels of expressed empathy are related to elements of positive mental health (Goldstein and Michaels 1985). It is argued, however, that because medical students are frequently confronted with death and disease, their levels of

emotional, psychological, and social well-being are negatively affected. Furthermore, the experience of empathy renders the observer emotionally vulnerable to some extent (Halpern 2001). Empathy, in this sense, could actually have detrimental effects on well-being, therefore it is suggested that positive mental health will be associated with lower levels of empathy at Time 1 and Time.

Individuals who are considered "extraverted" as often described as outgoing, friendly, active, and talkative (Miller et al. 2001), and that they enjoy making connections with others. Give that the experience of empathy is rooted in the ability and willingness to connect with another individual it is suggested that extraverted students will report higher levels of empathy.

- First and second year students will report that elements of their formal education have an impact on their levels of empathy. First year students' reports, however, will be much stronger than second year students' reports.
- First and second year students will speak of an implicit training exhibited by the actions, behaviors of medical school instructors, administration, fellow students, practicing physicians, and that this informal education has had some impact on their levels of empathy.

Second year students will have had more experience within the formal curriculum, and perhaps have been able to recognize and employ various means by which to cope with the negative aspects of their training. The "New" curriculum within County School of Medicine, however, focuses heavily on the Bio-Psycho-Social approach to

medicine, paying special attention to patient-centered care. Nested within their training, this emphasis will likely lead first year students to report that their curriculum has impacted their attributes in a positive manner.

As noted earlier, first and second year students interact frequently not only with school faculty and administrators but with hospital and clinic staff as well. The implicit "teaching" that occurs through these interactions during the preclinical years has simply not often been explored by previous research.

- First and second year students will report "critical events" they have experienced that had a significant impact on how they view connecting with patients.
- First and second year students will report that empathy is an important element in patient care, but that aspects of the current culture of medicine encountered within their training hinder the cultivation and practice of empathic behavior.

These notions were evident in the work by Branch et al. (2003). When analyzing "critical incident reports" written by clinical medical students, Branch and colleagues found four main sources of conflict for students during these experiences: expression of empathy, difficulty acculturating, the struggle between empathy and acculturation, and blending empathy with acculturation. The Branch et al. study shows that clinical medical students face difficulty trying to be empathic and still practice the behaviors and attitudes expressed by those around them (particular hospital and clinic staff), as the two tasks do

not always coincide.

- Elements of the hidden curriculum will be evident within the first two years of medical education.

Work by Hafferty and Franks (1994), Hafferty (1998), and Wear and Castellani (2000) suggests that elements of the hidden medical curriculum could be active within preclinical training. I therefore suggest that this project will provide evidence for the hidden curriculum.

CHAPTER 2

METHODOLOGY

Research Objectives

The main objectives for this project are to highlight changes in preclinical students' reports of empathy and uncover possible mechanisms behind those potential changes. More specifically, this study examines how the stressors associated with medical school, as well as the socialization processes (namely aspects of the explicit, implicit, and hidden medical curriculums) nested within medical training can impact students' reports of general and clinical empathy.

Research Design and Methods

This thesis investigates four characteristics of preclinical medical education (stress, explicit curriculum, implicit curriculum, and hidden curriculum), suggesting that each may have an impact on students' levels of empathy. Given the broad nature of the research objectives, a multi-method approach was utilized to probe the presented research questions. Employing mixed methods has been shown as an appropriate and valuable means to investigate *if* and *how* particular social phenomenon occurs (Plano Clark and Creswell 2008). Regarding the study of medical students, notable examples of projects with a well designed and executed multi-method approach have been Becker et al.'s, *Boys in White* (1961), Leserman's *Men and Women in Medical School* (1981), Fredericks and Mundy's *The Making of a Physician* (1976), and Coombs' *Mastering Medicine* (1978). Each of these works employed interviews and quantitative analyses to explore

particular elements of medical training[3]. These studies, particular *Mastering Medicine* have served as templates of mixed-methods research within the medical setting as well as guides to how to effectively investigate ambiguous topics in medical training such as socialization and stress. However, given the steps a number of medical institutions have recently taken to alter their medical curriculum to maintain LCME accreditation and to reflect a more patient-centered approach to doctoring (i.e. Harvard, UCSF, and Duke, among many others including the institution studied in this project[4]), there exists a void in the literature concerning a more contemporary perspective on medical education and medical training. This particular project not only fills that gap but also spotlights the value and significance of multi-method research.

In this project I utilize a survey (quantitative) to properly measure *if* medical students' attributes (namely empathy) actually do change over the course of a school year. Furthermore, to sufficiently investigate *how* and *why* these attributes are changing, I engage in both in-depth, semi-structured interviews with medical students, instructors, and administrators, as well as observe both students and instructors during courses, labs, and small groups throughout the school year (qualitative).

Clearly, the survey is the most efficient and best suited method to directly test shifts in medical students' attributes. Similarly, observations are most suitable to identify elements of the formal, informal, and hidden curriculum that could be influencing medical students' attitudes. Information gleaned from these observations can be raised within the interviews to investigate what elements have the most influence and how they are impacting students' perceptions and behaviors. Perhaps most important in identifying

[3] Becker et al. (1961) and Coombs (1978) also employed observations of students in their works.
[4] The alterations and new emphases of the curriculum will be explained in-depth in Chapter 5.

aspects of medical school training that have impact on students' lives is the utilization of in-depth, semi-structured interviews. Interviews are most fitting to explore students' own notions of how their attributes, attitudes, beliefs, values, and behaviors may be changing during their training, as well as identifying particularly significant experiences and events in their own words.

Study Setting

County School of Medicine[5] has over 450 students, roughly 1000 residents and fellows, about 50 MD/PhD students, and over 300 students in five allied health programs. Faculty clinicians in the eight affiliated hospitals are responsible for 2,700 patient beds and more than 2 million patient visits annually (Course Bulletin 2006).

Along with a new, state-of-the-art medical education complex, the school's curriculum has recently undergone alterations which were implemented with the class of 2011. This "new" curriculum was constructed in order to provide students with a strong focus on patient centered care, the techniques and professional aspects of doctoring, and extended time to practice in real-life medical encounters by increasing the amount of time students spend in the clinics and hospitals rather than the classroom. This new curriculum was constructed to encompass each of the four years of medical school. Therefore, the class of 2011 will be the first to experience each year of the new curriculum. Hence, the curriculum experienced by the class of 2010 (the M2's of 2007-2007-2008), and all classes before them, which emphasized clinical expertise and bio-medical knowledge, will cease to exist at County's School of Medicine after 2010[6].

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[5] County School of Medicine is a pseudonym.
[6] Chapter 5 presents details of each grade cohort's explicit curriculum.

Characteristics of Sample

Of the entire sample (M1's, M2's, and M3's[7]), 65.6% of the students were white, 6.8% were Black, 9.6% were Asian, 10.1% were Indian, 3.9% were Latino(a), 2.5% were Bi-racial, and 0.8% considered themselves to be of an "other" race. Of the M1 students, 57 were male and 63 were female. The average age of the first year students was 25 but ranged from 20-31. There were 47 males and 54 females in the M2 grade cohort. The M2's ranged in age from 22-35, and the average age was 27. The average age among the M3 students was 25, and the ages ranged from 23-41. There were 54 males and 54 females in the M3 grade cohort.

The Survey[8]

Empathy

In order to directly test levels of empathy in M1, M2, and M3 students a survey was constructed that contained the Jefferson Scale of Physician Empathy (JSPE) (Hojat 2007), as well as the condensed version of Balanced Emotional Empathy Scale (BEES) (Mehrabian 2000). Survey methodology is arguably the most efficient and most simple means of acquiring rich individual-level data, such as measuring medical students' attributes (Schutt 2009). Given the discrepancy between empathy in the social psychological sense and clinical empathy, this project would be inadequate if it were to only examine empathy in only one manner. Therefore, explicit efforts were made to include measurements of both empathy in the social psychological sense (BEES), and

[7] Third year students are use merely as a comparison group in the quantitative portion of this study.
[8] A copy of the survey is not included in this dissertation because of copyright issues pertaining to particular measures.

physician empathy specifically (JSPE). Utilizing both measurements of empathy provides a broader understanding of these two forms of empathy in the medical setting, depicts how reports of empathy differ among and between M1, M2, and M3 students, as well as highlights which of the two forms are more likely to change during the span of a school year. Most importantly, these tests spotlight where (what years of medical training) there are significant changes in students' reports of empathy. Both measures have been shown to be both reliable and valid (Mehrabian 2000; Hojat et al. 2002; Hojat et al. 2003). The condensed BEES consists of 7 items. Students were asked to indicate to what degree they agreed or disagreed with a particular statement (1 being strongly disagree and 7 being strongly agree)[9]. The JSPE consists of 20 items and utilizes the same 7-point answer scale. Missing data were recoded to the mean.

As stated earlier, this study investigates potential changes, not only in students' levels of empathy, but in other personal attributes as well. Therefore, along with directly testing levels of empathy with the BEES and JSPE, my survey includes measurements for assessing particular personality characteristics, and dimensions of positive mental health.

Personality Traits

To test if certain personality traits are related to, or have an effect on, levels of empathy a condensed version of the NEO Personality Inventory (NEO-PI-R), a reliable and valid measure of personality traits was included in the survey (Miller et al. 2001; Miller and Lyman 2003; Dunkley et al. 2006). The NEO-PI-R contains measures for what has become known as the Big Five model of personality which includes

[9] Although the BEES as constructed by Mehrabian utilizes a 9-point answer scale (1 being strong disagree and 9 being strongly agree), the BEES was limited to a 7-point answer scale in this particular project to provide for a more consistent and cleaner instrument.

extraversion, neuroticism, agreeableness, conscientiousness, and openness to experience. This project focuses specifically on how elements of professionalization and the stressors of medical training potentially impact students' reports of empathy, and therefore only those traits that are measured with adjectives reflecting aspects of stressor or other-orientation were included in the survey[10]. Therefore, I elected to only include the measures for Extraversion (outgoing, friendly, lively, active, talkative), Neuroticism (moody, worry, nervous, calm[11]), and Conscientiousness (organized, responsible, hardworking, careless[12], and thorough).

Mental Health

Research has indicated that certain levels of expressed empathy are related to elements of positive mental health (Goldstein and Michaels 1985). It is argued, however, that because medical students are frequently confronted with death and disease, their levels of emotional, psychological, and social well-being are negatively affected. Furthermore, events and experiences during the process of medical training, as well as the overall impact of loss of personal time and increased anxiety from academic pressures may have an effect on medical students' mental health. In order to test if students' mental health is related to, or affects, their reports of empathy, Keyes' (2006) condensed measures of the mental health continuum (MHC-SF) was included in the survey. The MHC-SF identifies individuals' levels of emotional, psychological, social, and overall subjective well-being. Students were asked to indicate how often they felt particular

[10] Agreeableness was mistakenly excluded from this study.
[11] Calm was reverse coded.
[12] Careless was reverse coded.

emotions and aspects of their personal and social functioning (0 indicating never and 5 indicating everyday).

Within the MHC-SF, a diagnosis of *flourishing*, presenting positive mental health, is made if someone feels 1 of the 3 hedonic well-being symptoms (items 1-3) all or most of the time and feels 6 of the 11 positive functioning symptoms (4-14) all or most of the time in the past month. Flourishing is not only distinct from psychopathology, but also from *languishing*: a state in which an individual is devoid of positive emotion toward life, is functioning poorly psychologically or socially. To be diagnosed as languishing in life, individuals must exhibit low levels on 6 of the 11 scales of positive functioning. Individuals who are neither languishing nor flourishing are then coded as moderately mentally healthy.

Stress

Extensive investigation of previous literature regarding stress in medical school, as well as analysis of the first round of interviews with M1 and M2 students, highlighted the following ten specific stressors that were explored in this particular project: 1.) Financial worries, 2.) Lack of time/Time management, 3.) Academic pressures from self and others/Fear of failure, 4.) Amount of material to learn/Academic demands, 5.) How you are evaluated, 6.) Demands of social and intimate relationships, 7.) Peer competition, 8.) Powerlessness in system/Anonymity in program, 9.) Perceived mistreatment by faculty, clinic, and/or hospital staff, and 10.) Interaction with patients (and/or cadavers for M1 class). The first round of the surveys (T1) were administered to the students during each grade cohort's orientation. Hence, it was too early to assess stress students

experienced during that year. Therefore, questions on experienced stress and stressors were utilized only in the survey administered at Time 2 (T2).

Students were asked to report to what degree each individual stressor (1 through 10 respectively) *had a negative impact on their life* in the past school year (1 being little to no negative impact, and 5 being a very high negative impact). Secondly, students were asked to *rank* each specific stressor based on how often they had experienced that stressor during the past school year (1 being the stressor they had experienced the most often and 10 being the stressor they had experienced the least often). Finally, students were asked to indicate whether or not (yes or no) the ten stressors listed above *had a negative impact on particular personal qualities and attributes*. Twenty-three attributes were addressed in the original, larger study, however, factor analyses were conducted for those attributes (9 total) that related to humanistic qualities. The variables loaded on three separate factors, and therefore three new variables were created and used to as measures of humanistic qualities: *Emotional Connectivity* (emotional energy, willingness to connect with others, levels of sympathy, ability to read others' emotional states), *Interpersonal Communication* (how you communicate with others, social relationships, intimate relationships), and *Patient Concern* (concern for patients, humanistic qualities). For each measure of stress, missing values were recoded to the mean.

The survey was administered to M1, M2, and M3 students in the beginning of the school year during their respective orientations (July and August 2007; T1) [13]. The

[13] The first round of the survey yielded the following response rates: M1: 96%, M2: 97%, M3: 97%.

survey was again administered towards the end of the school year (April 2008; T2) when each individual class had a mandatory meeting or class session[14].

For all medical students, the T1 survey contained an informed consent form (Appendix B) that describes the fundamental elements of the study, what their participation entails, and states that their participation was completely voluntary. The second round survey contained (within the directions) a brief reminder to the students that the survey was an element of the larger study that began in the beginning of the school year. The students were asked to print their name on the T1 and T2 surveys for data analysis purposes only; more specifically, so that I could match the data from each survey for each student individually. Students who had completed the T1 survey but not the T2 survey were contacted via email one week after the survey was administered. Utilizing Microsoft Word, the survey was converted into a form document in which students could actually type or "check" their answers in spaces provided, and then email the completed survey back to me. If a student did not respond to the first email solicitation, a second email was delivered (approximately one week after the first email). If the student did not respond to this email no further communication was attempted. As is evident from the high retention rates, this form of follow-up was very successful.

Observations

The qualitative method of observations is best suited to gain a broader understanding of whether and how empathy is taught in medical school. Furthermore, through observations, I obtained valuable insight into the attendance, participation, and

[14] The second round of the survey yield the following response rates: M1: 91%, M2: 88%, M3: 93%. The retention rates from T1 to T2 were: M1: 94%, M2: 90%, M3: 97%.

general behavior of students and instructors in the classrooms, labs, and small group settings, which was essential to uncovering elements of the formal, informal, and hidden curriculums. "The assumption behind most observational strategies is that they enable the researcher to learn what is taken for granted in a situation and to discover what is going on best by watching and listening" (Richards and Morse 2007: 116). This project examines just that, "what is taken for granted", especially in regards to the implicit and hidden curriculums and therefore observations were a necessary methodology of this project. Moreover, it was felt that certain behaviors, situations, and circumstances observed that appeared to be influential and important in medical students' lives could then be raised and discussed during the informal interviews to attain the students' perspective of these happenings.

Put simply, I observed as many classes, labs, and small group sessions offered in the 1st and 2nd year of medical training through the 2007-2008 school year as time constraints would allow. Permission to observe classes, labs, and small groups was granted by Earl Dobson, MD, John McKenzie, MD, Robert Elliot, MD, and James Washington, MD[15]. As mentioned earlier, T1 surveys were administered to the M1 and M2 class during their respective orientations and during this time I, and the project, were introduced to the students. At that time I conveyed to the students my role as a researcher and the basic methodological aspects of the project, which included that I would be observing them during their classes, labs, and small groups through the school year[16]. Therefore, on the first days of classes, the students were aware of me and my role in the

[15] County SOM administrators and faculty that are referenced in this thesis have all been given pseudonyms. It should be noted that these individuals serve as high ranking SOM officials. Their titles have been withheld to protect their confidentiality.
[16] This information was also provided on the informed consent form, Appendix B.

class. My location, physical distance, and note taking styles were different for classes, labs, and small groups so I will briefly describe my technique for each setting.

Regarding classes, I would arrive roughly 15 minutes before the start of the first class of the morning (usually at 8am) so that I could attain the best "viewing" seat in the lecture hall which was in the upper row and left or right corner of the hall. This position left me practically invisible to a majority of students as their backs were to me, and often those in the same back row were pre-occupied with absorbing the lecture material or other matters to take much of an interest in what I was doing. At no time during the school year did any student change seats or refuse to sit near me specifically because of my note taking. From time to time, especially in the beginning of the project, students would ask what I was writing down and I would explain to them that my notes contained information about class participation and attendance. I recorded data by taking notes with a pen and paper which allowed me to blend in quite easily.

Whereas most students were taking notes on the lecture, I was recording what students were doing during the lecture (level of attention being paid to lecture/lecturer compared to participation in non-academic activities such as surfing the web, reading, or sleeping), how many students were in attendance, how the instructor discussed a patient (as a disease or as an individual), and if and how the instructor discussed the notion of empathy. I would stay for a majority of classes each morning, however I would limit my observations to one grade cohort per morning (either M1 or M2 classes) so as to retain my seat and not cause a disruption by entering another lecture hall.

Small group sessions for both grade cohorts were often in the early afternoon. Two days before group sessions were scheduled I would email the group leader (often a

practicing physician) and obtain permission to observe the session. In the beginning of the year, I would arrive 5-10 minutes early to introduce myself to the group leader; but by the middle to late year, I was already familiar with a majority of the group leaders and therefore would simply arrive with the students. To observe as much as possible during these sessions, I would choose a location in the classroom that was roughly ten feet away from the group. This distance usually allowed me to view all interactions during the session and my notes could not be viewed by the students or instructor. These sessions were much more intimate than the classes, as there were eight to ten students in each small group and therefore my presence was much more obvious.

I attempted to be as discrete as possible by rarely taking notes and simply observing (and taking notes after the session), but this became increasingly difficult as a majority of discussion topics raised in the small group sessions for the M1 class were based on Doctor-Patient interactions, especially in the beginning of the school year. Regarding the M1 small groups, there were 16 small groups and I was able to observe each group at least once during the school year. The M2 smalls groups often served as Problem Based Learning Sessions, or PBL's. These sessions were grouped in 5 to 6 week intervals where during the "first" session of the interval students within each group were given very basic information about a patient relating to specific symptoms and elements of the patient's medical history. As the group sessions progressed through the interval, students - on their own and with other students - were to construct a list of differential diagnoses and possible treatments. The sessions were lead by a practicing physician and resembled a seminar format where M2's openly raised questions regarding symptoms and possible diagnosis. I observed six M2 PBL's during the school year.

During both the M1 and M2 small group sessions, I was examining specifically how instructors discussed a patient (as a disease or as an individual), if and how instructors and/or students raised the topic of empathy, and how it was discussed within the group.

When I speak of my observations in labs, I am speaking specifically of my observations of the M1 students in Anatomy Lab, which began in late November of 2007. I obtained permission to observe students during Anatomy Lab from James Washington, MD. After a few meetings with Dr. Washington to discuss the project and the necessity to observe the M1 students during Anatomy Lab, I was granted permission to do so only when an instructor was present in the Lab. I feel that the presence of instructors influenced the students' behavior in the lab to a certain degree. More often than not, however, more students were in the lab when instructors where also there. Given that the presence of instructors often meant increased number of students in the lab I was able to witness an array of behaviors from both students and instructors, which was in fact the goal of the observations. Furthermore, it was difficult to know how many students would be present in the lab at various times during the day. During my late-night observations I would ask M1's how many students were in the lab that night and I would often receive responses of 2 to 10 (depending upon how soon there was a demonstration exam, or "demo"). Given the size of the lab and my location during my observation sessions, my presence and viewing would have been more of a distraction to students during the times when instructors were not present. Therefore, the sheer presence of the instructors and more students in the lab allowed for my presence to be less obvious during my viewing sessions.

There were no unobtrusive areas to sit in the Anatomy Lab. Furthermore, my close proximity to the dissection tables made it extremely difficult to not be seen or noticed. During Anatomy Lab sessions I sat on a stool by the back of the lab by the lab coats and attempted to blend in as much as I possibly could. Again, notes were taken using a pen and a notebook. I observed at least one lab session per week during the year and at least every other demo students performed.

I also observed students' behavior in the School of Medicine outside of the classroom, lab, or small group setting. In order to better understand the overall notion of time and hours devoted to medical school material as well as how preclinical medical students may talk about empathy outside of the formal realm, I felt it necessary to view the daily interactions within the School of Medicine as well as the study behavior of medical students. In order to do so, I obtained 24-hour access to the School of Medicine through Dr. Earl Dobson. I then set up a schedule to observe students' evening/late evening/early morning study behavior in the School of Medicine the weeks/days/hours approaching an exam. I did this for two separate exams for M1's[17] and M2's respectively. Although the overall setting was the School of Medicine, my "nest" for which to view (Lofland et al. 2006) alternated during these sessions from the student lounge area, to one of the two computer labs (the more occupied lab), to simply roaming the halls to physically count the number of students in the small group rooms, other classrooms, and the OSCE suites. These observation sessions accomplished two things: 1.) By being in the medical school with the students during late hours (sometimes until 4am), students became more comfortable with my presence. At the same time, however,

[17] During the first "semester" M1's were not given exams but rather a series of quizzes. Therefore the observations of in-school studying was reserved to the second semester for M1's.

students were so engrossed in their own study activities that they often did not acknowledge my presence. 2.) Although I often observed the same group of particular students during these specific sessions, these observations provided a glimpse of aspects of medical students lives that otherwise would not have been witnessed, and were crucial to better understanding particularly stressful elements of medical training.

I was unable to observe M1 students during their *Week on the Wards*, or when they shadowed physicians during their out-patient experiences (OPEX). Nor was I able to observe the M2 students while they shadowed physicians or actually worked in particular clinics and other medical settings during the school year. Observations in these settings would have been useful, especially in terms of dissecting the informal and hidden curriculums. However, the observations conducted for this particular project within the School of Medicine during the school year not only spotlight areas of medical education that are very rarely studied (i.e. how empathy is discussed in the classroom, and exam preparation behavior), but also were of value in unearthing particular elements of medical training that could be impacting medical students' levels of empathy.

As discussed earlier, certain works stand-out in terms of their research on medical student behavior and their utilization of a mixed-method approach. Becker et al. (1961), Coombs (1978), and Hafferty (1991) each used observations to gain a better understanding of medical student behavior, particular aspects of medical training, and elements of medical school culture. These works were helpful for my particular thesis in describing the setting I would be walking into in a general sense, as well as highlighting particular elements and aspects of medical training that would be of interest to my specific study. Within these works the use of observations added greatly to the authors'

findings and provided a vivid picture to the reader. Yet, whereas I was unable to observe medical students in situations that these previous authors were able to gain access to, I do believe these authors faced certain problematic issues that I was able to avoid, and therefore I was able to uncover elements of medical training and medical student behavior that they were not.

Becker and his colleagues, Coombs, and Hafferty were either closely affiliated with the administration of the medical school in which they were conducting observations, or were much older than the medical students they were observing. It is likely that these issues created barriers and unnecessary distance between the students and the researchers and certainly influenced the behavior of the students and faculty. Coombs delivered lectures to the medical students he was researching throughout each year of his study. Although not affiliated specifically with the medical school they studied, Becker and his colleagues were considerably older than the students they studied during the time of their research. Hafferty, in his study of first year medical students, was not only much older than his subjects but also an assistant professor at the medical school he was studying at the time.

Although the observational data offered by these works are certainly insightful, the researchers' affiliations with the particular schools and the differences in ages between the researchers and the students may have prevented the researchers from observing crucial elements of medical training and student behavior. Not only was I not affiliated in any way with the County School of Medicine during the time of data gathering, but I was closer in age to the average medical student, dressed similarly to medical students, and I could relate more easily to medical students that these previous

researchers. These basic similarities, I believe, led to a much higher comfort level of the students (subjects) with my presence during my observation sessions. I was a graduate student conducting my dissertation research and I was willing to attend 8am classes, I was willing to sit and watch a cadaver's head get sawed in half, and I was willing to stay up with them until 4am. Furthermore, Interviews with M1 and M2 students were granted with little to no hesitation and the level of candidness of the students during the interviews provided fruitful data. Put simply, my youth and my lack of affiliation with officials that were evaluating students provided me access to a deeper level of student behavior and interaction that I argue was not privy to previous researchers.

Interviews

The qualitative method of in-depth, semi-structured interviews is arguably the most useful in uncovering *how* and *why* certain elements of medical training could be influencing shifts in medical students' attitudes, from the students' perspective. Kvale and Brinkmann (2009: 1) state, "The qualitative research interview attempts to understand the world from the subjects' point of view, to unfold the meaning of their experiences, to uncover their lived world prior to scientific explanation". Within this project, interviews were used to gain an understanding of what medical students' felt were significant aspects and memorable experiences of their training. During these interviews, students were also asked to discuss their encounters with stress, interactions with family, friends, fellow students, instructors, and physicians, as well as their perceptions, ideas and beliefs regarding the importance of empathy in medical curriculum and medical practice (Appendix C: the interview script). Furthermore, the interviews

were seen as an excellent venue to discuss with students certain issues I had uncovered during in observations.

Ten M1, and ten M2 students were selected to be interviewed. I selected 20 students so that I had an equal yet manageable number of subjects from each grade cohort, as well as to provide an ample amount of qualitative data to not only make comparisons between cohorts, but also to lend sufficient support to arguments set forth by quantitative analyses. During each grade cohort's orientation, when I introduced the students to the project, I stated that interviews were an integral part of the study and if students interested in being interviewed to contact me. Although selecting interview subjects purely on their willingness to participate could be seen as problematic, I argue that doing such not only provides the researcher with interested participants that are willing to engage in a dialogue, but that these subjects are also perhaps more likely to truly consider each question and provide meaningful answers because they are genuinely willing to participate and not because they are randomly selected or told to do so. As Kvale and Brickmann (2009: 165) state, "The ideal interview subject does not exist". Therefore, my goal was to obtain willing and interested participants, hence the method of my selection. Although I interviewed 10 males and 10 females, my interview subjects varied in regards to race and age.

Interviews with M1 and M2 subjects were conducted once in the early stages of the school year (October 2007: T1) and again towards the end of the school year (April 2008: T2). The same questions were asked of the students during both interviews to explore any potential changes in their views, perceptions, and opinions. The personal experiences of the students, however, were explored more in-depth during the T2

interview sessions given the progression of the year. Interviews were conducted away from the School of Medicine grounds to allow for more candid responses. Similarly, all subjects' identities were kept confidential and I did not want the subjects to be concerned with being seen with me by medical school faculty, staff, or fellow students. Conducting the interviews "off the grounds" also allowed me to provide compensation to students in the form of coffee, tea, lunch, or dinner. Interviews were often conducted in local coffee shops, eateries, and even on walks in local parks. Subjects chose the time and place of the interviews. My goal was to provide the subject with complete control of arranging the interview so as to make them feel more comfortable during the conversation.

Interviews were recorded using an *Olympus Digital Voice Recorder*, and permission to use the recorder was requested from every subject prior to recording. Following the stages of an interview set forth by Kvale and Brickmann (2009), the interviews began by providing the subjects with a briefing of the study itself. A general overview question was then raised such as "Overall, how has this last year been?". Although the interviews were semi-structured, I allowed subjects to stray off the specific topic of the question into various other areas thereby often providing rich and fruitful data regarding similar, related topics. As is evident from the interview script (Appendix C), subjects were usually asked about their personal and social experiences within the School of Medicine, in the hospitals/clinics, and regarding their medical training overall. These questions were followed by questions regarding particular courses, labs, or small groups. Students where then asked questions about their stress levels and possible changes in their personality and other personal attributes. As the interview progressed, students were asked to describe their perceptions of positive doctor-patient relationships, if and

how physician empathy should be raised in medical school training and curriculum, as well as their beliefs regarding the importance of being trained in the social and biomedical aspects of medicine[18]. Interviews were concluded by asking the subjects if they had anything else they would like to add. I, the researcher, would then answer any questions the subjects presented regarding the study and particular questions asked during the interview.

Regarding the implementation of the new curriculum in the 2007-2008 year with the 2011 (M1) grade cohort, I felt it was necessary to attain a better understanding of not only the basic tenets and goals of the curriculum but also how it was devised and constructed[19]. In discussing the origins and execution of the new curriculum with Dr. Earl Dobson, he suggested that I speak with other individuals who also play (or have played) prominent roles in the development of new curriculum: Dr. Robert Elliot, Dr. Benjamin Smith, Dr. Joan Ellsworth, and Dr. John McKenzie. Interviews were conducted with these administrative officials in the spring of 2008 (Appendix D).

Statistical Analyses and Interpretation of Qualitative Data

The data gathered from the T1 and T2 survey were entered and analyzed using SPSS 15.0[20]. Interview and observation data were transcribed into Word files, converted into Rich Text Files and uploaded into MAXQDA. Interview and observation data was analyzed using a multi-step coding process. Interviews were initially coded on the following deductive codes extracted from the survey and research questions: *empathy*,

[18] This, of course, is a general overview of the progression of most interviews. Not all interviews followed this series of questions.
[19] Information gleaned from these interviews is discussed in later chapters.
[20] Specific analyses and tests are described elsewhere.

physician empathy, *negative experiences with doctors*, *experience with patients, stress, relationships with others, confidence, time,* and *changes in attributes*. Other inductive codes, however, such as *vulnerability*, *distance (doctor to patient),* and *academic identity*, among others, emerged. This coding process has yielded themes and descriptive categories that are fully discussed in the following chapters, most notably the chapters on the explicit, the implicit and the hidden curriculum.

Observation data was coded in a similar manner. Primarily, observation data was explored utilizing the following deductive codes: *attendance*, *attention levels*, *patient as individual*, *study behavior*, and *patient as disease*. Observation data was particularly important for improving the interviews, but observation data was also linked with the analysis of course calendars and course bulletins. These documents were used to quantitatively examine how many course hours of the M1 and M2 curriculums were devoted to the instruction and practice of the psycho-social aspects of patient care. Taken together, the observations of student and instructor behavior in these classes as well as the analysis of the course offerings provide a multifaceted view of the explicit and implicit curriculum.

Conclusion

To summarize, this project utilizes both a quantitative (survey administered at two separate times during the school year) and qualitative (interviews conducted twice during the school year and observations throughout the school year) methodologies to identify a.) *if* medical students' personal attributes (notably empathy) are changing during the course of the school year, b.) *how* and *why* these changes are happening, and c.) *what*

could be the mechanism behind these changes. Furthermore, this particular study employs a mixed-method approach to shed a necessary light on the personal experiences, stressful encounters, and socialization processes of contemporary medical students within a new medical curriculum. In short, each methodology serves as a piece of the puzzle.

CHAPTER 3

THE "HAMBURGER MACHINE"

"..what's the hamburger machine that chops up nice kids and turns them into the doctors I got to know" – Dr. Charles LeBaron

Introduction

In his book *Gentle Vengeance*, Lebaron (1981:58) refers to his medical training as a "hamburger machine", a mechanism he suggests has deleterious effects on students' humanitarian attributes. Previous studies, and notable autobiographical accounts, have also argued that there is a significant downward shift in positive attitudes, perceptions, and values among medical students during their years of training (Wolf et al. 1991; Konner 1987; Klass 1987). More specifically, research has shown that there is a significant decrease in joy, contentment, affection, expressions of compassion, connectedness with others, and a significant increase in expressions of cynicism, anxiety, and even depression among medical students (Wolf et al. 1989; Vitaliano et al. 1984). Furthermore, the cultivation of negative psychological, emotional, and physical traits and the depletion of positive, humanistic attributes are argued to result from not only socialization processes within medical school (as discussed later), but also from stress and stressors specific to medical school and the training to be a physician. This chapter investigates medical school stressors, how they influence medical students' lives, and how the wear and tear of medical school stress may have detrimental effects on medical students' levels of empathy.

The Stress and Stressors of Medical School

It is clear from previous research that medical education is psychologically, emotionally, and physically demanding (Lee and Graham 2001; Wolf 1994; Mosley et al. 1994). In the literature, the stressors experienced in medical school are usually grouped into three categories: academic pressures, social and personal issues, and financial worries (Vitaliano et al. 1984; Mitchell et al. 1983; Deary 1994), and recent studies have shown that the high levels of stress within medical training can cause significant cognitive dysfunction in medical students resulting in increased levels of anxiety and depression (Goldsmith and Satterfield 1984; Parkerson, Broadhead, and Tse 1990; Rogers 2008). Furthermore, research has also shown that the stressors and degree of distress experienced in medical school can lead to burnout (Dyrbye et al. 2006), have detrimental effects on personal relationships (Miller 1994) and students' overall well-being (Lee and Graham 2001), and is negatively correlated with student empathy scores (Thomas et al. 2007; Kupfer et al. 1978).

In short, the previous research suggests that not only do characteristics of medical students change during their training (i.e. personality, empathy, well-being, and levels of optimism), but also that these changes are due in part to the stress experienced in medical school. This specific chapter investigates the following questions: a.) Are medical students' levels of empathy changing during their training?, b.) Does the wear and tear of medical training serve as a mechanism behind those potential changes?, and if so, c.) How does the stress associated with medical school lead to decreases in students' levels of empathy? Previous research indicates that high levels of medical school stress will

cause a decrease in empathy. I argue, however, that preclinical medical students learn to *adapt* to the chronic stressors of medical school, that there are signs of this adaptation as early as the first year, and that this adaption includes a "shedding" of empathy in order diminish their degree of vulnerability, and to focus on attaining medical knowledge during these first two years.

Recap of Methodology

This chapter focuses on how the stressors of medical training and how the negative impact of these stressors may affect students' levels of empathy and other personal attributes. This chapter features data gathered from 330 surveys completed by medical students[21] at the beginning and end of the academic year. These surveys assessed the following variables: sociodemographics (gender, age, and year in school), general empathy, clinical empathy, personality characteristics, mental health, and experienced stress (most frequently experienced stressor, the negative impact stressors had on their lives, and if stressors had affected their personal attributes)[22]. Moreover, 10 M1 and 10 M2 students were interviewed at the beginning and end of the school year. In regards to this and the following chapter, interviews were used to gain a better understanding of the stressors students experienced, how it impacted their lives, and how it may have affected their personal characteristics.

[21] 119 M1 students, 100 M2 students, and 111 M3 students. In this work data on M3 students is used only for comparison purposes as this work primarily focuses on preclinical students.
[22] The operationalization of these variables is explained in the Methodology chapter of this work.

Analyses

Basic means[23] and standard deviations were calculated for variables at both T1 and T2 to describe the sample of medical students in regards to the attributes measured. Independent samples t-tests were then conducted to test for any differences in means in any of the variables between the grade cohorts (Table 1). Paired samples t-tests were then executed to test for any significant differences in means for each variable within each grade cohort from T1 to T2 (Table 2). Change variables were then calculated to represent the changes in each variable between T1 and T2. These variables were then used as independent variables in a logistic regression analyses using both the BEES and JSPE (at T2), independently, as the dependent variables (Tables 3a and 3b respectively). Ordinary Least Squares regression was used to examine potential mechanisms behind changes in general and clinical empathy, as well as potential changes in overall subjective well-being (Table 3c). These analyses were conducted using progressive adjustment in Ordinary Least Squares regression, stepping in conceptual blocks of variables to determine whether the changes in clinical and/or general empathy could be explained by the negative impact of stressors, stressors negative impact on humanistic qualities, changes in personality characteristics, changes in subject well-being, or general demographics. Finally, I constructed a series of bivariate correlation matrixes (Tables 4a-4d) to further investigate if the negative impact of particular stressors determined high or low levels of clinical and general empathy at T1 and T2, or changes in clinical and general empathy as well. This was done for the each grade cohort as well as the overall sample of medical students.

[23] There were no differences in the means of the variables when missing values were recoded to the mean.

Results

Characteristics of the Sample

Using a sample of 193 medical students, Hojat et al. (2001) found that the average score for the generic JSPE to be 118[24]. Within this specific study, each grade cohort, at T1, was relatively close to this average[25], but as is evident in Table 1, the T2 scores for the JSPE are quite lower. Regarding personality characteristics, each class reported lower than the median in Neuroticism (median = 16), higher than the median in Extraversion (median = 20), and much higher than the median in Conscientiousness (median = 19). Interestingly, the M1 students were significantly more extroverted that the M2 class at the end of the academic year ($t = 2.339$, $p < .05$). Of the total sample, a strong majority of medical students could be considered "Flourishing" at T1 (69.7%), whereas only 29.8% could be considered Moderately Mentally Healthy, and 0.6% could be considered "Languishing". Similarly, at T2, 61.1% were considered "Flourishing", 33.8% were Moderately Mentally Healthy, and only 0.8% could be considered Languishing. Although this trend holds true for both the M1 and M3 classes, the M2 class presents something quite different. At the beginning of the academic year, 75% of the M2 class could be considered "Flourishing", and 20.5% Moderately Mentally Healthy, and actually 0% were calculated as "Languishing". However, by the end of the year, although there were still zero M2 students "Languishing", those that were "Flourishing" had dropped to only 53.6% and the Moderately Mentally Healthy M2 group rose immensely to 42.9%.

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[24] Hojat (JSPE Users Guide) objects to using these data as "norms" for comparison purposes.

[25] As stated earlier, Mehrabian's BEES using a 1-9 scoring scale. Given that I condensed this scale to 1-7, I will not be comparing what Mehrabian reports as the average BEES score and what the subjects of my study reported.

Overall, the general sample of students found Time Management to be the stressor they experienced the most during the course of the academic year. Not surprisingly, given that they are still taking lecture based courses and labs, preclinical students (M1's and M2's) found the Amount of Material to be the stressor they experienced most, whereas the M3's reported Academic Pressures as their biggest stressor. Interestingly, the M1 cohort reported that the stressors of medical school had a significantly less negative impact on their lives compared to that reported by the M2's or M3's ($t = -2.399$, $p < .05$; $t = -2.699$, $p < .01$; respectively). Similarly, M1 students reported that the stressors of medical school had significantly less of a negative impact on personal attributes related to Concern for Patients compared to the M2's and M3's ($t = -2.116$, $p < .05$; $t = -2.867$, $p < .01$; respectively), and Interpersonal Communication compared to that reported by the M2 students ($t = -2.139$, $p < .05$). Perhaps the most intriguing finding in Table 1 is the extent to which the M2's reported the stressors of medical school negatively impacted their personal attributes related to Interpersonal Communication compared to the M3 students ($t = 3.568$, $p < .001$).

Changes in Attributes

Perhaps the most notable finding of this study is that each grade cohort significantly decreased in clinical empathy (M1's: $t = 3.657$, $p < .001$; M2's: $t = 3.409$, $p < .01$; M3's: $t = 2.864$, $p < .01$). This finding supports the claim that medical students' levels of empathy decline before the third year. M3's however, were the only grade cohort to significantly decrease in general empathy ($t = 2.476$, $p < .05$). Regarding personality characteristics, it was found that whereas first year students decreased in

conscientiousness (t = 3.072, $p < .001$), M3's actually decreased in neuroticism (t = 1.862, $p < .01$). Although M1's increased significantly in social well-being (t = -2.015, $p < .05$). Perhaps this is because of the increase in sense of community M1's feel within their grade cohort as they became more familiar with each other, and continued to take classes and labs with each other as the year progressed. These students, however, significantly decreased in emotional well-being (t = 3.072, $p < .01$). Furthermore, second year students reported a significant decrease in emotional, psychological, and overall subjective well-being (t = 3.776, $p < .001$; t = 3.959, $p < .001$; t = 3.279, $p < .01$; respectively). Given the substantial decrease in numerable dimensions of well-being in the M2 students, as compared to the M1 and M3 students, something substantial is occurring during that particular year.

Regression Analyses

Given that this paper focuses on the changes in medical students' reports of empathy, and that a significant decrease in empathy was reported by M1, M2, and M3 students, tables 3a and 3b show the OLS regression of each measure of empathy (general and clinical respectively) on five different clusters of variables (each brought in separately): overall negative impact of medical school stressors, negative impact of medical school stressors on humanistic qualities, changes in personality characteristics, changes in subjective well-being, and sociodemographics.

The overall negative impact of medical school stressors is a significant predictor of the decrease in general empathy, indicating that the more negative impact medical

school stressors have on a subject's lives the more likely they are to report decreasing in general empathy, even when controlling for all other variables (b = -0.100, p < .05).

Table 3c shows that the overall negative impact of medical school stressors is also a significant predictor of decreases in overall subjective well-being among medical students, even when controlling for all other variables (b = -0.227, p < .01).

Regarding clinical empathy, the form of empathy in which each grade cohort significantly decreased, the negative impact of medical school stressors is *not* a significant predictor at any stage of the analysis (Table 3b). In order to better understand the relationship between the overall negative impact of medical school stressors and clinical empathy, a fourth regression analysis was conducted. Table 3d shows that whereas the increase in general empathy is a significant predictor of experiencing lower levels of negative impact of medical school stressors (b = -0.176, p < .05), an increase in clinical empathy is a significant predictor of experiencing *higher* levels of negative impact from medical school stressors (b = 0.066, p < .05). This suggests that high levels of empathy lead students to report having a more difficult time with medical school stressors.

To further explore the relationships between empathy and stress in medical school, as well as examine the relationship between clinical empathy and the medical school stressors more closely, bivariate correlation matrixes were constructed for the overall sample and each grade cohort individually, analyzing each medical school stressor and the scores of general and clinical empathy at T1, T2, and their respective

change variables (Tables 4a-4d). Within in these tables I also highlight the top three stressors for the overall sample, as well as for each specific grade cohort[26].

Bivariate Correlations

Regarding the relationships between the negative impact of each stressor and gender, age, and the change in subjective well-being, female students were more likely to report that half of the stressors have a high negative impact on their lives. Students who increased in their overall subjective well-being were more likely to report a decrease in the amount of negative impact four stressors had on their lives, as well as a decrease in the overall negative impact from the stressors collectively.

Interestingly, the older medical students were more likely to have difficulty with how Peer Competition as well as Perceived Mistreatment impacted their lives. The particular stressors relate more with the clinical years as third year students have much more contact with hospital staff and practicing physicians during their rotations. Furthermore, clinical students are judged and evaluated on their performance, often in comparison to fellow students which heightens the competitive climate. As noted earlier, however, although there is a greater age range among third year students than any other class (23-41), the average age of the M3's was found to be 25, which is lower than the average age of M2's and equal to that of M1's. Perhaps it is not the clinical students reporting these stressors as more difficult, but rather older students in all years as they feel they are treated more negatively by staff because of their age. Furthermore, older students may feel a slight disadvantage due to their advanced years and therefore

[26] The top three stressors are indicated by the numbers in the parentheses to the left of particular stressors.

experience a higher level of competition with the predominantly younger student population.

From Table 4a one can see that the overall negative impact of the all the medical school stressors is significantly negatively correlated with the change in general empathy (r = -0.114, p < .05). This is also true for the negative impact felt by specific stressors such as financial worries (r = -0.126, p < .05), and how students feel they are evaluated (r = -0.148, p < .01). Of critical importance, however, are the positive correlations found on this and other tables (c through e). Students who reported high general empathy at the beginning of the year were also likely to report medical school stressors having more of a negative impact on their lives (r = 0.191, p < .001), yet by the end of the year this relationship was no longer significant. Those students who reported high general empathy at T1 were likely to report that Time Management (the number 1 and 3 experienced stressor for the overall sample) had more of a negative impact on their lives (r = 0.213, p < .001), and this is also true for students who reported high levels of general empathy at T2 (r = 0.191, p < .001).

Similar results were also found in regards the second most frequently experienced stressor, Amount of Material. Students who reported high levels of general empathy were more likely to report that the Amount of Material had more of a negative impact on their lives. This is true for T1 and T2 (r = 0.178, p < .01; r = 0.146, p < .01; respectively). This “high in general empathy / having a harder time with stressors” relationship is also found with the negative impact of Demands of Relationships. Interestingly, this positive relationship actually gets stronger in significance over the course of an academic year (T1: r = 0.190, p < .05; T2: r = 0.178, p < .01). Perhaps as

the academic year progressed medical students found it more and more difficult to balance their academic and personal lives[27].

Whereas Table 4a depicted the relationships of medical school stressors and clinical and general empathy for the overall sample, Table 4b shows the correlations for stressors and measures of empathy for the M1 class specifically. Once again we see a number of positive correlations between levels of empathy and the negative impact of stressors. First year students reporting high levels of general empathy in the beginning of the year were likely to report that medical school stressors had a more negative impact on their lives ($r = 0.218$, $p < .05$). Although this relationship is lost by the end of the year for general empathy, first year students who reported high levels of clinical empathy were likely to report that medical school stressors had a highly negative impact on their lives at the beginning ($r = 0.206$, $p < .05$) and end of the academic year ($r = 0.188$, $p < .05$).

The higher in general empathy first year students were at the beginning and end of the year, the more likely they were to report having a harder time with Amount of Material (the number 1 and 2 stressor of the M2 class) (T1: $r = 0.236$, $p < .05$; T2: $r = 0.205$, $p < .05$), and Time Management (T1: $r = 0.233$, $p < .05$; T2: $r = 0.187$, $p < .05$). First year students who reported having higher levels of clinical empathy at the beginning of the year also reported having difficulty with the Amount of Material ($r = 0.280$, $p < .01$), whereas those who reported higher levels of clinical empathy at the end of the year were more likely to report having difficulty with How they were Evaluated ($r = 0.187$, $p < .05$), and Interactions with Patients ($r = 0.192$, $p < .05$).

[27] The detrimental effects stressors have on medical students' personal relationships will be discussed more fully in this and the following chapter.

In Table 4c we see that second year students reporting high levels of general empathy at the beginning of the year were more likely to report that medical school stressors had more of a negative impact on their lives ($r = 0.219$, $p < .05$), and were likely to report having a more difficult time with Peer Competition specifically ($r = 0.245$, $p < .05$). Second year students who reported higher levels of general empathy at the beginning and end of the year were more likely to report that Demands of Relationships had a high negative impact on their lives (T1: $r = 0.230$, $p < .05$; T2: $r = 0.323$, $p < .01$). Although there are a number of significant negative correlations, perhaps the most surprising finding from this table is the that second year students who increased in clinical empathy from beginning to the end of the year were more likely to report having that Time Management (the number 3 experienced stressor for this grade cohort) had more of a negative impact on their lives ($r = 0.240$, $p < .05$). This suggests that becoming more empathic clinically could be associated with unfavorable consequences, such as increased difficulty in managing a principal medical school stressor.

Interestingly, this significant positive correlation was also found with the third year students (Table 4d). Third year students who reported an increase in clinical empathy were more likely to report experiencing more of a negative impact from Perceived Mistreatment from Faculty and Staff ($r = 0.245$, $p < .05$), and from Academic Pressures, the most frequently experienced stressor of this grade cohort ($r = 0.207$, $p < .05$). Although there are far less significant positive correlations between stressors and measures of empathy for the M3 class than were evident for the M2 and M1 classes, it is important to note that third year students who reported high levels of general empathy at the beginning of the year were more likely to report experiencing more difficulty with

Time Management, the third most frequently experienced stressor for this grade cohort ($r = 0.232$, $p < .05$). This relationship, however, loses its significance at the end of the academic year.

Other Notable Findings

Not surprisingly, female students were more likely to report higher scores on both empathy scales at T1 and T2 (see Table 4a). Interestingly however, this was not the case for the M2 class regarding the clinical empathy. Second year female medical students were only more likely to report higher levels of general empathy at both times, not clinical empathy. In the M1 class, those students who reported an increase in subjective well-being were also more likely to report an increase in general empathy ($r = 0.239$, $p < .01$). Similarly, M2 students who increased in subjective well-being were more likely to report an increase in clinical empathy ($r = 0.188$, $p < .05$).

Students who reported an increase in extraversion as well as those who reported an increase in conscientiousness were more likely to report increases in general empathy than those that did not increase in these personality characteristics, even when controlling for all other variables ($b = 0.177$, $p < .05$; $b = 0.206$, $p < .01$; respectively). This was also found with clinical empathy ($b = 0.392$, $p < .05$; $b = 1.048$, $p < .001$; respectively). Also, students who reported an increase in overall subjective well-being were more likely to report an increase in clinical empathy as well, compared to those that did not ($b = 0.160$, $p < .05$). Given that increases in subjective well-being predicted an increase in clinical empathy in this study (see Table 3b), future research should dissect the relationship between dimensions of mental well-being and levels of empathy.

Discussion

These data show that first, second, and third year medical students decrease in levels of clinical empathy, and third years decrease in levels of general empathy as well. Whereas a majority of previous research has explored the potential change in empathy among only clinical students (3rd and 4th years), it is important to note that this study found a decrease in empathy as early as the first year of medical school. The regression analyses show that the overall negative impact of medical school stressors does predict the decrease in general empathy, yet it does *not* predict the decrease in clinical empathy.

Surprisingly however, increasing in clinical empathy predicts experiencing more negative impact from medical school stressors. Furthermore, there are a number of positive correlations between individual stressors (particularly those found to be within the top three experienced most frequently by medical students), and measures of empathy suggesting that students high in empathy are actually experiencing more negative impact from those stressors they are encountering most frequently, as well as all the stressors collectively. Similarly, as is evident with the M2 and M3 students, students who actually increase in clinical empathy are reporting a higher degree of negative impact from stressors most frequently encountered. These findings suggest that the more empathic medical students are, the more difficulty they have in their encounters with the stressors associated with their training. Empathy, specifically clinical empathy, may be a detrimental attribute in medical school when encountering stressors. Perhaps the cost of maintaining clinical empathy in the face of the stressors of medical school comes at a cost in the negative impact the stressors have on empathic students' lives.

The bivariate correlation matrixes also show a decrease in the number of significant positive correlations between medical school stressors and measures of empathy as years in medical school progress. Table 4b (M1 cohort) depicts nine positive correlations, whereas Table 4c (M2 cohort) shows six and Table 4d (M3 cohort) shows only three. Similarly, if you examine each matrix individually, it is evident that a number of significant positive correlations between the medical school stressors and measures of empathy either decrease in strength or lose significance from T1 to T2. These alterations over years and within the academic year suggest that medical students are potentially adapting to the stressors over the course of the year, and over their years of medical training. Given that the most frequently experienced stressors do not fluctuate over the three years of medical training, it is possible that students are learning to cope with these chronic stressors in particular ways.

From these findings I argue that medical school stress is not directly causing a loss of empathy among preclinical medical students as suggested by previous research. Rather, preclinical medical students, in their attempts to master the rigorous academic demands of medical curriculum, are "shedding" empathy so as to lower their levels of vulnerability to other stressors and to better adapt to the arduous nature of their medical training by focusing on what needs to be known. Following from the quantitative data presented, expanding on previous research on organisms' adaptation to stress, and offering preclinical students' personal accounts of their experiences with medical school stressors, the following chapter elaborates on the notion of medical students shedding empathy.

CHAPTER 4

THE "SHEDDING" OF EMPATHY

Introduction

In order to more fully understand how medical school stressors are leading preclinical students to shed empathy, it is important to first provide a brief overview of research regarding how organisms adapt to stress. Doing such not only highlights how organisms react to stressors in their environment but also how poor adaption to these noxious agents can lend to further physical, mental, and emotional detriment. I argue that in order to decrease the multitude and frequency of stressful encounters, preclinical students adapt to medical school training by shedding empathy because maintaining empathy during the preclinical years may: a.) increase students' vulnerability to other stressors, and b.) serve as a superfluous attribute that potentially causes more harm to the students than good as it is simply not needed to be known or practiced during the preclinical years.

Shedding Empathy to Adapt

Stress, Stressors, and Adaptation to Stress

In order to better understand the nature of stress and stressors within medical training and how medical students adapt to these stressors, it is important to provide a very brief background on how organisms can react to stress.

> In its medical sense, stress is essentially the rate of wear and tear in the body. Anyone who feels that whatever he is doing – or what is being done to him – is strenuous and wearing, knows vaguely what we mean by stress (Selye [1956] 1978:1).

Recognized as the father of stress research, Hans Selye ([1956] 1978) became the first to utilize the concept of stress as a way to understand physiological regulatory responses to threats to an organism. During his earlier work, Selye was interested in how rats reacted to various challenges to their homeostasis, including heat, cold, infection, and toxic substances. Selye observed that because stressors had individual characteristics, specific responses were called into play to meet their unique features. The full gamut of responses to a stressor therefore consisted of a central, nonspecific adaptation syndrome (the General Adaptation Syndrome) plus specific responses that would address the particular event at hand.

Selye recognized that the stress response was adaptive because it sought to preserve the life of the threatened organism. He also recognized, however, that there was a cost to the animal in mounting a stress response. Selye's studies showed that during the phase of resistance to one stressor, the animal's ability to withstand a second, even milder, challenge was impaired. He also noted, however, that repeated exposure to moderate stressors could actually increase the organism's ability to withstand more prolonged and severe exposure to the same stressor ([1956] 1978). Therefore, according to Selye's research, stress responses have long-term consequences, some beneficial and some harmful.

Following Selye's work, but focusing more on the social-psychological rather than the physiological, Holmes and Rahe (1967) examined how social actors adapted to social stressors, particularly major life events. The authors defined major life events as major changes in people's lives that require(d) extensive behavioral readjustments. In

their study of men of the Navy, Holmes and Rahe showed that extensive behavioral readjustments could overtax a person's ability to cope or adapt, thus leaving the person more vulnerable to physical illness, injury, or even death. This notion is quite similar to that raised by Selye regarding how during the phase of resistance to one stressor, an animal's ability to adapt to a second stressor was significantly hindered.

Folkman (1984), argued that mechanisms of adaptation or "coping strategies" consists of behavioral and/or cognitive attempts to manage specific situational demands which are appraised as taxing or exceeding one's ability to adapt. Coping efforts, according to the authors, may be directed at the demands themselves (problem-focused strategies), or at the emotional reactions which often accompany those demands (emotion-focused strategies). From this perspective it is argued that one's coping strategies serve as responses to stress in order to augment or diminish the negative impact of encountered stressors.

When an organism is under stress, however, regardless of its means of adaptation or coping, it is still vulnerable to other stressors and noxious environmental agents. In their work on stress and susceptibility to the common cold, Cohen, Tyrell, and Smith (1993) had approximately 400 healthy subjects complete a questionnaire assessing their stressful life events, perceived stress, and negative affect, and then intentionally exposed these subjects to a common cold virus. The authors found that higher scores on each of the three stress scales was associated with greater risk of developing a cold, which supports the hypothesis that psychological stress increases the susceptibility to infectious agents. These findings suggest that a psychological stress response is evoked when demands imposed by events exceed the ability to cope. The heightened stress response

lowers the immune system's ability to fight off the virus, thereby rendering the individual more susceptible.

In a follow-up study, Cohen et al. (1998) investigated the types of stressors that increase susceptibility to the common cold by having subjects complete a life stressor interview and psychological questionnaire and then inoculating them with the common cold. Although severe life events (less than 1 month in duration) were not associated with developing colds, severe chronic stressors (1 month or longer) were associated with a substantial increase in the risk of disease.

This brief description of research on stress and adaptation to stressors highlights not only how stressors, especially those that are chronic (i.e. those specific to medical school) can be psychologically, emotionally, and even physically taxing but also how adaptation to stressors is of immense value. Inadequate adaptation renders organisms (in this case, preclinical medical students) increasingly vulnerable to other stressors, as well as noxious environmental agents. It is imperative that preclinical medical students identify and engage in productive means of adaptation as they encounter the stressors of medical school. Failure to decrease the frequency and magnitude of their encounters with stressors may result in physical impairment, cognitive dysfunction, further depletion of relational connections, and most importantly, poor academic performance. I argue that preclinical medical students adapt to the stressors of medical school by shedding empathy, thereby rendering them less sensitive to stressors and allowing them to focus more on the biomedical concepts, pathways, diagnosis, and treatments, of which their knowledge of is regularly tested.

Most Prominent Stressors of Medical School

As noted earlier, the previous literature on stress and stressors in medical school often group the prominent stressors into three categories: academic pressures, social and personal issues, and financial worries. Therefore, it was not surprising that Amount of Material, Academic Pressures, and Time Management were found to be the most frequently encountered stressors among preclinical medical students, as these stressors often relate to one another regarding the material students must learn, the pressure to perform as well as absorb the material, and the time that it takes to do so. Preclinical students, during their interviews, not only identified these stressors as troublesome, but also noted that they had deleterious effects on their physical health, social health, and mental health. Furthermore, preclinical students openly stated that particular personal attributes, such as empathy, were shed in order to react more adequately to these chronic stressors and be productive medical students. This section first addresses and explores the most prominent stressors of medical school, their effects on preclinical medical students' lives, and the notion of "shedding" empathy, all through the voices of the students themselves. Exploring the stressors in this manner provides a backdrop to examine the two pronged reasoning behind why students' shed empathy: to decrease vulnerability and to focus on what needs to be known.

Amount of Material

Amount of Material was found to be the most frequently experienced stressor of the first and second year cohort. As Coles (1994: 3) states, "..the curriculum itself is a major source of stress. Overload of information…is presented to students in a context

which is far removed from its eventual use." A number of studies point to the amount of material and overall rigorous demands of the medical curriculum to be a major source of stress for students, as well as a culprit in the depletion of students' positive personal attributes (Lebaron 1982; Wolf, Elston, and Kissling 1989). When asked to identify a major stressor they had experienced, preclinical students frequently spoke of the Amount of Material.

> It's the amount of material that's stressful and also it's stressful because it's so difficult. I mean one minute you think you get it and then when you go back over it a few minutes later you've lost it, you know. It's just so hard to me and I don't get it so it's very frustrating that when you look at something five times and there are fleeting moments of understanding and then it's gone. It's been overwhelming. (M1)

> I would never have thought that med school was so much work if I didn't come in and experience it for myself. Even with college, I couldn't even comprehend, like I couldn't even relate anything to this type of studying. It's just different. It's not so much that it's hard, it's a certain mindset you have to take on, to devote yourself to that and nothing else. (M2)

As Table 4b shows, first year students rated Amount of Material as the first and the second most frequently experienced stressor, and although second year students rated Amount of Material number one as well, there is a different form of emphasis on how the Amount of Material impacted their lives. This is also evident in that first year students who were higher in general empathy at the beginning and end of the year, and those that were higher in clinical empathy at the beginning of the year, were more likely to report

Amount of Material to have more negative of an impact on their lives. These relationships, however, were not found in the M2 class. Second year students often spoke of an adaption to the amount of material that is presented and understanding of how to digest the abundant amount of material.

> [This year is] definitely more difficult than last year but the thing is you learn how to cope and you learn how to adapt and you learn how to be more efficient. So, I find myself studying less, going to class less, having harder material but doing better. Because it's a combination of coping, becoming efficient, and getting used to how material is presented... (M2)

> It was a lot less stressful than last year because I know what I need to do now, whereas last year I was still trying to figure out what to do and how to get it all done. Now I know what's expected of me and working at the right pace to do it. (M2)

Adapting to the Amount of Material, however, was shown to have certain consequences regarding how second year students approached the curriculum.

> Yea, it's really weird, like I know I'm stressed out but I'm kind of like a robot, doing my shit and getting my shit done and almost not thinking. Once I feel stressed though, I have to be like "NO. Don't do that. Get back to work". I think, I look back and yea I feel stressed but it's what you gotta do, you know. (M2)

> I'm more in the swing of things than last year you know. Even though it's been harder you expected it more so it's kind of more robotic I guess. (M2)

This new found ability to adequately adapt and tackle the amount of material was absent for most first year students, who often spoke of frustration and difficulty in how to properly adjust to the undeviating requirements of medical school.

> I think the biggest challenge has been getting all the information in and trying to retain it, memorization really. (M1)

> Getting a feeling of what is really important and what you should be taking away though, that has been like the most challenging thing, and I think that's been really challenging for a lot of people in our class. What's really final is challenging for a lot of folks. (M1)

> What's stressful is having to vary the way you do things every day. I wish that I had a way that I did it, you know what I mean. Do you pre-read, do you go to the lecture, do you read the transcripts? I mean, what do you do? You have a million things to look at and not enough time to do then all so what do you do? It's just really frustrating. (M1)

Clearly, M1 students suffered difficulties attempting to adjust to the meticulous nature of medical school which reflects the necessity to evolve into a medical student who understands what is expected of them and how to learn the material. This is what was depicted by the words of the second year students. First and Second year students alike however, reflected on how much of a negative impact the Amount of Material has had on their social lives, their connections with family and friends, and their personal attributes.

> Med school as a whole, I don't know about this year in particular, it's certainly shifted me more towards being an introvert. That's definitely the hardest thing to not have happen. You spend so much time completely absorbed in yourself and learning and studying that in a way you end up, yea, you just don't do as much as that outside socialization. (M2)

> My social life definitely suffered and I mean, there's been a lot of tension with the people I hang out with a lot because we're all doing the same thing at the same time. And working all the time, you know, you lose track of a lot of friends and a lot of my friends don't live here. (M1)

> Yea, you don't even realize that you're feeling [guilty] until you don't sleep that well or wake up thinking about all the things you need to do. Sometimes I'll try to go back to sleep for a few more minutes and I'll think about all the things that are piling up and my heart will start racing and I'll have to get up you know because if it was just something I could like, you know, Monday get this done, turn it in and your done, but it's not like that. It's all this like huge build up for a huge month where you always have this huge stack on your desk of the work you should be doing and you're working but you're never finishing and it makes me really anxious (M1)

Medical school stressors such as Amount of Material clearly take a toll on the physical, psychological, and social well-being of preclinical medical students. In their quest to be productive medical students, M1's express frustration and anxiety in attempting to properly learn and adapt to the massive load of material being presented to them. Although second year students acknowledge their discovery of how to attack the material, they also acknowledge that this discovery has come at a cost as they have

become robotic in nature, focusing meticulously on the material and nothing else. Most importantly however, it is evident that the Amount of Material has detrimental effects on students' relationships and personal attributes.

Academic Pressures

Similar to Amount of Material, Academic Pressures was frequently mentioned by students when asked to describe a stressor they encountered often. Academic Pressures entail the pressure to perform as well as the pressure to consistently rise to the challenge of completing required tasks, assignments, and exams. Often this pressure is accompanied with a sense of guilt when not engaging in medical school related studies.

> I was talking to people about this last week, about what I was doing, I was chilling taking care of some things and about once a day I would catch myself and say 'oh crap, I'm getting behind'. Like right now, I'm getting behind because I'm not studying. You know, whenever you're not studying, you're getting behind. And it doesn't necessarily freak me out but it's definitely something that's like an alarm once a day. (M2)

> **Q:** How stressful was this year for you?
>
> **A:** I mean, I see stress in a couple ways. There's the stress like "Oh my God, I'm freaking out!", and then there's stress from like pressure and pressure to perform. In that regard, every month, right before an exam you have all this pressure to perform, you have a deadline, and you really have to focus. I mean that really puts a burden on you and I think it takes a toll on you. A little part of you dies because you go through a lot and tense up for about a week or so trying to study all the time and then you take it, and then the cycle starts all over again. (M2)

First and second year students frequently coupled the negative impact from Academic Pressures with how the medical curriculum itself was constructed. In turn, the way student's view the demands of the curriculum, lead them to alter who they are to better adapt to their relentless academic responsibilities.

> I also feel like they're trying to take away any ounce of humanity out of me. It's not about pursing our dreams any more, it's about us going according to their schedule, making sure we're there on time for everything. We have to make sacrifices and give it all up to do work. I feel like in other schools it's about using your life experiences to help you learn and you can still learn in the academic sense. (M2)

> **Q:** Do you think you've changed at all this year?
> **A:** Yea, I've become more direct and more (pause) I've become more busy, so I've become more impatient. You wonder how those doctors and surgeons get like that, like, "I need this now and I don't have time to wait around for it", I'm getting more like that.
> **Q:** How do think that's come about?
> **A:** Having a test every month. Cause, since one week out of each month everything shuts down. (M2)

> I guess the first thing that comes to mind would just be the repetitious nature of it and the fact that you just go and you do it and you do it and you do it. It makes it pretty easy to just snap into people that aren't necessarily your friends or you see them all the time and you get like "Alright, get outta here". That's been a pretty negative thing that I've seen. It's just like

> a huge grind. You do it and you do it and you get tired of it and it strains your relationships with your friends. (M1)

Academic Pressures also cause students to not only decrease correspondence with family and friends but also stifle their willingness and ability to connect with others outside of medical school. Students even express that they feel guilty for talking to family and friends. According to the students, the guilt they experience is actually two-fold, from not studying and from letting the stress get to them. This sensation is circular in that students will realize that they are stressed from the Academic Pressures and perhaps take a break from studying (i.e. calling a friend, watching TV, etc.). In doing such, however, the guilt from not studying rises and increases their anxiety forcing them back to their books and transcripts, which in turn causes distress.

> When I'm doing things that aren't school related like talking on the phone to people that aren't in medical school, like to my family and friends who are very important to me, I stress out because I feel like I should be doing work. (M2)

> It's monotonous, mundane, and hard. It's really hard to think about things that matter when you're spending like nine hours a day thinking about the lungs you know. It's not, to me, that's not the stuff that matters. It's more like friendships and family and the good things and ways you can help people. And I haven't been able to focus on any of that. Instead I've been focusing on like trying to get an A, and it's been sucking the life out of me. (M2)

> I'm not happy with certain aspects of myself. Mainly in that I'm letting the stress get to me. A bit of how my performance has been in classes and how I'm beginning to let the stress affect my relationships with others. (M1)

> I mean, just within my small group I see so many people snapping at things and being irritable and sometimes I have to get out just to not get involved in it. I definitely think my relationships with my friends got strained more this year from being in med school. And there is definitely a level of competition now that wasn't there last year. (M2)

The pressure to perform well in medical school, as well as the pressure to simply handle the, at times, overwhelming academic responsibilities clearly comes at a cost to preclinical students. There is an apparent decrease in familial and friend relations, an increase in negative affect, and a sense of guilt that consumes these students.

Time Management

Another prominent stressor in the lives of medical students is Time Management. Often issues of Time Management reflect frustrations with an inability to enjoy events, friends, and opportunities outside of the medical school. When asked how she balances her academic life and her social life, a second year student responded, "There is no balance". This sentiment was echoed frequently in my interviews with students, especially those within the M2 class. For this particular cohort, a number of students spoke of a melancholy caused by the necessity to study. In a discussion about time management, I asked a second year student why he chose to not participate in more organizations. He responded, "..and then for me I don't know when I'd fit in another

organization. I'd have to give up something and I can't give up studying, so there's nothing to give up."

> Yes, but it's been stressful because every moment of my day is filled up by *something*, it feels like. When, you know, I'll go all day without having a good time, or what I feel like is a good time, to talk to people that I really enjoy talking to. The time commitment has been ridiculous and I don't know why it's so ridiculous because we have all these free days where we don't even have to go to class and it's just this guilt that hangs over our heads that we have all this work to do. And work takes the concentration so you have to get into the mindset to do it. So I guess the time commitment is a major issue. (M2)

> The most stressful thing was not having enough time, not feeling like I had the time to do or to be a happy person and cover all the materials. I don't stop studying because I'm prepared, I stop studying because it's time to take the test. (M1)

Time Management's negative impact also spreads to other aspects of students' lives. Students even expressed difficulty in managing everyday tasks to maintain their health such as exercise, sleeping, and preparing meals due to time constraints.

> I love yoga and they have classes here but they're an hour long and very rarely am I going to be able to actually take an hour out of my study schedule, you know and then there's the driving to class and changing, that's way too much time out of the schedule. My windows are really small, and sometimes I feel guilty when I sleep. And I would really like to cook. I mean, I see other people do it and it looks like they really enjoy it, but I just don't have the time for that. Microwavable stuff is awesome. (M2)

Students also express that in order to better cope with time constraints it is essential to lose a part of themselves, to alter their identity, as well as distance themselves from others.

> I feel like when we all came in they were all about us maintaining the other sides of ourselves like hobbies and interests. Like, "This is Nina. She's a dancer, and a hiker, and a med student all in one". No she's not. She's a med student who used to dance and who likes to hike but doesn't have any time to. I feel like somehow our curriculum would foster that, but it doesn't. (M2)

> Everyday has to be so scheduled around this one thing and you have to make time for your friends and the things you want to do but even when you make time for those things you have this guilt that consumes you. You have to just fight through it I guess and that really bothers me. (M2)

> **Q:** How has medical school been tough for you?
> **A:** Tough in that not having as much time for, you know, extra-curriculars or for like being, I feel like I've lost touch with some of my friends. (M1)

Often intertwined, it is clear that these medical school stressors (Amount of Material, Academic Pressures, and Time Management) are prevalent in the lives of preclinical medical students, and have detrimental effects on students' physical, psychological, emotional, and social well-being. Given the chronic nature of these medical school stressors, students must learn to adapt. I argue that a probable means of

adaptation that is adopted by preclinical medical students is to actually shed their willingness to empathize with others. By shedding empathy, preclinical medical students decrease their degree of vulnerability and sensitivity to medical stressors and are able to focus more intently on what needs to known (i.e. the biomedical aspects of their curriculum).

Shedding Empathy to Diminish Vulnerability to Other Stressors

To be empathic requires heightened levels of cognitive and emotional sensitivity (Batson et al. 2005; Nathanson 2003). Not only must the observer recognize and interpret particular cues portrayed by another but more importantly, the experience of empathy leaves the empathizer "feeling into" someone else's emotional distress (Ickes et al. 1990; Zillman and Cantor 1976). The empathizer opens themselves up to experience negative affect. The degree to which an empathizer experiences the feelings of another are dependent upon the empathizer's emotional intelligence as well as their ability to take another's perspective. However, to experience any degree of empathy you automatically make yourself vulnerable.

The literature on clinical empathy emphatically states that physicians should refrain from connecting emotionally with their patients as by doing such would remarkably hinder their ability to diagnose and treat the patient properly (Arling 1958; Blumgart1964). Furthermore, by empathizing with patients, physicians render themselves vulnerable to the negative emotional states of the patient which can undermine well-being for both patient and doctor (Halpern 2001). Therefore, researchers suggest that physicians who open themselves to the emotional states of their patients by

empathizing with them unnecessarily risk patient outcomes and create a greater degree of burden for themselves (Lief and Fox 1963). In sum, according to previous literature on physician training, empathizing with patients is potentially bad for patients and cultivates undue stress for doctors.

The importance of minimizing levels of vulnerability to stressors is prevalent not only in clinics and hospitals, but also in medical school. Medical students readily recognize their vulnerability and sensitivity to medical school stressors.

> I mean, I'm definitely more emotional now than I ever was and I don't like that. And not emotional towards other people but more emotional about stuff with my life. I'm more easily upset, I react differently, I'm more anxious and I think that's the stress thing. I'm just reacting to things in a much more sensitive way. (M2)

> I was telling you before that I was having these thoughts but there were all these things leading up to that and I just remember it was around 1am and I just started crying and I've never just cried myself to sleep before and that was totally what it was like, and I was just bawling and I was so upset and I was just kind of like, the core of myself, I couldn't justify what I was doing anymore. I feel like it's going to come up again and I have definitely felt that maybe I'm becoming depressed or, cause I feel that I've had irrational responses to stress, irrational for me at least and I don't know what to do or how to deal with it. (M1)

The data presented earlier shows that preclinical medical students experience a high degree of stress, and those stressors (particularly Amount of Material, Academic Pressures, and Time Management) have severe negative effects on their personal lives. Table 3d illustrated that increasing in clinical empathy was a significant predictor of

experiencing high levels of negative impact from medical school stressors. Empathic students reported having more difficulty with the stressors of medical school than less empathic students. Therefore, these empathic students are perhaps more vulnerable to the stressors of medical school and their negative consequences. If being empathic caused students to become more exposed and sensitive to stressors, and these stressors are chronic in nature, then the appropriate action would be to adapt and shed the mechanism that was creating the exposure. The most logical solution would be to shed empathy.

> Well, I guess some stress has caused a decrease in empathy. I mean, I feel this year I am learning much much more and I have to shut down other parts of myself to get that stuff in, and that emotional stuff may fall by the wayside. I think we are all trying to find ways to cope and balance. (M2)

> It's just a lack of caring about things. I mean, things that were important just don't seem that important anymore and I mean these are probably things related to depression. I need to start caring about things and people again. I want energy back and put that into people because now I only put in as much as I have to you know. I put the energy into med school. (M2)

> I don't feel friendly, and that's frustrating to me because I used to be a very friendly person. I don't want to feel like people are taking up my time. That's such a self-centered mindset. But I feel like you start to feel like that sometimes because your time is so limited and we all wish we had 4 extra hours. But it has a really negative impact on the way you treat people. (M2)

> I feel like I was really down on myself because of my worrying and it made me less sensitive to other people and really self-involved and I was aware of those things but not really understanding why. (M1)

> I don't listen to people very well anymore. I used to think I was very psychologist like and I'd listen to my friends and I felt I was a good listener and I like to provide advice and a lot of times I don't think other people's problems are that big anymore. I find myself zoning out when my friends are talking about something big that's going on and that's not very much like me. I think that's the underlying thing, I just don't really care about a whole lot right now, I just want to get through it. (M2)

> No, I mean there are times when I feel exhausted more than I used to but I feel more like if a friend is calling and I know they've been having a hard few days or something and then they call me and I just feel tired and not like talking I won't pick up the phone, which is kind of mean. (M1)

Tables 4b through 4d showed that the number of positive correlations between stressors and measures of empathy not only decrease in strength and significance from T1 to T2 for each individual cohort, but these types of relationships also decrease in strength and significance over each year. These findings may suggest that empathic preclinical medical students are coping with stressors better. Given the other findings presented throughout this chapter and the previous chapter, however, the decrease in positive correlations also further support the argument that preclinical medical students learn to shed empathy in order to defensively confront and adapt to medical school stressors.

Preclinical medical students express yet even another type of vulnerability as well. Once touted as the smartest, most gifted students of their high schools, and perhaps even their colleges and universities, medical students often find themselves no longer the most academically talented among their peers, especially within the first two years of medical school. Students often expressed their frustration with not being "the best" anymore, and how this produced anxiety and even self-doubt regarding their academic abilities.

> My sense of identity is still way too tied up in my academic prowess. I need to let it go because I'm consistently way below average on the exams. Like this motherfucking cardiology test. I studied the whole fucking time and I was still below the average. It's like what do I have to do you know? I just feel kind of, I guess I'm not as smart as my classmates. I don't know. I don't know. (M1)

> It's just like your whole life is about achieving a grade. So if you do poorly once you get it it's like if all you worked for for the past four weeks was that, it's hard to live with. (M2)

> **Q:** Does your academic performance affect your confidence?
> **A:** Yea, totally. Yea, big time. It sucks, you know. It sucks and it makes me feel even worse about myself that my confidence has been so affected. So that sucks, and that's the part that sucks the most, not feeling totally confident about myself and my abilities. And I try so hard to move away from that and not feel inferior because I'm not doing as well in school, and thinking about it seems silly to me, but I can't change the way I feel about that and that sucks and that pisses me off and then I feel even worse. (M1)

Preclinical medical students still see themselves as students and not yet doctors. They still sit through lectures, read materials to discuss in small groups and labs, and the evaluation of their academic performance is very similar to a college undergraduate. The sense of importance attached to excelling in the classroom is potent within the halls of the medical school and the pressure to do so (as presented earlier) is very strong. As I walked with an M1 one morning, he expressed concern regarding his performance on the upcoming exam. I questioned his feelings about being graded on a pass/fail basis, "It's all pass/fail though, for the next 6 months though right?" I asked. "I don't CARE about that. It doesn't matter." He replied emphatically.

> I feel that through college I grew in confidence but now in med school I definitely think I've lost some confidence. And that also has to do with the fact that I'm not doing as well academically as I would like or that I'm used to, so that makes me unconfident. (M1)

> I guess the biggest blow to my confidence has been how little I know and seem to know and how little other people seem to by relying on me about things. I feel like the potential is there but I'm just not realizing it fully. It's there. Part of it's just that there's more intelligent people than where I was and that they're better than I am that was there in undergrad but part of it was that if there someone wanted to figure something out that I felt they would often come to me. No one does that here. And if they do more often than not I don't have the answer. (M1)

Notably, M1 students expressed frustration in their attempts to learn how to properly digest the amount of material they were presented with. Although the M2's appeared to have found their "groove", they often stated the importance of focusing on

what needs to be known now, and disregarding all else. While sitting in the computer lab with a few M2's the night before an exam, I noticed that students would frequently shout out questions to other students, not directly to one student in particular but to all present. When I overheard the response, "That's not on this test" or "He's not gonna ask that", I observed that these responses were frequently accompanied with a negative glace or chastising remark towards the student who asked the question. The focus is on what needs to be known now. In their quest to be productive students, to perform well on exams, which certainly affects their self-confidence and self-image, students focus on what needs to be known and practiced at that particular time.

Given the Amount of Material, the Academic Pressure, and Time Management issues, preclinical students must concentrate on the information and procedures that are directly being tested at that particular time. Concepts and materials that students are not being tested simply do not matter, and paying them any attention will detract from their goals of high academic achievement and therefore have detrimental effects on their self-esteem and identity as a good student. In this sense, because preclinical students do not interact with patients on a regular basis, are tested predominantly on the biomedical aspects of medicine and very rarely (if ever) on the social aspects, and are most frequently surrounded by other medical students, empathizing with other people (e.g., patients) is unnecessary. Given the superfluous nature of empathy for the preclinical student, it can be shed in order to focus more directly on what needs to be known now.

Shedding Empathy to Focus on What Needs to be Known Now

Although researchers of clinical empathy suggest that physicians attempt to understand the perspective of their patients (Hojat et al. 2003), what is emphasized as the most important elements of any doctor-patient interaction are: to focus on gathering the patient's symptoms, identifying the differentials, achieving a diagnosis, and proposing a proper treatment. Empathizing with the patient is not a requirement. The value of these biomedically oriented goals are prevalent in medical school as well. Although the focus of the explicit curriculum of medical school will be discussed much more in-depth in the following chapter, it is evident that the primary concentration of preclinical medical training is on enhancing biomedical and clinical knowledge.

During the course of the academic year in which data was gathered for this study, second year students visited with patients for approximately four hours every week as a part of their Clinical Methods course. Although second year students may have seen actual patients during their volunteer hours as well, the total hours devoted to patient interactions in the M2 curriculum was small compared to the class, lab, and small group hours devoted to the biomedical aspects of medicine (Figure 1). Furthermore, second year students were tested and evaluated on their clinical and biomedical knowledge, and not how they interacted with patients.

> **Q:** Do you think your medical education addresses empathy?
>
> **A:** They tried to bring it up in small group classrooms last year and a lot of people blew it off. I mean it was brought up like, let's all talk about our feelings and you're not going to get a bunch of kids who are staring at books all the time to really talk about their feelings because that's not what were focused on. We're focused on learning this stuff and um, if it's

> not in front of you, this person is not in front of you it's going to be hard, it's not going to be what's most important for you right now. What's most important to you right now is learning "this" shit (pointing to notes). (M2)

As will be discussed in the following chapter, the M1 curriculum was often referred to by students and administration alike as the "New" curriculum because it was comprehensively different than the M2 curriculum (the last year of the "Old" curriculum). The new curriculum is depicted as more patient oriented than the previous (i.e., traditional) curriculum, devoting more hours to patient interactions and the social aspects of medicine (Figure 1). In the second week of the first year curriculum, students met in their small groups and frequently discussed the social aspects of medicine, such as clinical empathy. Yet, the strong desire to move beyond this discussion into more biomedical orientations was resolute, and perhaps best expressed by one first year student through his discussion of the pros and cons of his small group.

> Small groups started off at the start of the year as a super drag. But now it's smoothed out a little bit and the past couple modules, pulmonary and cardio have been pretty good learning experiences in small groups and they were pretty helpful. We pretty much don't do, um, any of the "touchy-feely" stuff. Early on it was a lot of common sense, you know, be nice to people, be courteous. (sarcastic tone) Really? Great! Thanks! Can I go home now? But now it's pretty legit, we're actually learning stuff and we're doing stuff now. (M1)

Furthermore, preclinical medical students are constantly surrounded by other medical students. The amount of material and other academic responsibilities makes it

difficult to venture away from one's study materials and to meet individuals outside of medical school. Hence, connecting with others outside of medical school on an emotional and cognitive level is not only quite difficult, but possibly also potentially unnecessary.

> Because really, in med school your personal life and your academic life are really the same thing. Same friends, same people, there's not a ton of separation between the two. I mean, you're with your friends studying at school until 10 and then you all go out together and then you see them all again the next day at school. You know when people go out they're always like "No school talk", "No science talk", and then sooner than later med school topics come up, and everyone starts talking about science and it's inevitable because that's what you do. There's not much else to talk about. (M2)

> We're always out with each other, and we're always exploring with each other. In a sense it feels a lot like high school, with a lot of the same people around you all the time, taking the same classes and there are some people around you like nursing and PTers but they're not with you. (M1)

The goal for preclinical medical students is to understand, comprehend, and be able to express their comprehension of the material that they will be evaluated on in their exams. Preclinical medical students strengthen their identity and achieve their goals through excelling in the classroom and in the labs. Due to the amount of material to be learned, scholastic achievement is attained by focusing solely on what needs to be known at that time. Because there is little patient interaction and students are very rarely evaluated on their communications with patients in the first two years of medical training,

clinical empathy is perhaps deemed an unnecessary concept to understand or practice during this time and can therefore be shed to focus more intently on the matters that *will* be tested. Furthermore, because preclinical medical students are constantly surrounded by other medical students, connecting with others outside the realm of medicine is highly unlikely. As Nathanson (2003) argues, however, empathy must be cultivated through experience and practice. Therefore, preclinical students in their inability and perhaps unwillingness to connect with others may be shedding empathy to concentrate on their academic responsibilities. Put simply, the concept of empathy, and the act of empathizing, does not need to be known during the preclinical years and therefore preclinical students could possibly be shedding empathy to focus on what does need to be known.

Shedding or Stripped?

Contrary to what I am suggesting, a number of authors propose that medical students are passive beings within the institution that are sculpted and molded by the overall structure of medical education as well as by certain features of the training. Lebaron (1981: 58) even suggested that medical school "..chops up nice kids and turns them into doctors..". Could it be that students are not, in fact, actively shedding empathy, but rather they are being stripped of it by the administrators, instructors, and other faculty and staff? Turning back to the students' own personal accounts, I believe this is not the case.

During their interviews, preclinical students consistently used first person active voice such as: "I put the energy into med school", "..I have to shut down other parts of

myself to get that stuff in..", and "..I've been focusing on trying to get an A" to answer questions regarding how they manage the stressors of medical school. These students expressed active decision making processes such as choosing when and how to spend their limited time, when to answer phone calls, when and what to eat, and what sacrifices to make in their lives to achieve academic success. True, the structure of preclinical education is such that demands much time and effort from the students, yet these students clearly actively adapt to the demands of their environment.

Conclusion

Whereas a majority of previous research on stress in medical school argues that students who experience a high degree of stress decrease in their levels of empathy, this specific research argues that preclinical medical students, in adapting to the stressors of medical training, shed empathy in order to be less vulnerable and sensitive to medical school stressors and to more directly focus on what they need to know during these first two years. Past literature has portrayed medical students as passive hamburger patties, shaped and molded by the medical school machine. I posit that medical students are conscious of the noxious elements of their training and actively seek to defend themselves against them.

> Like soldiers on a battlefield, students must often deal with their emotions alone, or in a chance discussions with colleagues and friends. Many learn to protect themselves and survive, but at the cost of distancing themselves emotionally from patients and peers…" (Novack, Epstein, and Paulsen 1999).

I suggest, that in their quest to be productive medical students, preclinical students may have found that being empathic, clinically and generally, not only made them more sensitive to the stressors of medical training, but also rendered them less able to cope with the stressors' negative impact. In his research, Selye found that the stress response is adaptive because it seeks to preserve the life of the threatened organism. In this case, preclinical medical students, in their attempts to manage medical school stressors, preserve their positive self-image, and achieve academic success by shedding empathy, thereby preserving their lives.

CHAPTER 5

THE EXPLICIT CURRICULUM: ASSESSMENT DRIVES LEARNING

Introduction

In the previous chapter, it was shown that first and second year students each decreased significantly in clinical empathy over one academic year. Surprisingly, the amount of negative impact from medical school stressors felt by students did not account for this drop in empathy. Yet, increases in clinical empathy from Time 1 to Time 2 predicted an increase in the negative impact felt by medical school stressors. Furthermore, the amount of significant positive correlations between the negative impact of particular stressors and levels of empathy decreased within and across each grade cohort. Hence, it was suggested that increased empathy may render students more sensitive or vulnerable to stressors, and therefore preclinical students may be shedding empathy in order to adapt to the arduous nature of medical training during these first two years. Additionally, it was proposed that preclinical students shed empathy to be more productive academically, maintain a positive sense of self, and focus more directly on the biomedical and technical aspects of patient care. It was also proposed that preclinical students, in their desire to be more productive students, maintain their positive sense of self, and avoid academic related stressors, may be shedding empathy to focus more directly on the material that is *needed* to be known during these first two years; not connecting with patients, but rather biomedical and technical concepts, procedures, and practices.

This and the following chapters focus on how processes of socialization within medical school may account for the decline in preclinical students' levels of empathy. Put simply, socialization refers to the social conditioning processes whereby an individual internalizes the knowledge, skills, values, and behaviors deemed appropriate by socializing agents, entities that instruct or influence (teachers, group leaders, classmates) (Coombs 1978; Hafferty 1988). Therefore, it is through these socialization processes that medical students learn to behave as they *should* with colleagues and patients. Past literature has argued that medical school socializes students through formal (explicit curriculum) and informal (implicit and "hidden" curriculums) channels (Hafferty 1998), and has suggested that elements of each curriculum serve as mechanisms that partially erode medical students' positive attributes (Kramer, Ber, and Moore 1989).

Utilizing previous research on the *Testing Effect* and exploring the widely held belief that assessment drives learning, this chapter investigates the structure and implementation of the explicit medical curriculum and suggests that the lack of examination and testing in the psycho-social aspects of patient care (i.e. communication skills and empathy) during the preclinical years, as well as an overall reduction in hours devoted to the social aspects of medicine in both the M1 and M2 curriculums, may lead to the decreased levels of empathy found among students. This argument is two-fold: the lack of extensive evaluation and decline in hours not only severely hinders the opportunities for students to learn and practice the art of clinical empathy, but also socializes the students to focus on that which *is* tested and valued by the academic culture of medical training, which emphasizes the biomedical and clinical aspects of patient care

over empathy. In other words, if it is not on the exam, students will not learn the material that comprises training in empathy. This deprivation of empathic exercises and particular emphasis of value, I argue, lends to the lessening of clinical empathy among preclinical students[28].

This chapter will first dissect the M2 "traditional" curriculum, provide second year students' personal perspectives of their courses, as well as highlight the significant lack of examination of the psycho-social aspects of patient care during this specific year. To better understand why preclinical medical students would decrease in empathy due to this deficiency in testing, I offer a basic discussion of what is meant by the testing effect and the notion that assessment drives learning. I will then explore the dawn of the "New" Curriculum at County's School of Medicine (the M1 curriculum) by analyzing interviews with administration as well as descriptions of the curriculum offered by school officials. Although there appears to be a much stronger emphasis on patient-centered care and the patient as an individual in the new curriculum, I argue that regardless of this new focus, the ever-present lack of formal examination in psycho-social aspects of patient care within the curriculum as well as the apparent decrease in hours over the year devoted to teaching the social aspects of medicine in general, still provides little to no opportunities for students to engage in clinical empathy and "teaches" students that empathy is not actually truly valued by the institution of medicine. This lack of practice and learning, as well as process of socialization lend to the decrease in empathy among preclinical students.

[28] This argument does not state that current medical education is "wrong" or lacking, it is understood that clinical knowledge is imperative. Rather, this argument focuses on the structure of assessment of students' skills as it currently exists in formal medical education.

The M1 and M2 Curriculum of County School of Medicine

Data gathering for this study began in the summer of 2007, a very exciting time for the County School of Medicine (SOM). During this time, County's SOM was finalizing construction on both a state-of-the-art medical education complex, as well as the new curriculum that would be instated for the incoming first year students. The erection of this new medical education complex was timed with the ushering in of this new curriculum and the entering class of 2011 to symbolize a new era in medical training that was to begin at County, one that would create more professional "physicians dedicated to the understanding of the social, psychological, and economic issues of the patient, the family, and the community" (Course Bulletin 2008: 61). Given that the curriculum of the class of 2010 was the "traditional" curriculum that existed at County SOM for many years, 2007 represented a potentially dramatic change in the structure of the medical training. Therefore, it is necessary to provide a basic outline of the two curriculums that were observed during this study.

Class of 2010: The "Traditional" Second Year Curriculum[29]

During the 2007-2008 academic year, the second year of medical training extended over a period of roughly 10 months and contained about 34 weeks of instruction. This year included lectures, small group discussions including Problem-Based Learning exercises (PBL's), laboratory work, demonstrations, weekly patient interaction (Clinical Methods), and examinations. Particular to this year of the curriculum, the second year allowed for required elective work during the spring

[29] I observed the class of 2010 only during their second year, so analyses of their curriculum will focus solely on the second year.

semester. "Electives are offered by all departments and thus cover a wide spectrum of opportunities (clinical work, lecture and laboratory courses, directed study, seminars, research, etc.)" (Course Bulletin 2006: 46).

The entire four years of training experienced by the class of 2010 can be considered traditional in that the majority of medical schools in the country have similar basic educational structures. That is, the first two years consist of basic science course work, and the second two years consist of clinical instruction and apprenticeship. The second year of this specific cohort's curriculum can also be considered traditional because its basic configuration has existed and been employed for decades by a majority of American medical schools. Coombs (1978: 91), in his study of medical students in the mid-to-late 1970's listed the courses required in the second year of the institution he researched: Human Reproduction, Introduction to Clinical Methods, Pathology, Perspectives in Medicine, Pharmacology, Physiology, Preparation Time, Preventive Medicine, Psychopathology, Radiology, and Surgery. In their classic work, *Boys in White*, Becker et al. (1961: 185-186), also listed the courses required of second year students in the medical school they researched: Pathology, Microbiology, Pharmacology, Physical Diagnosis. Table 5a depicts the second year courses required at Country SOM: Microbiology/Immunology, Clinical Methods, Pathology, Pharmacology, Human Behavior, Pathophysiology, and Medical Problem Solving. Not surprisingly, a number of these courses overlap. As such, the traditional second year medical education at a number of American medical education institutions has changed little from 1960 to 2008.

The second year curriculum represents what Becker et al. (1961) refer to as "The Big Three" (Pathology, Microbiology, and Pharmacology), in which students are focused

on attaining further basic medical knowledge that they will use when on the wards during 3rd and 4th year. These courses account for 29 out of the 57 total credit hours for the year and it was abundantly clear from my observations that the primary focus of these courses was the structure and function of disease. The class of 2010 was also required to take Human Behavior, a semester long course that explored normal and abnormal mental mechanisms, personality deviations, and the more common mental disorders. Medical Problem Solving consisted of what is termed by students and faculty alike as "PBL's" or Problem Based Learning exercises in which students are given bits of information over time regarding a patient's symptoms and history, and the students generate the differentials, diagnoses, and potential treatments. Also common in the second year curriculum, Introduction to Clinical Methods instructs students in the fundamentals of history taking, conducting a physical exam, basic comprehension and interpretation of lab tests, and patient communication. As required by the Clinical Methods course, the class of 2010 visited local clinics and hospitals for approximately four hours each week, and students had opportunities to shadow practicing physicians, interview patients, and possibly conduct other remedial medical tasks[30] with live patients.

Second year students often noted that the material they learned over the course of the year felt much more relevant to clinical practice than that they had learned the year prior. One student said that

> The material was clinically relevant rather than just random biochemical pathways that I would never ever encounter in clinical, the clinical world. It actually felt like learning

[30] As I learned from my interviews with M2's, the level of engagement in these activities was dependent upon the preceptor, or physician the student was shadowing, and how involved he/she would allow the student to be during their visits.

> medicine for the first time and learning about drugs, learning about diseases instead of biochem or like isolated anatomy. It was more relevant stuff.

Yet, when asked what classes they found least valuable to their learning, students were quick to note particular courses. However, the reasons for the perceived lack of course value varied. For some courses, particularly PBL, the grading system tainted the students' experience. A typical response was:

> PBL, that sucked. The worst thing about it was the grades. I mean I think it's good to shoot the breeze and toss out differentials and think about a plan but the fact that they had grades about this stuff and we were tested on it was ridiculous. First of all, it's very subjective. I don't mind having grades for Pharm and Pathophys because it's objective, but how are you going to decide that one person has…I mean, I think it's worthwhile in terms of enrichment but it really adds nothing to our overall learning.

> I hated PBL 100%. It really shouldn't be graded. It's just eight med students in a room with the course guidelines not really clearly set out so no one knows exactly what we're supposed to do so it's kids trying to outdo each other every step of the way.

Lecture style and the *how* the material was presented was another issue that students took with particular classes.

> With Pathophysiology they'll let you know if something big is coming. The problem is, they think it's great because it's all specialists and each lecture is the special area of the specialist. What's wrong with that is that each lecturer thinks that it's the best thing in the world and

> you get a series of 70 slides in 50 minute presentations and everything is important. Well, it's really hard to see the really important points when according to the lecturer EVERYTHING is important. And that happens over and over.
>
> I mean with Path it's really difficult to do that because there's all these pictures and you want to look at them. And when XX teaches he goes a bit slower so you can actually learn it. The rest, they go through like a hundred slides and you can't keep up.

Similarly, second year students also disliked courses for the *type* of information that was presented during lectures:

> Pharm is just this is drug x, it interacts with blah, it does blah. It's just like boom-boom-boom. Whereas with Path, Path, they're like "Here with this picture…", you actually have to be there to see what he's pointing to and what they're getting at.
>
> I skipped Pharm because it's just a lot of information and you're not going to absorb it.
>
> I skip Pharm because the information is, there's nothing new they're going to present that I can't read in a transcript and I'd rather not be there. It's just cut and dry. Here's this, here's that, and there you go. There's nothing new to that class.

In my interviews with them, many second year students expressed a high level of comfort with learning the material more sufficiently on their own, rather than attending lectures. Purposely not attending lectures not only allotted these students more time, but also allowed them to absorb the material in ways they deemed more efficient and

productive.

Q: Do you skip classes?

A: Certainly.

Q: Do you skip particular classes on purpose?

A: I never go to Pharm. I try to go to Path when I can. I find that my grades really don't change if I go to class, but I like Path because they show pictures and they make it worthwhile. Pharm is just like I could do the same thing at home

I have a lot of trouble paying attention to someone who is lecturing to me about something. I'm a much better learner just reading it so I don't go to class but I'm at home or a coffee shop or somewhere in the school studying exactly what they're going over in the class. I'm just better at retaining it that way.

I did not go to Micro, Microbiology, once the whole year. The transcripts for this year are really good and straightforward and I wouldn't absorb that in that in the classroom. I look over all the old stuff before our transcripts come out and compare. And pretty similar with Pharmacology; there's a lot of facts, straightforward, you just need to memorize. You know, remember, remember, remember.

Yea, I mostly skip Pharm. I think it's a really well taught course, it just happens to be the one I skip because I can get by without going and I find that I do better in the classes that I do skip. I mean, I do much better when I manage my own time and work on my own terms and schedule.

> I don't go to any classes. Part of it is the way the classes are taught, part of it is that I learn better on my own and part of it is that I'd rather not. I used to but I just do better on my own and it just makes more sense. Especially those instructors that put everyone on PowerPoint, which is most instructors. I mean at this point the only reason you go to class is to get that personal psychological satisfaction of going to class, I really mean that. I mean what you get out of class in terms of what you learn is small compared to what you can learn on your own if you're focused. It's not Socratic, it's straight talking at you. You know, it's not interactive. It's the nature the classes are taught. There are facts and you need to absorb them.

What is evident in the prior statements is that medical students see the need to absorb facts and memorize the "important" material. It does not matter how you choose to learn the material, on your own or by attending classes, the main objective is to be able to 'regurgitate' the information during the exam. According to these students, success on the exams is the key to success in medical school.

> You could study as little as possible to pass the test and then not even think about it anymore. Not a lot of learning for learning sake. If you don't have to learn or the class is going to be easy there won't be much effort in trying to learn. (M2)

Thistlethwaute (2006) suggests that medical students' minds are fixated on assessment. Similarly, Becker et al. (1961) notes that the second year students they observed were primarily interested in discerning what the faculty wanted them (the students) to know. A productive means of attaining this information, according to Becker et al., was for the students to analyze current and past exams. Students use previous

exams to study what needs to be known, not only for the questions that have been asked, but also because the exam itself is a representation of information that is deemed valuable by the course instructor, the school administration, and the culture of medical training.

The Nature of Step 1 of the USMLE and the *Testing Effect*

Examinations are evaluations of students' knowledge regarding the significant information that has been presented to them (Larsen, Butler, and Roediger 2008). Students in their second year are tested on material that is meant to improve their overall clinical knowledge so that they may be more efficient and erudite on the wards in the following years. Serving a dual purpose, however, these examinations are also meant to prepare students to serve as stellar representations of the quality of medical education offered at County SOM when it is time to take Step 1 of the United States Medical Licensing Exam (USMLE)[31]. Frederiksen (1984) states that test information is necessary in holding schools accountable in terms of students' progress and students' academic success. The most prominent measure of success for preclinical students is their achievement on Step 1 of the USMLE. In an interview with Earl Dobson, MD, he expressed his concern with contemporary medical education's over-emphasis on tests, and the recitation of facts and figures. Furthermore, Dr. Dobson noted that the Step 1 exam was never designed to be a test to exclude students from future residency programs but this exam now serves as the primary determinant for a residency interview, which he finds disturbing.

[31] National Board Exam taken by all second year students in American Medical Schools at the end of their preclinical years.

Regardless of Dr. Dobson's and others' opinions about the use or misuse of Step 1's, the institution of medicine holds this exam to be an unmistakable marker of a high quality medical student. According to the National Board of Medical Examiners (NBMA), "The USMLE Step 1 is the first of three examinations that you must pass in order to become a licensed physician in the United States" (Le et al. 2008). Therefore, the knowledge that is evaluated by the Step 1 exam must be imparted to the students by the medical school instructors. The information represented within this exam is, in fact, paramount to the success of the student. This was quite clear when I learned that as the class of 2011 neared their time to take the Step 1 exam[32], the administration, realizing that they had not fully presented particular material that would be on the exam, set weeks aside at the end of the semester to teach specific material for the exam. The Step 1 exam is clearly a tool utilized by the institution of medicine to perpetuate the legitimacy of the practice and education of medicine by sorting those students who have gained the knowledge valued by the institution from those who have not (Epstein and Hundert 2002).

Therefore, in order to properly prepare preclinical students for Step 1 of the USMLE, the material on the exams for their courses must mirror the material represented on the Step 1 exam. This testing, in turn, imparts to students the knowledge of the material itself, but also the knowledge of what material is valuable enough to actually take the time to teach and to learn. Put simply, preclinical students are socialized through the explicit curriculum to understand that what is on their exams is what is deemed of significant value by their administration and by the American Medical Association (AMA). When asked if the psycho-social aspects of patient care should be raised in

[32] This was during the 2008-2009 year.

second year classes, an M2 had this to say:

> I like having it brought up in classes that offer more discussion and conversations. At the same time though, if we decide that something has value, then I believe that it's almost necessary that we get tested on it, which is weird because I don't think that's the best way to really understand it but if that's what conveys to everyone that it's important and that it matters and sort of locks in a need to understand it, then that's the way to go.

Testing on studied material improves learning and retention of that particular material; this is the fundamental axiom of the *testing effect* (McDaniel et al. 2007). Preclinical students are tested on concepts and principles in Microbiology, Immunology, Pathology, Pathophysiology, Pharmacology, Psychiatry, Anatomy, Physiology, Embryology and other disciplines throughout their preclinical years to promote subsequent learning of these materials for Step 1's and future Board exams. "The direct effect of testing is based on research showing that when students are tested on material they remember that material much better than when they are not tested on the material. This is called the *testing effect*…"(Larsen, Butler, and Roediger 2008: 959). The testing effect supports the popular belief that assessment drives learning. Many medical educators and researchers attest to the notion that testing on subject matter motivates students to learn that material (Eraut 2004; Wood 2009; Cantillon 2008; McLachlan 2006). Hence, not only do the tests within the explicit curriculum socialize students to understand what is revered by those in the positions they aspire to, but the tests also serve as the mechanisms to which preclinical students gain knowledge and practice of the material. It is clear that second year students are exposed to the concepts and principles

of the biomedical and technical aspects of medicine during the first two years of their curriculum, but are the exposed to the psycho-social aspects of patient care? Is this even *valuable* material to teach and learn in the second year of medical school?

Q: Do you think the social aspects of medicine are as important to learn as the biomedical aspects?

A: I feel that that is something that we're always going to have to fight against. Our biases are to go towards the more technical always, whereas it seems like information and experience. (pause) We know that a good physical exam is often better than a series of lab tests and we know that listening to a patient about their experience being ill or sick is invaluable to how we as doctors would proceed, but I don't feel like that is what is propagated by the culture of medicine right now.

Q: Do you feel that the psycho-social aspects of medicine should be taught in your classes or as a class?

A: I feel that med school is in a tough place because they are all in that culture themselves and I think they want to convey the message that those things are really important, um, I mean, even though it gets a second billing. But I mean, the way we're assessed and the way med schools are assessed, they don't look at that stuff. Um, and, so I guess yea, I bet they feel hard pressed in having to change things and hoping we take it through and learn the social stuff through the apprenticeships but the other stuff, the biomedical stuff, will be the focus of what they teach us in the classroom.

Q: How important do you think it is to your training to be taught about psycho-social aspects of patient care?

A: I think it's really important and something that we don't get a lot of exposure to.

Q: Do you think the psycho-social aspects of patient care are as important to learn as the biomedical?

A: I think that it's very important. I mean, we don't get a lot of practice in that kind of training, mostly trial by fire.

Second year students appear to acknowledge a degree of value in learning and practicing psycho-social aspects of patient care such as empathy. The students attest, however, that their curriculum does not offer them the opportunities to engage in these practices. Recall that the class of 2010 interacted with live patients and shadowed practicing physicians for four hours every week during their second year. Although students did mention that their preceptors served as positive and negative role models regarding doctor-patient interactions[33], it would seem as though these clinical experiences did not serve as quality portals to gaining the practice or knowledge of clinical empathy. Furthermore, these students were only formally evaluated on their patient communication skills at the end of their Clinical Methods course (with a standardized patient).

Q: Do you think your curriculum addresses the psycho-social aspects of patient care?

A: Not at all, no. Maybe in Clinical Methods a little bit but really nothing. Sometimes in our clinical correlations, but really overall this year is just about learning facts.

[33] This will be discussed more in-depth in the following chapter.

> **Q:** Do you think your curriculum exposes you to the psycho-social aspects of patient care?
>
> **A:** I don't think they do an adequate job at all. They may do better at other med schools, but I don't think they do nearly enough. I mean sometimes we'll talk about that stuff for like five minutes in a Doctor-Patient class but you could definitely graduate without either talking about it or even understanding it and that's not good at all.

Table 6 shows the number of hours per week both the M2 (blue line) and M1 (red line) curriculums devote to teaching the social aspects of medicine over the course of time data was gathered for this study. The hours were calculated by analyzing the weekly schedules for each grade cohort (from August 2007 to April of 2008 for the M2 cohort, and from August of 2007 to June of 2008 for the M1 cohort), and adding the total possible hours in which it was most likely that social aspects of medicine were discussed, exhibited, learned, and/or taught[34]. Although this is a rudimentary measure of the possible hours the traditional second year curriculum devoted to the discussion, teaching, and potential learning, of the social aspects of medicine, it is quite clear that there is a significant drop in the number of hours over the course of the academic year. Therefore, not only were M2's not extensively formally tested on the psycho-social aspects of patient care, this graph suggests that they were also exposed to less and less opportunities to learn and practice clinical empathy and other patient communication skills over the course of the academic year.

The content of academic tests illustrates what information, practices, and procedures are deemed valuable by the regulating institution. Regarding the class of

[34] For the M2 cohort this included all Clinical Method hours (except exams), and all Human Behavior course hours. Furthermore, and extra two hours were added to each week. Hours for this cohort excluded small groups, and PBL's.

2010's second year curriculum, it is apparent that not only was there a critical absence of formal testing of psycho-social aspects of patient care, but that there was an overall decrease in the course hours devoted to the study of the social aspects of medicine. This lack of formal testing of psycho-social aspects of patient care, I argue, may have led to the decrease in second year students' levels of clinical empathy, as these students were not frequently required to practice, discuss, or learn the art of clinical empathy, and they were socialized to believe that clinical empathy is not as important as the biomedical and technological aspects of medical care.

Class of 2011: The "New" Curriculum

The M1 curriculum for the 2007-2008 academic year was to serve as a bold and fresh approach to medical training and medical education.

> Emory's new curriculum reflects the extraordinary advances taking place in biomedical science; meets the needs of an ever-changing local and global health care environment; takes advantage of the unique educational resources in Atlanta; and respects the intellectually gifted and highly motivated students who choose to come to Emory (Course Bulletin 2008: 60).

Interestingly, one of the new curriculum's core objectives is to create physicians who are committed to understanding, valuing, and addressing the sociological, psychological, and economic issues of their patients, the patients' family, and the overall community (Course Bulletin 2008). Not only do students attain the core competencies in basic and clinical science as they had in the tradition system but this new curriculum

touts the integration of more "hands-on" patient experience by continuing the *Week on the Wards* as well as introducing OPEX (Out-Patient EXperience), where students spend four-to-five hours every other week shadowing a practicing physician(s) in Family Medicine, Internal Medicine, or Pediatrics. Whereas *Week on the Wards* serves as an introduction to the role of the physician for the M1's first week of medical school, OPEX is a 12 month experience, and as Dr. Earl Dobson explained, these specialties were chosen specifically because doctors within these specialties are known to have a high level of patient contact, communication with their patients, and be more involved in their patients' lives. Furthermore, according to Dr. Dobson, the goal of OPEX was for students to experience a deeper level of doctor-patient interaction, something he feels the current culture of medical training does not foster. Put simply, within the new curriculum, OPEX was to serve as a primary mechanism in which preclinical students learn[35] doctor-patient communication skills as well as history taking and other fundamental elements of doctoring by shadowing professionals as well as possibly engaging in these tasks to some degree[36].

Yet another arena in which the new curriculum focuses on demonstrating the importance of the psycho-social aspects of patient care to the students is through the significance placed on the societal system for organizing students. At County SOM there are a total of four societies: Osler, Semmelweis, Lister, and Harvey. These societies have been in existence at County's SOM for some time, even the students of 2010 were divided into these particular societies, yet these small groups' responsibilities and level of significance in terms of the overall curriculum has been greatly expanded within this new

[35] This notion of "learning" implicitly will be discussed more in-depth in the following chapter.
[36] Much like the class of 2010's Clinical Methods experiences, the degree to which first year students were allowed to engage in these tasks during their OPEX time was dependent upon their preceptor.

system. There are four clinician-advisors within each society (therefore 16 total), and each advises eight-to-ten students within the small group. "The faculty members are teachers of clinical skills, small group mentors, and the students' primary link with the School of Medicine and [County] Resources" (Course Bulletin 2008: 61). Not only do these small groups meet twice a week during their preclinical years of training, the new curriculum was constructed so students can continue to meet in their small groups during their clinical years.[37]

Tables 5b and 5c depict the preclinical term of this new curriculum. What is perhaps most remarkable is that there is no longer a "First" year and a "Second" year, rather the curriculum of these two years are combined to serve as 18 months of a general preclinical curriculum in which there is earlier completion of the basic and clinical sciences, and therefore an earlier time-line for students to take the USMLE Step 1 Exam[38]. *Phase 1*, which focuses on core knowledge of the basic and clinical sciences, serves as the backdrop to the preclinical curriculum. The "Foundation" courses within Phase 1 are co-taught by basic scientists and clinicians; there are no department-based courses, this particular phase of the curriculum was constructed so that each element would be fully integrated. First year students begin their training, after *Week on the Wards,* in the "Healthy Human" section (lasting for four months) which emphasizes:

> …the important role that behavior plays in health and disease; that the approach to the patient must include consideration of the community, environment, family, and the "whole" of the person; and the importance of health human activities, such as exercise, procreation,

[37] The "implicit" learning within these small groups and the importance of the Advisors as Role Models will be discussed more in-depth in the following chapter.
[38] There are many more interesting changes made to the curriculum regarding the clinical years but this specific work focuses solely on the preclinical years.

and cognition/creativity as foundational to human well-being (Course Bulletin 2008: 62).

The "Healthy Human" section is followed by the "Human Disease" section which includes instruction on the principles of Microbiology, Pathology, Immunology, and Pharmacology. "Human Disease" consists of organ block sections, focusing specifically on particular organs and systems of the body at a time. First year students take Human Anatomy and participate in cadaveric dissection during the first five months of this section. Not only was the "Human Disease" section of the new curriculum constructed to try to connect what specific area of the body the students were dissecting in Anatomy Lab with course lectures and small group discussions, but the intention was also to bring in real patients with diseases consist with what the students were studying at that time. These patients, and sometimes the patient's family, would be presented to the entire class in the lecture hall by the patient's doctor. Table 5d depicts the breakdown of the traditional first year curriculum, as experienced by the class of 2010 during their first year. Undoubtedly, this new curriculum, with the introduction of OPEX, a much larger significance placed on the small groups, increased number of patient presentations, and a more integrated curriculum overall, serves not only as a novel approach to medical curriculum, but also offers a distinct emphasis on increasing frequency of patient contact as early as the first year, and designates a distinct importance on the psycho-social aspects of patient care.

But why change the curriculum in the first place? John McKenzie, MD, stated that the old curriculum was not "bad", in fact, it had positive results. According to him, the goals of the new curriculum was to maintain the academic rigor yet increase student quality of life, as well as increase the emphasis on role modeling and issues of

professionalization. Dr. Benjamin Smith, explained to me the elementary history of the creation and goals of this new curriculum. From an institutional perspective he argues, many of the faculty of County SOM were not satisfied with the way in which the students were "responding" to the training within the first two years. Although there were many excellent individual courses, there appeared to be a significant rate of burnout, lack of enthusiasm, and sense of feeling overwhelmed by the students in the traditional curriculum. Another driving force behind the curriculum reform, according to Dr. Smith, was the Liaison Committee on Medical Education (LCME) accreditation. Sponsored by the American Association of Medical Colleges (AAMC) and the AMA, the LCME is responsible for granting accreditation to all U.S. and Canadian medical schools, and according to a number of those in County SOM's administration and faculty, the LCME board was calling for a continued focus on the basic and clinical sciences but a higher degree of exposure to and training in community health, end-of-life care, family violence, multicultural aspects of medical practice, nutrition, and preventative medicine within the medical schools' preclinical curriculum (Smith interview 9/08) . The discussion regarding how the make the alterations began over four years ago, and as a number of parties involved in the construction of this new curriculum will attest to, the modifications and adjustments are on-going. This new curriculum, according to Dr. Smith, Dr. McKenzie, Dr. Dobson, and others, is very much a living organism.

Perhaps the strongest evidence that the new curriculum truly focuses more on the psycho-social aspects of patient care that the traditional curriculum was presented within the very first week of medical school for the first years, after *Week on the Wards*. During this week the first year students were bombarded by issues of multi-cultural competency,

medical anthropology, medical sociology, public health, professionalism, patient communication skills, issues involving patients' families, and clinical empathy. In his lecture to M1's on *Healers in the Cultural Context* (8/16/07), Douglas Michaels, a professor in the anthropology department at County University, stated "With this new curriculum, we're trying to change the culture so that it has more of an emphasis on cooperation, teamwork, and patient-centered care".

In a number of his addresses to first year students during this particular week, Dr. Dobson frequently spoke of seeing patients as individuals and not as diseases, connecting with patients on a personal level, and treating patients as though they are part of your family. Similarly, while presenting his patient to the students, one physician even stated that he tries to empathize as much as he can with his patients as he finds it makes him a better physician. This particular week in the first year curriculum was obviously meant to highlight the goals and fundamental bones of the new curriculum: patient-centered care, cultural competency, public health, and professionalism. This is depicted in Table 6. The hours of the M1 curriculum (red line) devoted to social aspects of medicine is: a.) clearly higher compared to that of the M2 curriculum, and b.) is dramatically high in the first month (August), and that is due primarily to the intense emphasis placed on the social aspects of medicine during the lectures and small group discussions during this first, and subsequent weeks.

However, despite the abundant emphasis placed on the social aspects of medicine during these first few weeks, students were never formally tested on the material presented during this time. When asked their thoughts on the first week of their medical training in regards to the lectures and small group discussions, M1 students had this to

say:

> Small groups started off at the start of the year as a super drag. But you know, I think that was sort of, you know more that I've been around I understand it seems like when we start up we don't know exactly what we're doing, let's get this thing rolling, and that sort of bums me. Early on it was a lot of common sense, you know be nice to people, be courteous. (Sarcastically) Really? Great! Thanks! Can I go home now?

> I think if they had broken it up and you know, had one of those lectures, like one week, and then it's like a break, something different from the hard-core science stuff rather than having all this soft stuff right in the beginning. But people may not pay that much attention to it anyway because they may feel the science stuff is more important.

> But now that I look back at some of that intro stuff I'm like REALLY?, like we sat through that long period of time. But what I think they were trying to do was trying to settle us into going to school and then like starting the actual classes and I guess that really helped me, but not necessarily the actual material that we learned because that stuff was pretty pointless.

> I don't really remember it at all. No, I don't really remember that stuff. The only thing that pops in my head is the Public Health guy that gave a talk about sidewalks and urban health planning. I don't know, I just don't really remember that stuff.

On the one hand, it is clear that the new curriculum spotlights humanitarianism and patient-centered care, and that this emphasis came across to the first year students. M1's not only expressed that this first week laid the ground work and provided a context in which to engage in thoughts and discussions of these concepts, but also established a

"humanitarian vibe" for the curriculum and the school itself. Turning back to the *Testing Effect* however, and the notion that assessment drives learning, although there was a heavy focus on clinical empathy and other psycho-social aspects of patient care, some students, perhaps many, not only did not find the importance or value in these lectures and discussions, but also clearly were unable to recall the information presented to them during this time period. I argue that if the information was more formally evaluated in an exam (or exams) of some sort, students not only would have taken the material more seriously, but also internalized the information more readily as it was noted earlier that tests reflect what is truly valued by the institution and drive learning.

Despite the strong degree of attention paid to patient-centered care, the number of hours of the M1 curriculum devoted to the discussion, teaching, and learning of the psycho-social aspects of patient care does decline over the course of the academic year[39] (August 2007 – June 2008), although not nearly as remarkably as in the M2 curriculum. The M1 students themselves also noticed this decline over the course of the year.

> …the past couple of modules, pulmonary and cardio have been pretty good learning experiences in small groups and they were pretty helpful. We pretty much don't do um, any of that "touchy-feely" stuff. Now it's pretty legit, we're actually learning stuff and we're doing stuff now.

> I mean I can't remember the last time we had any conversations or sessions on that social stuff though, and no standardized patients recently and no real interaction with the patient

[39] Hours in the M1 curriculum devoted to the social aspects of medicine was measured by adding all hours of courses and individual lectures that even remotely hinted at the social aspects of medicine (i.e. *Marketing and Advertising of Drugs* and *Burden of Skin Disease*). All case presentations, small group meetings, OPEX hours, and Week on the Ward hours were also included. Given the nature of the new curriculum, 3 extra hours were added to each week.

sort of stuff really, so I think they could definitely do a better job on that.

Q: Do you think County focuses more on the social aspects of medicine?

A: Talking to some of my friends at other medical schools, you know, we focused a lot more on that type of stuff right from the beginning. We don't do so much anymore but it started with a lot of the small group stuff on uh practicing the patient interview, learning how to take a good history, some of the touchy-feelies. They really did put a lot of emphasis on that stuff early.

Q: Do you see a continuation of that emphasis as you moved on through the year?

A: We haven't done much at all with that sort of stuff. Everything we've done thus far in small groups has been pretty actually learning issue sort of stuff, biomedically oriented. They haven't been about you know, how do you tell a patient they are going to die, they haven't been more abstract or philosophical for several months now. And I don't think they're putting those by the wayside but we're getting to the full tilt of learning now and I suppose we sort of have to focus on the real things.

The last sentence of this statement summarizes my argument within this chapter: preclinical students do not see the psycho-social aspects of patients as "real things" that they need to learn. They may feel that clinical empathy is important to engage in and is an important ingredient in positive doctor patient relations, as a majority of them expressed during their interviews, but given that it is not formally evaluated, and that the discussions of these topics declines over the course of the year, students focus more intently on what is truly valued by the institution, that which *is* tests and consistently addressed in small groups, labs, and lectures. It is vividly evident that the new curriculum of the first year creates a "humanitarian vibe" and focuses much more intently

on parlaying the importance of patient-centered care and the social aspects of medicine more so than the previous, traditional curriculum. This focus, however, although acknowledged by a number of first year students has still allowed for a decline in clinical empathy among first year students. It is true that the students of the class of 2011 during their first year shadowed physicians for four hours every other week, witnessed sporadic patient/case presentations, and did practice history taking with standardized patients, yet perhaps these experiences did not provide enough opportunity to practice the art or see the value of clinical empathy.

Conclusion

In conclusion, preclinical students during the year of 2007-2008 were not extensively evaluated on the psycho-social aspects of patient care. Furthermore, the hours of both the M1 and M2 curriculums devoted to the teaching and discussion of clinical empathy and other patient communication skills, declined over the course of the 2007-2008 academic year. I argue that these voids not only led to a lack of practice and discussion of the art of clinical empathy, but also expressed to students what is and what is not truly valued by the institution of medicine, and in turn, served as mechanisms that exacerbated decline in clinical empathy among preclinical students.

CHAPTER 6

THE IMPLICIT CURRICULUM: ROLE MODELS & MODELS OF ROLES

Introduction

The previous chapter examined how nuances of the *explicit curriculum* may lend to the decrease in preclinical students' levels of clinical empathy. This chapter, however, explores aspects of the *implicit curriculum* within medical school and how socialization processes, namely how the internalization and imitation of modeled behavior, may contribute to the loss of empathy among first and second year medical students. Merton (1957) contended that socialization served as the "..process through which individuals are inducted into their culture. It involves the acquisition of attitudes and values, of skills and behavior patterns making up social roles established in the social structure" (41). The formal socialization processes, as discussed, are rooted in the explicit curriculum, testing and therefore reinforcing the current foci of the culture of medicine: biomedical and technical knowledge. However, medical students are also socialized through informal processes such as the behaviors and attitudes exhibited by instructors, practicing physicians, and more advanced students.

Role Models and Models of Roles

Literature regarding the inclusion and enhancement of humanism and patient-centered care in medical education frequently highlights the importance of instructors, small group leaders, and preceptors modeling these values to students (Shapiro 2002; Wright, Wong, and Newill 1997). Put simply, figures of authority in medical training

serve as socializing agents for medical students, exhibiting acceptable behavior towards patients, doctors, and other medical staff, practicing and reinforcing institutionalized norms, and engaging in and displaying proper levels of emotions (Becker et al. 1961; Hafferty and Franks 1994; Matthews 2000). By identifying, internalizing, and imitating behaviors and attitudes displayed by socializing agents—i.e., practicing physicians, course instructors, small group leaders, and even 3rd and 4th year students—preclinical students are not only informally "taught" what is revered but in turn, also reinforce and perpetuate these norms and values (Maudsley 2001).

However, not only do a majority of past studies on the impact of role modeling on medical education generally neglect experiences of preclinical students (Becker et al. 1968; Gaiser 2009; Williams et al. 2008), but a number of these studies also use the term Role Model to identify practically any authority figure within the medical training system (Kenny, Mann, and MacLeod 2003; Maudsley 2001; Hundert 1996). Therefore, not only is there a significant lack of research on the how modeled behavior impacts first and second year students, but also due to a lack of conceptual clarity, it is unclear who actually serves as role models for preclinical students. This chapter explores the recent emphasis placed on role modeling and faculty development programs in terms of enhancing empathy and compassion in medical training. By first distinguishing between "role models" and "models of roles," I then offer clear examples of role models within County SOM's new curriculum, as well as present first year students' perceptions of this aspect of the informal curriculum. Finally, I will examine and present first and second year students' thoughts and experiences regarding OPEX and Clinical Methods,

specifically highlighting the differences these students make between role models and models of roles.

Previous literature suggests that role modeling, and informal curriculum in general, significantly impacts medical students' attributes and traits and may lend to the decrease in students' levels of empathy. I argue, however, that this is not the case regarding preclinical education. I posit that first and second year students decipher between empathic, compassionate behaviors and values exhibited by role models that they wish to internalize and emulate, and the cynical, unhelpful behaviors exhibited by models of roles that they wish to dispel and protect themselves from internalizing. I suggest that whereas role models during preclinical education may serve as positive examples of productive doctor-patient relations and clinical expertise, the discouraging and dispiriting attitudes expressed by other models of roles have little to no negative impact on preclinical students' levels of empathy.

The Importance of Role Models and the Informal Curriculum of Medical Education

The modeling of poor behavior by instructors and clinical trainers has been suggested as a detriment to students' positive psycho-social attributes (Klass 1987; Konner 1988). This has led researchers to not only address the overall impact role models have on medical students' levels of empathy, but also to design programs aimed at developing and magnifying levels of compassion, empathy, and humanistic attributes within authorities of medical school.

Work by Branch et al. (1993) suggests that particular experiences within the informal curriculum significantly impact students' views regarding what it means to be a

doctor. When analyzing "critical incident reports" written by clinical medical students, Branch and colleagues found four main sources of conflict for students during these experiences: expression of empathy, difficulty acculturating, the struggle between empathy and acculturation, and blending empathy with acculturation. The Branch et al. study shows that clinical medical students face difficulty trying to be empathic and still practice the behaviors and attitudes expressed by those around them (particular hospital and clinic staff), as the two tasks do not always coincide.

Shapiro (2002) asked clinician-teachers to reflect on what empathy means in clinical practice, and how they teach empathy to medical students. She found that "[r]espondents stressed the centrality of role modeling in teaching, and most used debriefing strategies, as well as both learner – and patient-centered approaches, in instructing learners about empathy" (323)[40]. Finally, in a more recent article, Branch et al. (2009) describe the success of a faculty development program shown to enhance the humanistic attributes of medical school teachers at five different medical schools. Branch and colleagues found that faculty who participated in the 18 month development program, which was designed to increase reflexive learning skills and ability and willingness to model humanistic care, were later perceived by their medical students and residents as exhibiting more humanistic values and behaviors.

The Branch and the Shapiro articles articulate not only the considerable significance placed on instructors, leaders, and practicing physicians as role models within medical education, but also how these role models influence medical students and

[40] Interestingly, Shapiro also found that clinician-teachers who perceived empathy as more of a cognitive and a behavioral experience stated that empathy can be "overwhelming" and "emotionally burdensome", and can in fact make the physician more vulnerable (327). This supports the argument presented earlier that medical students shed empathy to lessen their vulnerability to the negative impact of medical school specific stressors.

students' attributes. As noted in the introduction of this chapter, however, a majority of studies regarding the impact of role models on medical students has focused on the experiences of clinical students (third and fourth year) as well as interns and residents. There has been little to no inquiry into *if* and *how* role models during the years of preclinical medical education influence the positive attributes, such as empathy, of first and second year students. Furthermore, a number of previous studies regarding the impact of "role models" on medical students use the term role model in reference to practically any instructor, administrator, or practicing physician that has any contact with the medical student. While it is true that these individuals do model roles, they are not by definition role models. Therefore this chapter now clarifies the conceptual differences between "role models" and "models of roles". Highlighting the distinctions between the two terms provides a broader understanding of how medical students are influenced by behaviors, attitudes, and values exhibited by their superiors.

Role Models vs. Models of Roles: Conceptually Different

Lockwood (2006: 36) defines role models as ". . . individuals who provide an example of the kind of success that one may achieve, and often also provide a template of the behaviors that are needed to achieve such success". Marshall (1998) suggests that role models provide ideals for particular social roles, not all of the roles in an individual's life. In their work, Kenny, Mann, and MacLeod (2003) highlight the multi-dimensional nature of the concept of role model, and suggest that it would be quite difficult for a single doctor to serve as a role model for learners for each particular role a doctor plays in society.

These definitions and conceptualizations, specifically those provided by Lockwood and Marshall, propose that the behaviors and values exhibited by role models are perceived by learners as beneficial and valuable for success in that particular role. If the attitudes, behaviors, or values exhibited by the physician are deemed negative, hurtful, or off-putting in any way by the learner then the doctor will not serve as a role model, but rather as simply a model of a role (the role being that of a doctor). Role models demonstrate behaviors that are thought of as successful and yielding positive rewards. Models of roles, on the other hand, are individuals who hold, or have previously held, that particular social role. In their study, *The Impact of Role Models on Medical Students*, Wright, Wong and Newill (1997) found not only that exposure to role models in particular fields significantly affected students' choice of fields for residency training, but also that medical students ranked certain personality traits as highly important when selecting a role model. These traits included: attitudes displayed toward residents and students, compassion for patients and their families, and interaction with other health care workers, among others. In fact, students ranked personality above clinical skills in terms of level of importance in selecting a role model. Clearly, medical students note these humanistic personality traits as valuable assets within clinical care, want to follow physicians who exhibit these traits, and therefore desire these types of physicians to serve as their role models. It is therefore evident that not every doctor serves as a role model in every capacity, and that certain doctors do not serve as role models in any capacity. .

Noting that although most medical educators and trainers acknowledge the importance in developing caring, humanistic future doctors, ". . . this does not ensure that

all clinical teachers are proficient in modeling the values of humanistic care" (Branch et al. 2009: 117). Role models are selected because of particular traits, abilities, and actions that are deemed valuable to medical education and medical training. Within County's SOM, the first-year small group leaders served as excellent examples of role models. According to Joan Ellsworth, MD, small group leaders were chosen by the administration for their recognized teaching skill, the breadth of their clinical knowledge and experience, as well as their ability and willingness to serve as mentors to young students. These small group leaders were selected to serve as role models (and not merely models of roles), because the attributes and values they portrayed were deemed positive traits that the administration would like to see mirrored by future doctors.

Small Group Leaders as Role Models for the Class of 2011

As described in the previous chapter, within the new curriculum there is a dramatic increase in value and importance placed on the small groups. Small group leaders, in the new curriculum, were now seen as teachers, advisors, and mentors in terms of clinical knowledge, professionalism, ethical treatment of patients, and even how doctors operate outside of medical practice. This required more effort and time on the part of the small group leaders, who also served as practicing physicians within their own fields. Recognizing this, and wanting the best role models, SOM administration decided that small group leaders would be paid for their services to students[41] (Ellsworth Interview 10/08). During the time of data collection, there were 16 small group leaders whose specialties ranged from General Medicine to Pediatric Neurology. Each small

[41] Small group leaders were not paid in the traditional curriculum.

group leader was responsible for 8 to 10 students, and these groups met at least twice each week of the academic year.

During our conversations, first year students reflected on their experiences in small groups and how these leaders served as role models (and not merely as models of roles). To these students, the small group leaders serve as positive, *realistic* exemplars of the role of physician.

> I think the small group leaders have really humanized a lot of medicine. There are a lot of myths around medicine that the great doctor will solve all your ills. I feel that everyone in this business is flawed and it's important to know that. My small group leader is bitterly discontent, and I think he reinforces that we are human and it won't always be a perfect situation and you're going to find a way to deal with it. I think that's important.

> **Q:** What do you think has been the most valuable aspects of your training thus far?
> **A:** I think establishing the relationship with my small group mentor because she's given me the best sense of what it really, actually means to be a doctor.

The SOM administration wanted to establish visible and approachable role models within the new curriculum to serve as exemplars of positive doctoring through the students' preclinical years[42]. These small group leaders are considered role models, and not merely models of roles, as they were specifically chosen because they consistently exhibit and convey attitudes, behaviors, and values that the SOM administration wanted

[42] According to medical school officials, the small groups will continue to meet during the clinical years as well.

to instill and see emulated by the students as they progress through their training and into their profession practice (Dobson interview 10/08, Ellsworth interview 10/08).

Early in the academic year, I observed an initial small group meeting in which students were discussing their experiences during *Week on the Wards*[43]. Students not only spoke of events and happenings that were exciting, inspiring, and beneficial, they also reflected on instances where the behaviors they observed from physicians and other medical staff were, in the students' opinions, callous, disrespectful towards the patient, and at times even inappropriate. Interestingly, students who talked about the positive doctoring behavior they witnessed would also add that these were attributes and traits that they themselves would like to emulate. Furthermore, they reported having a more favorable experience with the doctors who acted in these ways. Even at this preliminary stage of their informal socialization and training, first year students were already identifying particular role models in terms of clinical knowledge, communication skills, and empathic connectivity. Similarly, by this time, students were disregarding the more adverse doctoring techniques and attributes as unhelpful, not beneficial, and not in the patient's best interest. I present a few examples of these observations[44] below.

> A student who had spent his *Week on the Wards* with Family Practice physicians spoke about how the doctor told him that listening and laying his hands on the patient was the most important aspect of taking a patient's history. The doctor informed the student that doing such provides a physical connection, and although it may not provide much information about the patient's condition, it establishes an immediate relationship with the patient. The

[43] As described earlier, *Week on the Wards* is the first actual week of medical training for entering students. During this week they shadow physicians all day for four days.
[44] The notes are from my observations of a first year small group on 8/10/08.

student expressed to the other students in the small group that this behavior and instruction on the importance of physician touch was simple yet quite valuable and he hoped that he would remember these "little things" when he was the doctor's age.

A student shared an experience where the surgical team she was shadowing would not take a particular patient because the team did not want that patient to die on their table as it was bad for their overall outcome measures. The students stated that he understood the logic but was very disappointed in the behavior and bureaucracy of the hospital. He expressed his frustration that statistics mattered more to these doctors than the life and well-being of a patient, stating his refusal to be "that cold".

Discussing her experience with a doctor who had to give a grave prognosis to a patient and the patient's family, the student expressed how she liked that the doctor was "honest yet comforting" with the patient and the patient's family. Although she conveyed her fear in having to engage in such tasks in the future, she noted that she will remember that particular scenario as "not only professional, but caring as well".

Sharing her experiences during Week on the Wards, one student commented on how surprised she was that the physician she was shadowing knew not only her patients' names, but the names of her patients' children and grandchildren. The articulated her joy of seeing that this level of connectivity with patients was not only possible, but also appear to foster "great, open dialogue between Doctor XX and her patients". The student further stated, "I want that. I want to be that kind of doctor. I just hope I don't get all bogged down in the bad stuff."

From these and other observations of small group sessions early in the academic year, it became evident that first year students distinguish between positive role modeling behavior and modeling of negative behavior of a particular role. Also, first year students expressed a desire to emulate the behavior and values they observed from empathic, compassionate, knowledgeable role models, while simultaneously rejecting the behaviors and values they witnessed from models of the doctor role that did not comply with what they viewed as positive doctoring techniques. Because students identified both "positive" and "negative" attributes of doctors and expressed and unwillingness to internalize the attributes they viewed as negative, I argue that this element of the informal curriculum has little to no detrimental impact on first year students' levels of clinical empathy.

This argument is strengthened by exploring students' experiences and perceptions of both OPEX and Clinical Methods. From their reflections on these clinical shadowing programs, it is clear that first and second year students acknowledge and discard behavior and attitudes exhibited by models of the doctor role that do not coincide with their beliefs and understandings of what an empathic doctor does, or how an empathic doctor interacts with patients. Therefore, whereas role models may in fact teach and reflect the humanistic aspects of patient care, other models of the doctor role, especially those that model poor patient communication skills, have minimal influence on preclinical students' notions of what it means to be a doctor. Hence, these models of the doctor role have minimal influence on preclinical student levels of clinical empathy.

Role Modeling and the Modeling of Roles in OPEX and Clinical Methods

It is important to remember that data was collected for this project when the class of 2011 was experiencing the "new" curriculum, and the class of 2010 was continuing with the traditional curriculum. However, OPEX and Clinical Methods served similar purposes for both preclinical cohorts. Both programs were designed to introduce students to basic history taking, physical examination skills, and doctor-patient communication, and allow students to familiarize themselves with the fundamental structure and events in a clinical setting. Whereas Clinical Methods was taken in the second year within the traditional curriculum, students in the new curriculum began OPEX in October of their first year. Besides the time frame when students enter these clinical shadowing programs, OPEX and Clinical Methods also differ in that in OPEX students enter a Primary Care clinic in Family Medicine, Internal Medicine, or Pediatrics, whereas this was not always the case with Clinical Methods. As discussed earlier, these specialties were chosen specifically because doctors in these specialties have higher levels of patient contact, communication with patients and patients' families, and be more involved in their patients' lives.

OPEX

During the interviews, first year students openly expressed that OPEX had a significant impact on their learning, referencing specifically the opportunities to practice clinical skills and learn from the modeling of doctor-patient communication and relations.

> **Q:** Any significant events this year that have really had an influence on you?
>
> **A:** I think overall, the OPEX clinic thing. It's really put a lot of things in perspective. Um,

you kind of get all bogged down in like the rigor of class work, lectures, exams, all this information getting thrown at you and the clinic really puts it into perspective like the whole point of it all, the attitude you have towards it. My preceptor is really great. She knows her stuff and she's got a really dry sense of humor that she uses towards her patients. She's got the attitude that I'll probably adopt as a doctor.

So the OPEX, the bi-monthly Out-Patient EXperience, that's really important because it's like, for me, I haven't done much shadowing in the past so I haven't seen that much how physicians and patients interact. So seeing how my preceptor interacts with the patients is really interesting. She's really clear with her patients. She tells them exactly what's what.

Q: Do you feel that you have been influenced in any way by your OPEX preceptor?
A: Yea, but it was just reaffirming ways I knew I wanted to be or didn't want to be.

Q: Do you feel like any experience has had a real impact on you this year?
A: My OPEX. I love my OPEX person, she's so much fun and I'm really glad I have her as a role model.

In an interview with Robert Elliot, MD, he frequently stated that role modeling is an essential ingredient in the new curriculum, and this is evident from first year students' perceptions of OPEX. However, students were also very clear regarding behavior they observed from models of the doctor role that they felt was not positive doctoring or attitudes that were not conducive to productive doctor-patient interactions. For instance, one student said,

> But something I've noticed that she does that I don't really like is that she won't necessarily listen to everything the patient says. She'll kind of have her own agenda and she'll kind of run through it. I don't know, she cuts the patients off a lot, um, and like I said, she is a little rough with them sometimes. And I hope I don't pick that up.

> Sometimes the attending would just go in and do their little exam on the patient and *then*[45] go talk to the family, you know, not even acknowledge that the family was in the room. I am sure there were superiority issues with the patient population at Grady and the doctors may think they are better than the patients.

Conversely, students also offered actions and values exhibited by the role models of OPEX that they deemed appropriate for positive doctor-patient relations, and attributes they felt were necessary for being a good doctor.

> . . . but he's very, he wants to make sure he does pay attention to people's need to feel better. He's always telling me to yea, go and check all the things you need to check but don't forget to check what the patient wants you to check even if it's way out there, even if you know it doesn't have anything to do with it, or anything to be worried about. He always like sits down and he knows all his patients really well and that's really attractive to me.

> I've had a really good clinic experience. Clinic is awesome. People are there to teach. It's a bunch of residents and then we have two preceptors who if you have a really complicated patient or some other types of patients you go see them. One of the preceptors, Dr. XX, I think he's fantastic. He's very, very intelligent and has all these great jokes, but at the same time he'll turn around and seriously talk about transference and counter-transference and

[45] The word is italicized to reflect emphasis in the subject's voice.

patients' emotions. He interacts with the patients really well but never acts like he knows everything. He just seems really natural at what he does.

Q: Are there behaviors exhibited by your preceptor that you want to emulate?
A: He's always up to date on research, so that's a good lesson because it can tell you what the current standards are and what could be the best approach to your patient. And he seems to really make time for people, and not just his patients. A lot of time I feel that doctors don't talk very much with patients, you know within two minutes the doctor will turn to the patient and be like "uh what?". I just don't think a lot of doctors take the time to listen. But he will take time with each patient. And I like that he's not a know-it-all, you know. He's been at this a long time and he obviously knows a lot, but he doesn't flaunt that. He also, from what I can see, has strong connections with his family, and that is something I admire.

In the new curriculum, OPEX not only introduces students to the fundamentals of history taking and physical exams, it also provides them with a number of opportunities to witness how doctors interact and connect with patients through the modeled behavior of their preceptors and other medical care staff. Previous literature suggests that it is through this aspect of the informal curriculum, the modeling of behaviors, values, and attitudes, that medical students internalize negative attributes and imitate poor communication skills, which in turn is argued to lead to a decrease in students' levels of empathy. However, from the students' statements above it would appear that first year students not only decipher between positive and negative doctoring attributes, but also refuse to accept, imitate, or reinforce behaviors, attitudes, or values that they deem detrimental to doctor-patient communication. It is therefore unlikely that modeled

behavior that is counter-intuitive to empathic and compassionate doctoring, has a significant impact first year students levels of empathy.

Clinical Methods

Although medical school administration of County SOM expressed the strong emphasis on role modeling in the new curriculum, it is apparent that modeled behavior is a key feature within the Clinical Methods course in the tradition second year curriculum as well. This is evident in how the second year students perceived their clinical shadowing programs, and their preceptors.

> **Q:** What are your thoughts regarding Clinical Methods?
>
> **A:** It's been awesome. I love it!
>
> **Q:** What are your thoughts about your Preceptor?
>
> **A:** The preceptors all in all, they pretty much know where we are and that we're 2nd years. They've been encouraging us more than anything else and just like helping us.

> But I think a lot of it, of what you internalize comes from your interactions with the patients and the other stuff is what you learn and your facts, at least for me at this point. I mean, I haven't had much diagnosis experience. I mean, all I really know about now is how to talk with the patient and how to start to form those relationships. So in terms of behavior from physicians that I may emulate later, those types of behaviors, the ones that deal with interacting with the patient are the ones I pay the most attention to.

> I didn't see so much of the sitting and just chatting with patients about important history stuff and getting comfortable with the patient so much with my preceptor at the other

hospital, but she seemed more into the hard-core informational stuff. She was a bit more of a hard-nosed doc, but I still learned a lot from her.

The preceptors of Clinical Methods, and other medical staff at the hospitals and clinics, served as role models and models of the doctor role for second year students in terms of how they interact and connect with patients, as well as how they take a history and conduct physical exams. Yet the second year students, like the first year students, explicitly distinguish between the behaviors and values modeled by preceptors and other medical staff they feel are representative of positive doctor-patient relations from those behaviors they feel represent poor, un-empathic doctoring techniques. Furthermore, much like the first year students, second year students openly expressed that these negative behaviors are attributes they do not want to internalize.

Q: What about this year has had significant impact on you?

A: Some of the preceptors for the Clinical Methods class have been really good.

Q: How have they been good?

A: Just in terms of patient interactions. I mean the one that I had last semester was great. He was just very into patients, very sincere and yet at the same time everyone around him looked up to him and loved him and respected him.

I've seen a lot of behaviors I don't want to emulate. Like, they'll interrupt a patient in the middle of what they're saying. But there was this one doctor in the ER and he had no pretentious air about him, which is something I hate about doctors. The only way you're going to get through to a patient is not being pretentious and putting yourself on their level, and a lot of them are pretentious. But he was awesome, very down to earth. When he talks

to me he doesn't talk down to me or make me feel down and he's really good with patients.

Q: How as your preceptor with patients?

A: He was really gentle, that's the best way to describe him. He was really gentle and kind and pretty respectful too. Even outside the room, talking about the patient, he was cautious that only certain people were around and that everyone was being respectful.

Q: What were some of the behaviors you observed that you thought were negative?

A: Just talking badly about patients when they do something stupid. Um, kind of responding very shortly to patients when they've been in the ER for like 10 hours. Seeming like they were more interested in the medicine and not the patient as a person.

I had a really good mentor this semester for Clinical Methods. Um, she was just awesome and talked to us a lot about how you talk to patients and how you talk to their families. Um, she was amazing with using words with the patient and the patients' families that they could understand. She really showed them that she cared, which a lot of other doctors that I've seen don't really do. She was really great and made a point to show us that it's important and that she does that and that we should do it too.

One second year student shared with me an intimate interaction he had with a patient in his mid 50's. The student had taken a history and physical and had decided that he was "just going to let the patient talk". Without prompting, the patient began divulging personal information to the student about how he was a banker on Wall Street, and that at the age of 35, after landing a lucrative account, he began smoking crack.

> And then he starts telling me that when he was 35 he made this great deal and someone offered him some crack so he takes it and he's been doing crack for the last 25 years. He says he's not addicted, he just does it once a day and he goes on for a half an hour about how he smokes crack. And so, I'm like, you know, "Did you tell your doctor this?" And he's like, "No, I've never told anyone this", "I've never felt this comfortable before", "I've never felt so comfortable telling anyone about this before". So I was like, wow, I feel really cool that I was able to achieve this comfort level with this patient, but then its Clinical Methods, what do I do? Do I tell the doctor? What do I say? So I told my preceptor and immediately he was like, "Oh, I bet he has AIDS" and jumping to all these conclusions and making all these judgments on the guy because of what I said. He was kind of treating the patient like he was an idiot really, based on the fact that he smoked crack. I mean, I had gotten the whole patient's story and I was like, am I too naïve? I mean, maybe this patient does have AIDS and all sorts of other things, but at the same time, you know, I feel like some doctors you see are sort of callous. They've seen so much of the same shit everyday that they just don't care about what the patients have to say. You know, they hear one thing and they draw all sorts of conclusions.

This story begins as a reflection of the student's enjoyment and pleasure in taking the time to talk with a patient, and in doing so being able to earn that patient's trust. However, the reflection ends with the student feeling frustrated by the quick-to-judge attitude reflected by his preceptor. Furthermore, the student then suggests that this negative perception of particular patients is expressed by a number of doctors, almost seeming frustrated by members of his own future profession. This preceptor can be seen as a model of the doctor role and not as a role model, as the preceptor exhibited behaviors that were deemed unsuccessful and negative by the student. Yet, this notion of doctors

being "hardened" by what they are confronted with everyday was also noted by another second year student regarding her experiences in Clinical Methods.

> I've gotten a lot of positive feedback from the few patients I've talked to on my interpersonal skills. Like they'll say, "You're the first doctor that has really listened to me", and I'm like "Well, I'm not a doctor that's probably why I listened to you".
>
> **Q:** What do you mean by that?
>
> **A:** I mean, to be real the stereotype is that doctors (pause), you've got to get hardened to deal with all the tough stuff you have to deal with all day. It is really hard, you know, I go in for an hour and I see this woman who is really sick and probably not going to get any better, and that sucks you know. You know, that's really hard. I don't know if the hardening is necessary because you also see a lot of doctors that are not like that. They come in and they smile and talk to you and walk out and be ok, and I think that's what needs to happen. You know, make the patents feel like you've talked to them and then walk out and be ok. I don't think that they prepare us for that so much. I think the big thing now is not to be hardened and to stray away from what we hear from previous generations, like the doctor paternalism things.

The students acknowledge the hardships the members of their future profession face; yet, many students express a strict reluctance to accept that they will internalize or mimic the "poor" doctoring skills exhibited by models of the doctor role. Many of the second year students appear to understand that when they are practicing they will more than likely have difficult patients, patients who may withhold information, and patients who will die in their care, as well as be confronted with other issues they witness their preceptors face during Clinical Methods. Yet these second year students, much like the

first year students, express a strong desire to not succumb to poor patient communication, negative attitudes towards patients, or the hardening of their willingness to care. Rather, they continue to express a desire to emulate behaviors and attitudes exhibited by their role models, those doctors who are empathic, communicative and compassionate.

Perhaps this reluctance conveyed by the preclinical students is a naiveté or even a sense of idealism regarding doctor-patient relations that they still carry with them from when they entered medical school. Given that the research that suggests that the informal curriculum has a significant impact on students' positive attributes has primarily utilized samples composed solely of third and fourth year students, perhaps the veil of idealism that may be evident in the preclinical years is lifted in the clinical years. Perhaps this defiance arises because second and first year students are interacting with "live" patients so infrequently (one afternoon every week, and one afternoon every other week respectively), and these students are therefore not being "hardened" by the perpetual difficulties and stressors suffered by clinical students, residents, and practicing physicians. Regardless, even though first and second students bear witness to negative behaviors, attitudes, and values from models of roles in clinical settings they refuse to internalize them, imitate them, or even accept them as proper doctoring techniques. Therefore, I argue that because of this ability to distinguish and unwillingness to internalize, this element of the informal curriculum (in regards to OPEX and Clinical Methods) has little to no effect on first and second year students' levels of clinical empathy.

Conclusion

It would appear that first and second year students, during their interactions with practicing physicians and clinician-teachers (through OPEX, Clinical Methods, and small groups), recognize but are not heavily affected by the negative behaviors exhibited by models of the doctor role. It is important to note, however, students expressed a strong desire to emulate the empathic and compassionate care exhibited by role models. Given that the quantitative portion of this study found that preclinical students decreased in clinical empathy, future research should explore the actual level of influence role models have on students' levels of empathy as compared to elements of the explicit curriculum and the stressors of medical training.

Preclinical students address what they term as "good" and "bad" elements of doctor-patient communication and interactions and, in turn, express their desire to assimilate the positive traits and behaviors they observed. Preclinical students even communicated the aspiration to not be influenced by noxious elements of medical care and succumb to the practice of poor patient communication but rather rise above these damaging mechanisms to continue to be an empathic and humanistic physician. It is through these statements and expressions that I argue that whereas role modeling and the informal curriculum may have significant influence on clinical students, there is little to no impact on preclinical medical students' levels of empathy.

CHAPTER 7

THE "KNOWLEDGE GAP" AND THE HIDDEN CURRICULUM

Introduction

Previous chapters highlighted the fact that preclinical students' devotion to attaining medical knowledge had detrimental effects on their personal attributes and personal relationships. Moreover, County SOM implicitly "taught" students what medical knowledge was more important to gain than humanistic knowledge through the school's designation of course hours and examination of particular subject matter. In this chapter, I attempt to show how the stressors of medical school act in concert with the explicit curriculum to produce barriers between medical students and individuals not associated with medicine.

I argue that medical education creates a "knowledge gap" between medical students and those individuals outside of the realm of medicine. Moreover, I suggest that this knowledge gap is exacerbated the abundant amount of information that preclinical students are required to maintain, the pressure to perform well academically, and the amount of effort and time these students invest to attain medical knowledge. In turn, this medical knowledge gap creates difficulties for preclinical students to relate and connect with lay persons and has the potential to breed mistrust and issues involving superiority between future doctors and patients. Furthermore, aspects of the hidden curriculum in medical education, specifically the "teaching" that medical knowledge is power and that power is accompanied by authority, has the potential to exacerbate the negative effects of the knowledge gap. I propose that these by-products of the knowledge gap may lead, in

part, to the detriment of students' clinical empathy due to a corrosion of their ability to take others' perspectives.

Given the intricacies of my argument, I will first outline the presence of a knowledge gap between medical students and lay people, and how this gap is amplified by particular medical school stressors. I will then offer a brief summary of the hidden curriculum in general, and in medical education specifically, paying special attention to how it appears to be "teaching" preclinical students about the power of medical knowledge. Additionally, I will show how this aspect of the hidden curriculum further accentuates the distance between preclinical students and lay people created by the knowledge gap. I conclude by illustrating how this distance may have detrimental effects on preclinical students' levels of empathy. This chapter not only highlights the existence and deleterious effects of a medical knowledge gap, but also explores the hidden curriculum within *preclinical* education, which has often been overlooked by previous research. Examining the socialization processes within the explicit, implicit, and hidden curriculums of preclinical education provides a broader understanding of first and second year students' experiences within their preliminary training, as well as the effects these processes can have on students' personal attributes, such as empathy.

The Knowledge Gap and Its Effects

All professions require training to attain the professional role. Similarly, when individuals gain knowledge through the training for a profession, a figurative "gap" is created between those who do, and do not, possess that knowledge. Medical training creates a knowledge gap between doctors and patients in terms of medical knowledge,

and the gap between these two groups begins to grow during the pre-clinical years of training. Although the knowledge gap involves differences in medical expertise, the gap is heightened by the sheer amount of material, pressure to perform, and the level of commitment medical students make towards attaining this knowledge.

Difficulty Connecting with Those Outside of the Realm of Medicine

During my interviews with them, preclinical students expressed that before medical school they had a number of friends and companions that studied various disciplines and had different life-goals than their own. As they have become more engaged and involved in their training, however, preclinical students appear to have difficulty interacting, conversing, and connecting with individuals outside of medical school. These difficulties seem to be rooted in the students' failure to involve themselves in conversations about topics other than what they are learning and aspects of their medical knowledge.

> **Q:** Do you find it hard to talk to people who aren't in medical school?
>
> **A:** Um, I don't know what to say to people. You know, people ask me like "Hey, what's going on?" and I'm like "Hey, I can tell you about the kidney". (M2)

> You know, you're around this stuff all the time, it's what you talk about when you're in class, out of class, on the weekends, you make jokes about it. So, that sort of thing puts up a wall between you and the people in your life who aren't in medicine. (M1)

> Medical school just keeps you away. I mean, you just stop doing stuff with other people and engage with other people far less often and then it feels kind of funny when you do, especially with people outside of medical school. (M2)

> I do kind of forget how to interact with people who are not in medical school, but I can still do it. I think it's harder because I am focused on what I'm doing. (M1)

> I've noticed that when I interact with people like from my old life or whatever, I've become way more pedantic and I like keep telling people stupid facts that they don't want to know. (M1)

I suggest that these difficulties conversing and connecting with those outside of medical school are direct expression of the knowledge gap that is magnified by the laborious nature of medical training. Because preclinical students are so engrossed in gaining medical knowledge they have little time or effort for those who are not doing the same. These negative effects of medical knowledge gap, however, can be further amplified by elements of the hidden curriculum within medical education which instructs students that the knowledge they are gaining is of more value that the knowledge possessed by those outside of the realm medicine.

The Hidden Curriculum

At the most fundamental level, the hidden curriculum represents an undercurrent of norms, values, and regulations within the training process that students are to assume and embrace in order to function effectively in a social role (Wren 1999). Apple (1979) suggests that students' internalization of these rules, codes, and values creates and

reinforces boundaries of legitimacy of the institution that the students will come to represent in their professional role. The concept of the hidden curriculum was first raised by Jackson (1968) in his work, *Life in Classrooms*. Since then, the term has often been utilized in research on primary schooling to better understand how children are implicitly socialized. Furthermore, research on the hidden curriculum has also addressed how education processes perpetuate social inequalities, dominance of particular social groups, and individual disempowerment (Giroux 1985). Elements of the hidden curriculum in medical training, I argue, emphasize to students that doctors enjoy an authority over patients and this authority germinates from the power of medical knowledge.

An Element of the Hidden Curriculum: "Medical Knowledge is Power"

"Indeed, a great deal of what is taught – and most of what is learned – in medical school takes place not within formal course offerings but within medicine's 'hidden curriculum'" (Hafferty 1998: 403). Although it is argued that the hidden curriculum within medical education is reflected within both the explicit and implicit curriculums (Thiedke et al. 2004; Adler, Hughes, and Scott 2006), Hafferty (1998: 404) highlights each separate piece of this socialization puzzle:

> Although concept labels and core definitions can vary by author, the notion of a multidimensional learning environment embraces at least three interrelated spheres of influence: 1.) the stated, intended, and formally offered and endorsed curriculum (e.g., the "this is what we do" curriculum); 2.) an unscripted, predominantly ad hoc, and highly interpersonal form of teaching and learning that takes place among and between faculty and students (the informal curriculum); and 3.) a set of influences that function at the level of

organizational structure and culture (the hidden curriculum)

Much like primary education, professional education attempts to reproduce hierarchies, degrees of marginalization, ways of thinking, and other values of that particular institution (Gair and Mullins 2001). Aspects of the hidden curriculum are found in customs, rituals, and everyday experiences within medical training that replicate ideologies regarding inequality and stratified relationships, most notably being that between doctors and patients (Hafferty and Franks 1994). Parsons (1951) argued that physicians serve as agents of social control, empowered to regulate what behavior is deemed normal (healthy) or deviant (sick). Similarly, Freidson (1970) suggested that physicians dominate interactions with patients to maintain their social status. In this sense, the hidden curriculum within medical education "teaches" students about the authority of the doctor over the patient. These teachings create a continuum for which students are to see themselves on one end and lay persons at the other. "Medical training is not just learning about become a physician, it involves learning how to 'cease' to be a lay person" (Hafferty and Franks 1994). This element of the hidden curriculum instructs medical students that they are no longer lay people—they are emerging physicians, gaining knowledge and information that grants them a degree of power in their relations with others. Whereas some research has suggested that medical education has the potential to propagate class, race, and gender inequalities (Pendleton and Bochner 1980; Ahmad, Baker, and Kernohan1990), I suggest that an aspect of the hidden curriculum emphasizes to students the differences between them and lay persons based primarily on the knowledge students are gaining, and that this medical knowledge is a means of wielding power in interactions with patients and others outside of the realm of medicine.

Frequently neglected by previous research, this chapter highlights the influential role the hidden curriculum has in *preclinical* medical education, and on students' levels of empathy.

Knowledge as Power in the Doctor-Patient Relationship

Doctors claim the knowledge and mastery of the intricacies of the human body, of particular medical technologies and procedures, as well as the diagnosis and treatment of disease (Fainzang 2002). This knowledge is gained through their years in medical school, and is deemed socially valuable as it has the potential to hinder or enhance individuals' mental and physical health (Ludmerer 1985). Wear and Castellani (2000) argue that the current culture of medicine that is reflected in the curriculum touts science, scientific methods, and the knowledge gleaned from medical education as the true "knowledge", much more valuable than the patient's knowledge. "Moreover, the existing medical curriculum, aligned as it is almost exclusively with science and its methods, results in doctors, not patients, who are the real 'knowers'" (606). The power of medical knowledge and the authority that it brings is sewn in the hidden curriculum so that students learn that the knowledge they are gaining is more valuable than that of the patients and others outside of the realm of medicine. Wear and Castellani further state that medical training breeds a dismissive attitude among students towards patients. Although researchers attest that there has been a shift in the power-dynamic between doctors and patients because of the rise of managed care, the consumer movement, and other patient empowering policies and developments (Bury 2004; Kronenfeld 2001), the culture of medicine continues to reflect the notion that medical knowledge is rational

science and clinical reasoning that form the core of understanding illness and disease (Wear and Castellani 2000). The value and importance of medical knowledge over other forms of knowledge such as emotional, and spiritual, is also evident in preclinical education, as conveyed by a second year students' account of what she was being taught during her medical training.

> I feel that a lot of doctors are all about the science and don't take the spiritual or emotional aspects seriously because they worship medicine and they thing that taking the scientific approach to everything is the only way things can be addressed. When you learn this much information, and I've started to feel this a little bit, when you learn this much information, the answers, they think they have the answers to these things so it's easy to turn to that.

I argue that the power of medical knowledge and the authority it brings exacerbates the negative effects of distancing between students and lay persons created by the knowledge gap. It is evident from the students' statements that the knowledge gap is accentuated by the laborious nature of medical training, and therefore students face difficulties in connecting with others outside of medicine. Yet, when the value of the knowledge is frequently touted and praised then the gap becomes a barrier between those who possess the power the knowledge brings and those who do not. I suggest that this distance between medical students and lay persons, intensified by the hidden curriculum, may damage preclinical students' ability and willingness to take the perspective of others and therefore hinder their levels of clinical empathy. I now present evidence of how this may be occurring at County SOM.

Evidence of the Hidden Curriculum at County SOM

The White Coat Ceremony

Elements of the hidden curriculum in medical education can sometimes be found in rituals and ceremonies. Here, the lessons of the hidden curriculum can be completely covert as well as "hiding in plain sight" (Gair and Mullins 2001: 21). The *White Coat Ceremony* is a rite of passage for first year students in which they are draped with the quintessential symbol of being doctor. The white coat has been described as a magical cloak, protecting the medical student and doctor from the suffering of their patients (Druss 1998), because it is a symbol of science and technology and a reflection of life and purity (Blumhagen 1979). For the students, the ceremony is meant to emphasize the adoption of the value of altruistic care and their undertaking the mantle of a compassionate healer (Branch 1998). Wear (1998), however, suggest that the white coat reflects aspects of the hidden curriculum that confers its owner the power, authority, elitism, and the dominance of science that it symbolizes. These issues were apparent within the white coat ceremony observed at County[46].

The *White Coat Ceremony* at County SOM was held shortly after first year students begun their medical training[47]. At the commencement, students entered the hall as classical music played in the background. A number of guests, which appeared to be family and friends, had already gathered. The pageantry was similar to that of a graduation. A high ranking County SOM administrator told the audience "You can't know everything they've done, there's not enough time to tell you". He continued to

[46] I observed a video recording of the Class of 2012's *White Coat Ceremony*, not the ceremony for the Class of 2011. I received confirmation from County SOM administration that the two ceremonies were not significantly different.

[47] County SOM students partake in the *White Coat Ceremony* about three months after they begin their training.

stress the amount of information, the overload of work, and the frantic pace of learning that the students are undertaking. In his reference to the *Week on the Wards* he stated, "We discuss this week among students and faculty as the last time they would view the world as a lay person", and that students assumed a "new role" during that particular week. Almost immediately after it began, the ceremony elevated the value of medical knowledge and the necessity of the knowledge gap for medical students. Here the audience is told that the amount of training students are experiencing could not even be explained to them because it is so vast. Similarly, upon embarking on this training (at *Week on the Wards*) students transitioned from "lay person" to a "new role", one that would possess the valued medical knowledge.

During the ceremony, audience members and a professional photographer took pictures as students were called to receive and assume their white coat. Society leaders assisted the students with their coats, and when all of the students had been draped in their white coats, the audience gave them a standing ovation. Two high ranking SOM administrators then led the students in a recitation of the Hippocratic Oath. The reciting of the Hippocratic Oath during the ceremony is a key example of the hidden curriculum accentuating the knowledge gap for certain reasons: a.) before beginning the Oath one of the SOM administrators referred to the students, now in their white coats, as "My future colleagues…", and b.) those in the audience that were physicians were asked to stand and join in the recitation. These two events demarcate those who are in medicine from those who are not, and allowed those who are (including the newly "coated" first year students) to participate in a ritual that is meant only for those who have gained or are gaining

medical knowledge. Lay persons are left sitting, perhaps to admire the accomplishments of the students and physicians.

During my interviews with first year students, I asked about their thoughts and perspectives on the ceremony.

> **Q:** What are your thoughts on the White Coat Ceremony?
>
> **A:** There was sort of this sanctity to it and specialness to it because our parents were there. It was sort of like graduation, and we're putting on the symbol of being a doctor. So there's this hint of sanctity and professionalism to it.

> I feel like a lot of doctors really, really like doctors, and they like being doctors, and really like other doctors, and the whole thing gets pretty obnoxious after a while. I think we talked earlier on about the White Coat Ceremony and it was sort of a pat ourselves on the back. We seemed to be elevating it to this grand stature, but at that point we hadn't done anything and we probably won't be doing anything significant or that meaningful for the next how many years. You start to get a different feel for doctors. And you see it in your class too. I mean some walk around like they know what's going on, and maybe they do but they probably don't.

Although perhaps meant to explain to students the responsibilities of patient care and value in altruistic, empathic medicine, it is clear that the white coat ceremony is riddled with "teachings" of the authority and power of medical knowledge and exhibits to students the differences and between them and lay persons.

Instilling a Level of Superiority

The *White Coat Ceremony* is merely one example of the "teachings" of the hidden curriculum in preclinical medical education. Preclinical students, especially those in their first year, recognized and acknowledged that they were being taught about the power of medical knowledge and the level of authority that accompanies that power.

> …there are little things that instructors would say here and there that encourage you to remember the greatness of what you're doing or how serious it is that you can take someone's life in your hands. And those things are true I guess but it breeds a sense of greatness that's just kind of gross you know. I mean I guess it's true but there's kids that want to be surgeons who think they are gonna be saving lives all the time or thing they're gonna be play God. It's just sort of sickening, and a huge turn off in medicine in general. But you're around that all the time and the fact of the matter is that you do have people's lives in your hands so to not feel that way at all is difficult. (M1)

> And also, during Orientation, and I'm not sure you noticed this, but like not all the time but often, they like engrain in you this sense of superiority. As a physician you are somehow morally and intellectually superior to other people. (M1)

> I do think that med school, they really make you feel that, that this and that are *so*[48] important. I think they really build us up you know. We're the smartest people, but we're really not. You want us to stay humble, then don't constantly build us up. (M2)

[48] The word is italicized to indicate the emphasis used by the subject during the interview.

Preclinical students sense the teachings of medical authority nestled within their education. Moreover, preclinical students appear to suffer from these teachings. Students may acknowledge that the administration is somehow suggesting that they (students) are superior, smarter, and of more social worth than those outside of medicine, yet, as is clear in the statements below, preclinical students struggle to not internalize these beliefs. Preclinical students begin to judge, disapprove of, and even harbor mistrust for those individuals (including patients) that do not possess the medical knowledge.

> Like I feel even with my best friends, we would go out to dinner and the things they would have to talk about I was absolutely not interested in and the things I would have to talk about I felt that they wouldn't even understand on an academic level and on an experience level, you know. That has been a challenge over time and I'm sure it will continue to be that way, but I'm trying really hard to not let that happen. (M1)

> It's this weird attitude. Like, I never (pause), when I was in college, I never met anybody and thought about how much education they'd have. I liked and disliked people based on how they treated me and if they were fun to be with, I didn't care about their background or what they wanted to do in life. And now when I meet people I find myself judging them and it's very disturbing, this whole judgmental attitude. I mean you're around these people all the time and we build each other up or build ourselves up because of all of our education and I don't like the attitude. So it's like this pompous attitude where subconsciously you think you're better than other people because you're going through all this, and I don't like that, but I can't deny that I feel it. (M2)

> I find myself disapproving of things or others' choices that don't involved helping people. Not just medicine, you know, anything that involves encouraging the well-being of people or of the earth. And I've felt this way before, you know, my friends in their finance jobs like I devalue them. Or my friends that went to XXX or my friends from high school that are not as intellectual, you know, at times I devalue them. (M1)

> You know, especially when I am with my OPEX, it's the nature that a lot of these patients are poorly educated and don't have the medical authority that a doctor has and so that makes the whole relationships automatically a little (pause), because the doctor has a lot of knowledge and the patients don't have a lot of knowledge. When the patient does have (pause), maybe he or she doesn't understand in the broader scope of things. Anyways, being more skeptical of the patient is something I've started to develop. (M1)

This notion of the knowledge gap spawning mistrust and hostility between groups that possess the knowledge and those that do not, mirrors Wilkinson's (2005) discussion of how the income gap leads to poorer social relations. He argues that the widening of the income gap leads to a decrease in the sense of common identity between the groups. This, in turn, leads to more dominance over the subordinate group, more downward discrimination, and a reinforcement of authoritarian values. Furthermore, according to Wilkinson, this distancing between groups leads to a general lack of concern regarding the out-group, and an increase in hostility and mistrust between groups, which breeds poorer social relations.

My argument regarding the potential impact of the knowledge gap on doctor-patient relations parallels Wilkinson's theory of the impact of the income gap on social relations. The knowledge gap, which is accentuated by the arduous demands of medical

training, creates difficulties for preclinical students to interact with those outside of the realm of medicine. When widened by the social value placed on medical knowledge (as taught within the hidden curriculum), the knowledge gap fosters qualities of poor social relations between future doctors and lay persons.

Conclusion

It is clear that students are voicing difficulties conversing and relating to individuals outside of medicine due to the knowledge gap, and that these difficulties are heightened by the arduous nature and immense demands of medical training. Preclinical students are also expressing a level of mistrust and disapproval of those outside of medicine who do not possess this medical knowledge. Furthermore, it is evident that elements of the hidden curriculum, namely that there is an authority and superiority that accompanies the power of medical knowledge, is accentuating the distance produced by the knowledge gap. Because the experience of empathy is rooted in the ability and willingness to take the perspective of another, and perspective taking stems from the aptitude to relate and connect with others, it can be assumed that the knowledge gap and the effects of the hidden curriculum on that gap could be depressing preclinical students' levels of clinical empathy.

CHAPTER 8

LEARNING TO CARE?

Introduction

It is clear that preclinical medical students truly care to learn. But do these students learn to care? This project not only examined if first and second year medical students' levels of clinical and general empathy changed during one academic year, but also explored mechanisms behind those possible changes, such as the stressors of medical training, and the explicit, implicit, and hidden aspects of medical education and the curriculum. For eleven months I observed M1 and M2 courses, labs, and small groups, interviewed a number of students and faculty members, and administered over 700 surveys. This concluding chapter will first reiterate the research questions and hypotheses posed earlier, as well as reintroduce the conclusions and implications from each preceding chapter. I will then examine the recommendations offered by previous research and present my own suggestions for the enhancement of empathy among preclinical medical students. Finally, I will highlight possible limitations of my own research and propose outlines for future projects in this area.

Research Questions

- Are there changes in students' reports of clinical empathy and/or general empathy during the preclinical years of medical school?
- Are there differences among and/or between first and second year students regarding their reports of clinical empathy and/or general empathy?

- What stressors associated with medical school do first and second year students find most harmful?
- How do the stressors associated with medical school affect preclinical students' levels of clinical and general empathy?
- How does first and second year students' mental health affect their levels of empathy?
- Is there a relationship between students' personality and their levels of empathy?
- How do elements of the explicit, implicit, and/or hidden curriculums within medical education affect first and second year students' levels of empathy?

Hypotheses

- First and second year students' reports of empathy (both clinical and general) will decline from Time 1 to Time 2.
- Reports of the decline in empathy (both clinical and general) will vary between first and second year students, in that second year students will report a larger decline than first year students in both measures of empathy.
- First and Second year students will report similar stressors as harmful and these will be more academic-related stressors (rather than clinical-related stressors offered by third year students).
- The stressors associated with medical school will be a significant predictor of the change in students' empathy for both first and second year students.

- Positive mental health will be associated with lower levels of empathy at Time 1 and Time 2, and for both grade cohorts. Furthermore, mental health will serve as a predictor of the change in empathy for either grade cohorts.
- Students who are more extroverted will report higher levels of empathy at Time 1 and Time 2, and for both grade cohorts. Personality measures, however, will not serve as a predictor of the change in empathy for either grade cohorts.
- First and second year students will report that elements of their formal education have an impact on their levels of empathy. First year students' reports, however, will be much stronger than second year students' reports.
- First and second year students will speak of an implicit training exhibited by the actions, behaviors of medical school instructors, administration, fellow students, practicing physicians, and that this informal education has had some impact on their levels of empathy.
- First and second year students will report "critical events" they have experienced that had a significant impact on how they view connecting with patients.
- First and second year students will report that empathy is an important element in patient care, but that aspects of the current culture of medicine encountered within their training hinder the cultivation and practice of empathic behavior.
- Elements of the hidden curriculum will be evident within the first two years of medical education

Diagnoses

Chapter 3 – The "Hamburger Machine"

In Chapter 3 it was shown that clinical empathy declined among first and second year students. Surprisingly, the negative impact of medical school stressors, however, did not predict this decline. It was shown, however, that an increase in empathy actually predicted the stressors having more of a negative impact on the students' lives. Interestingly, a large number of significant positive correlations were found between the negative impact of particular stressors and levels of empathy. This indicates that students reporting high levels of empathy are also reporting having a harder time with certain medical school stressors. In other words, empathy was higher over the year among those students who reported more stressors (i.e., that they had more stressors that had a negative impact on them). The quantity of these positive correlations, however, decreased not only from Time 1 to Time 2 for each grade cohort separately, but over the span of the three years measured as well (e.g. M3 < M2 < M1). These findings suggest that students are possibly adapting to the stressors of their medical training. Given that the most frequently experienced stressors do not fluctuate over the three years of medical training, it is possible that students are learning to cope with these chronic stressors in particular ways. Therefore, I argue that medical school stress is not directly causing a loss of empathy among preclinical medical students as suggested by previous research. Rather, preclinical medical students are "shedding" empathy so as to lower their levels of vulnerability to other stressors and to better adapt to the arduous nature of their medical training by focusing on what needs to be known.

Chapter 4 – The "Shedding" of Empathy

Following the arguments presented in Chapter 3, this chapter explored preclinical students' personal accounts of their experiences with the stressors of medical school, and it further investigated the notion of whether students were "shedding" empathy in order to decrease their levels of vulnerability and sensitivity. I suggested that in their quest to be productive, preclinical medical students may have found that being empathic not only made them more sensitive to the stressors of medical training, but also rendered them less able to cope with the stressors' negative impact. Furthermore, I posited that preclinical medical students shed empathy in order to manage medical school stressors, preserve their positive self-image, and achieve academic success. A majority of previous literature proposes that medical students are passive beings that are stripped of their empathy by aspects of medical training. My argument in Chapter 4, however, depicts (though students' personal accounts) students as active, adapting individuals, who choose to shed empathy to effectively acclimate to the arduous demands of their environment.

Chapter 5 – The Explicit Curriculum: Assessment Drives Learning

Chapter 5 investigated the role of the explicit curriculum of medical education, paying special attention to the lack of course hours devoted to the discussion and practice of the psycho-social aspects of patient care, and the absence of formal testing in patient communication and connectivity skills. It was noted that the "new curriculum" at County SOM spent more time addressing the social aspects of care as compared to the traditional curriculum, yet preclinical first year students during the year of 2007-2008 were not evaluated on the psycho-social aspects of patient care. Furthermore, the hours of both the

M1 and M2 curricula devoted to the teaching and discussion of clinical empathy, and other patient communication skills, declined over the course of the academic year. I argue that these inadequacies not only led to a lack of practice and discussion of the art of clinical empathy, but also expressed to students what is and what is not truly valued by the institution of medicine. In turn, this lack of testing and decline in curriculum hours served as mechanisms that exacerbated declines in clinical empathy among preclinical students.

Chapter 6 – The Implicit Curriculum: Role Models & Models of Roles

Previous literature suggests medical students experience a loss of positive attributes because of poor clinical behavior modeled by practicing physicians and other medical staff. Chapter 6 explored the impact doctors', faculty's, other students' actions, values, and perceptions on preclinical students' levels of empathy, and examined the distinction between "Role Models" and "Models of Roles". Preclinical students addressed what they term as "good" and "bad" elements of doctor-patient communication and interactions, and expressed their desire to internalize the positive traits and behaviors they observed from role models. Preclinical students also communicated an aspiration to rise above the negative elements of medical care and refused to be influenced by the inappropriate and unhelpful behaviors and traits exhibited by other doctors and faculty who merely model the physician role. Because of these students' statements and expressions, I argue that whereas role modeling and the informal curriculum may have significant influence on clinical students, there is little to no impact on preclinical

medical students' levels of empathy.

Chapter 7 - The "Knowledge Gap" and the Hidden Curriculum

Chapter 7 examined the "knowledge gap"— the figurative distance created between medical students and lay-persons that emerges and widens as students gain medical knowledge during their training. The students voiced difficulties conversing and relating to individuals outside of medicine due to the knowledge gap, and these difficulties appeared to be heighted by the arduous nature and immense demands of medical training. Preclinical students also expressed a level of mistrust and disapproval of those outside of medicine who do not possess this medical knowledge. Furthermore, it was evident that elements of the hidden curriculum, namely that there is an authority and superiority that accompanies the power of medical knowledge, accentuates the distance produced by the knowledge gap. Because the experience of empathy is rooted in the ability and willingness to take the perspective of another, and perspective taking stems from the aptitude to relate and connect with others, it can be assumed that the knowledge gap and the effects of the hidden curriculum on that gap, could be suppressing preclinical students' levels of clinical empathy.

In sum, this project addressed the decrease in preclinical students' levels of empathy from the Micro-Level (stress and the individual), the Meso-Level (interpersonal distancing), and the Macro-Level (national standardized testing). It was found that there are various mechanisms that could be contributing to the decrease in preclinical students' levels of clinical empathy, and that students' may be actively shedding empathy, or are possibly being stripped of their empathy by the conditions and features of their training. I

now explore various recommendations for strengthening and amplifying empathy among medical students.

Recommendations for Medical Training

Admissions and Recruitment

Peter Conrad (1988) suggests that medical training has little to no impact on medical students' humanistic characteristics. He argued that individuals with "humanistic orientation" (331) not only had these attributes before they came to medical school, but were also able to maintain and utilize them throughout their years of training. Furthermore, he argued that the rising rate of technological advances in medicine and the increased need to learn new procedures, treatments, diseases would make it increasingly difficult to teach current medical students how to be caring and compassionate physicians. Rather, along with altering the reward structure of medicine to focus more on humanistic interventions than technological mediation, Conrad feels that the effort should be placed on the recruitment and admissions of ". . . individuals who already have well-developed caring, nurturing capacity" (331). My research suggests that Conrad's selection hypothesis may be inaccurate. Clearly, students are experiencing changes in their personal attributes, including their levels of empathy, due to elements of their medical training. Future research should examine the experiences, behaviors, and traits of those students that maintain or even increase their levels of empathy.

Courses

Other researchers state that it *is* possible to teach compassion, empathy, and other humanistic attributes[49]. A popular proposal is to develop curricula that focus on the medical aspects of the humanities, liberal arts, and self-reflection. Saunders et al. (2007) developed a Mind-Body Skills (MBS) course that offered first year students the opportunity to share their attitudes and feelings with other students, engage in self-discovery and stress relief through drawing, journaling, and meditation, and emphasized the importance of mind-body connections in medical care. The groups met for two hours a week, for eleven weeks. The students who participated reported medical school stressors more manageable, better academic performance, and an expansion of their respect for and practice of self-care and social support. Lancaster, Hart, and Gardner (2002) designed a four-week module around themes such as empathy, death and dying, doctor-patient communication, and doctors' emotions. Engaging with a collection of literature, the students were encouraged to delve into and discuss these humanistic topics. The participating students not only noted the module's (and the literature's) clinical relevance, but also expressed benefits in terms of levels of empathy, patient understanding, and ethical reasoning.

Advocating for a more extensive addition to the curriculum, Wear and Castellani (2000) recommend a series of courses staged over a four year curriculum that aim towards improving students' levels of humanism and professionalism. The first course focuses on "inquiry into knowledge" and the development of a sociologic consciousness where students will gain skills to investigate social systems (i.e. medical institutions),

[49] For an extensive list of approaches to the enhancement of empathy for medical professionals, see Hojat 2007 (pp 184-199). I present here a mere selection of the more popular recommendations for medical education.

reflect upon their social position within their future profession and community, and respectfully inquire about an array of cultures, values, and orientations. The authors suggest that following this particular course, medical education administrators construct their training so there is an interdisciplinary climate throughout the curriculum, a healthy fusion of ". . . the biosciences and social sciences, clinical science and humanities, community medicine and public health, economics and public policy" (609). Wear and Castellani (2000), following the suggestions of Arnold Relman, argue for the integration of a required seminar in the economics of medical care and the current health care market. Doing such, they believe, will provide students not only with a fundamental knowledge of the contemporary health care system (which they argue many students do not have), but also allow them to see how aspects of professionalism such as compassion and empathy can play a large role in current structure of patient care.

Illness Narrative Exercises

Another popular recommendation for medical education to increase, or at least maintain, humanistic attributes among students is the use of illness narratives. DasGupta and Charon (2004) found that reflexive writing exercises about their own personal illness experiences provided second year students with opportunities to share their own familiarity with being a patient. The authors suggest that these exercises allow students to minimize the distance between doctors and patients, promote self-awareness among students of the emotional and physical distress that accompanies being a patient, and potentially increase students' levels of empathy. Similarly, Kumagai (2008) suggests that the use of narratives in medical education is a transformative aspect of teaching, because

it involves a more open and reflective approach to learning on cognitive, affective, and experiential levels. It requires learners to see themselves in relationships with other individuals as well as within a community. According to Kumangi:

> Narratives, either through literature or as the personal stories of the individuals with illness, help prepare the ground on which such a transformation may occur by allowing glimpses into the subjective world of the lived experience, forging emotional links with the other, simulating self-reflection through cognitive dissonance, and eliciting resonance of similar, fundamental emotions in the learner (657).

Faculty Development Programs

Not all recommendations for medical training are directed towards the students. Some researchers advocate for seminars and courses for the instructors, small group leaders, and physicians who serve as role models. Weissmann et al. (2006) observed twelve clinical staff members (at four US medical universities) noted by residents to be excellent teachers of humanistic care. The authors found that the main avenue of clinical instruction and teaching of compassionate and empathic care was through the faculties' modeled behavior and communication skills. Furthermore, Weissmann et al. suggest that although there are many different teaching styles, "best practices" of effective clinical role models can and should be identified and used to enhance the abilities and talents of other models of the doctor role. Similarly, Williams et al. (2008) highlights the benefits of a faculty development program that focuses not only on enhancing teachers' attitudes, knowledge, and skills for bedside instruction, but also addresses issues such as the orientation of the patient, time constraints, learner autonomy, and evidence-based

diagnoses. Finally, Branch et al. (2009) describe the success of a faculty development program that was shown to enhance the humanistic attributes of medical school teachers at five different medical schools. Branch and colleagues found that faculty who participated in the 18 month development program, which was designed to increase reflexive learning skills and ability and willingness to model humanistic care, were later perceived by their medical students and residents as exhibiting more humanistic values and behaviors.

The selection of previous research presented above proposes that empathy and other humanistic attributes *can* be taught to students and faculty though courses, seminars, narrative exercises, and even programs addressing self-reflection. Yet, it is important to note that the majority of these articles, and many others on this topic, are authored by MD's, MPH's, and PhD's associated with a medical institution of some sort, and although they may be addressing medical students' levels of empathy, none are in fact written from the students' perspective. In my interviews with preclinical students I asked them if they felt that empathy and other psycho-social aspects of patient care could be taught in medical school.

> It's hard to teach someone to be empathetic though, especially in a way that doesn't make them want to roll their eyes. Teaching people things like that is so sappy and touchy-feely, it just seems so silly. Because, you know, it seems obvious, and because it's just so sappy and touchy-feely. I think it's hard for people to take it seriously. (M1)

> I feel like with the social aspects you either got it or you don't. Some people that I see in school and in the clinics and stuff are cold and calculating and appear to be after this for the

money or the recognition. I don't know how you can teach those people social skills or at least teach them how to be different or think different and I don't think you can teach that and I don't there's been a lot of that here. (M1)

I think it depends on who you are. There are a lot of people in my class that need to talk to people, be kind to people, and be empathetic, and hopefully they will learn how to do those things well. Then there are other people that are very sociable and quite good at talking and connecting with patients and others in that way. But to be honest, I know there are assholes out there and I don't know if they can learn those things though. (M2)

I think it's really important and something that we don't get a lot of exposure to. Um, I feel like it's a hard thing to teach though. I feel like when you get into that touchy-feely type of stuff it's really hard to keep people's attention because so many are just ready to blow it off. (M2)

Q: Do you feel classes that teach the social aspects of patient care are as important as those that teach the biomedical aspects of patient care?
A: Um, I don't know if the social aspects are as important. I mean, they have a place, and they definitely have an importance but I think today most of it is about science and learning the facts about things and learning the techniques. I don't know how you actually teach the social aspects, I think it has more to do with experience. I mean you can try to hammer that into students but really it's not until you're there with a patient that you can really related to (pause), it's harder to actually teach that. (M2)

There were two major themes within the students' statements about the possibility of teaching empathy in medical school. First, students believed that some medical

students had empathy and other humanistic attributes before entering medical school, and those that did not would not take well to empathy training. Second, clinical instruction, bedside learning, and experience with patients were the most effective manners in which to practice and further develop these skills and qualities of care. In this light, and following the conclusions I have drawn from my year-long research of empathy in medical school, I make the following recommendation to medical education programs to maintain, cultivate, and enhance clinical empathy among preclinical students: **Increase the frequency of *formal* examinations of psycho-social aspects of patient care in the preclinical years**. This can be done by not only escalating the number of standardized patient exercises for first and second year students, but also having these exercises formally graded in the areas of history taking, physical examination, and patient communication and connectivity skills. Similarly, preclinical medical education should include a series of vignette style examinations on verbal interactions with patients, acknowledgement of emotional and situational cues, and the discontinued use of medical jargon.

My Prescription for Preclinical Medical Education

Part I: Installation of Formal Standardized Patient Examinations

First proposed by Barrows and Abrahamson (1964), standardized patient exercises are utilized in various medical training institutions and are considered valid and reliable ways to educate and evaluate medical students' history taking, physical exam, and communication skills (Sloane et al. 2004). Colliver and Swartz (1997: 790) offer a

practical definition of a standardized patient:

> An SP (standardized patient) is a nonphysician who has been trained to portray a specific patient case in a consistent, standardized fashion. In the interaction with the examinee, the SP represents the case history in response to the examinee's questioning and undergoes physical examination at the examinee's direction. Examinees interact with SPs the same way they would interact with actual patients.

Preclinical students at County SOM partake in standardized patient exercises. While these exercises are often guided and critiqued by fellow students and a preceptor (practicing physician), they are not formally graded. Students do receive constructive criticism on their techniques and are offered ways in which they can improve. From my observations of two separate standardized patient exercises, however, I found that the majority of students who participated were more concerned with getting through their checklist and acquiring the necessary information to construct their differentials rather than focusing on sharpening their communication and connectivity skills with the patient[50]. These exercises were conducted infrequently and students' performances were evaluated informally. Therefore, it appears that the standardized patient exercises are an effective, yet underutilized, teaching and learning tool.

I suggest that standardized patient exercises not only be required for students more frequently during the preclinical term(s), but that these exercises be formally graded by a trained medical school administrator. These exercises are ideal opportunities to appraise not just the students' ability to take a history or conduct a proper physical exam,

[50] Preceptors during these exercises, however, were quick to advise students when they missed an "important" emotional or social cue offered by the patient.

but also how well the student effectively communicates medical information to the patient, how well the student is able recognize and react to the patients' emotional and social cues, and the overall ability of the student to offer empathic yet clinically effective care (Stratton et al 2005; Haidet et al. 2001; Mcgraw and O'Conner 1999). Further, the increase in use of these exercises can serve as an effective screening tool for medical educators in terms of recognizing particular skills that are lacking among students, as well as particular students that need more training in patient-centered care (Blake, Mann, and Kaufman 2001). Along with the actual grading of these exercises, these recurrent standardized patient exercises must include "patients" of various cultural, racial, educational, and socio-economic backgrounds (Beach et al. 2007). Furthermore, these patients should be of varying ages and genders (Brown, Doonan, and Shellenberger 2005)[51]. Increasing the diversity of the patients seen during these exercises not only exposes students to a plethora of patient circumstances but also has the potential to close the knowledge gap between medical students and lay persons by providing numerous opportunities for preclinical students to see that the patient's knowledge can be of value as well. In this sense, this form of evaluation also has the potential to deflate the negative effects of the hidden curriculum and instead, implicitly educate students regarding the equanimity between doctors and patients that Sir William Osler spoke of.

The frequency and formality of these standardized patient exercises will not only enhance and improve preclinical students' skills regarding patient-centered care, but also demonstrate to students that their medical school values this type of knowledge as much as the biomedical and technical knowledge. To this degree, I also suggest that the

[51] It should be noted that the patients of the two standardized patient exercises that I observed were all white and a majority were of middle age.

USMLE Step 1 Board Exams include a standardized patient exercise. Doing such will further illustrate to students that the institution of medicine, and the overarching culture of medicine, believes that attributes and skills such as empathy, communication, and affective understanding are valuable to practicing physicians. Recently, the NBME decided to include a standardized patient based Clinical Skills examination in the Step 2 test, designed to evaluate the student's interpersonal and communication skills that cannot be measured by means of multiple choice questions (Wettach 2003). "Step 2 CS will be administered separately as a day-long session of ten individual SP encounters, each lasting 15 minutes. In that time, an examinee must establish rapport, obtain a relevant history, perform a focused physical examination, and appropriately counsel the SP" (1240). Although more testing and research is needed to see if this new addition to the USMLE Step 2 Board Exams has been effective in evaluating students' patient-centered skills, it is interesting to note that steps have been taken to assess these types of skills on a national level. The question remains however: If these skills are essential to pass Step 2's, why are they not tested in Step 1's? The NBME believes that these skills are necessary to progress through fourth year and into residency, but not essential for effective and successful progression through the preclinical years. I believe that this omission is nonsensical and reflects poorly on the priorities of institution of medicine.

Part II: Installation of Formal Patient Centered Vignette Examinations

As discussed earlier, the use of illness narratives can be an effective way of having medical students engage in self-reflection, perspective taking, and understanding others' affective states. Formal examinations using patient-centered vignettes could work

in a similar fashion. Vignettes that describe particular patient scenarios and elaborate specifically on the patient's history and current condition provide open-ended opportunities for students to react (in written form) to verbal cues, explicit emotional cues, and situational cues embedded in the story. Serving as a narrative form of "Where's Waldo", students would be required to acknowledge and respond to particular elements within the story. These vignettes would hone the students' ability to recognize non-biomedically oriented signals of a patient's affliction, look beyond the symptoms the patient is presenting and focus on the social, cultural, and environmental issues. Various vignettes could be designed, depicting patients of diverse cultures, races, genders, educational backgrounds, ages, and illnesses. These examinations would be administered at the end of each month during the preclinical term(s), and evaluated by a trained administrator.

Both the standardized patient and vignette examinations must be formally graded so that students take these examinations, and what they test, seriously. Doing such also shows preclinical students that the medical school, as an institution, believes these elements of care to be just as valuable as the biomedical, which are already tested regularly. Because assessment drives learning, medical training programs should adopt these official forms of evaluating students' patient-centered skills as early as the first year. Furthermore, these evaluations will not add to already saturated medical curriculum in that there is no required course, program, or seminar, merely a series of monthly evaluations.

This study showed that preclinical medical students significantly declined in clinical empathy, but not in general empathy[52]. Not only does this distinction support the argument that clinical and general empathy are separate concepts, but this also suggests that preclinical students are experiencing decreases in their willingness and ability to connect specifically with patients. As noted earlier, perhaps this is because preclinical students are simply not seeing "live" patients frequently (as compared to M3's and M4's). This could be remedied by forcing them to engage with standardized patients, so that they are given the opportunities to develop and practice their communication and connectivity skills.

Although I would argue that County SOM's new curriculum does provide an increased emphasis on patient-centered care, compassion, and empathy, the overarching culture of medicine still widely prevails in students' perceptions of what type of medical knowledge is important to gain. Until training programs consistently demonstrate that attributes such as empathy are valued and appreciated within the culture of medicine, the rise in technological, pharmaceutical, and clinical advances will continue to dominate what students' feel is important to learn and practice. A feasible and cost-effective means to achieve this is to administer more formal evaluations of preclinical students' patient-centered skills, such as through standardized patient exercises and vignettes.

As noted in Chapter 1, patients who perceive their doctor to be empathic also report higher satisfaction with their doctor, higher compliance with their doctor's suggestions, and even have better outcomes in terms of their physical and mental health. Similarly, doctors who have high levels of empathy toward their patients report higher levels of job satisfaction. Therefore, discovering feasible and cost effective ways to

[52] Third year medical students significantly declined in both clinical and general empathy.

boost or simply even preserve future doctors' levels of empathy is crucial to patients' and physicians' well-being.

Limitations of the Study

I was unable to gain IRB approval to observe preclinical students during their OPEX and Clinical Methods sessions. Similarly, I was unable to speak with the patients that preclinical students interviewed during these sessions. These observations and interviews would have provided fruitful data in terms of role modeling behavior, students' actual approach to patients, patients' evaluations of the students, and even empathy in action by both physicians and students. Similarly, I was unable to observe every first and second year class, lab, and small group due to time constraints as well as lack of a second, or even third, observer (which is yet another limitation of this study). Previously, however, I noted that observations of classes, labs, and small groups would primarily be used to unearth potential aspects of the explicit, implicit, and hidden curriculums that could be addressed in the interviews with students.

My analysis of course hours in the M1 and M2 curriculums devoted to the discussion and practice of the social aspects of medicine could be regarded as rudimentary and lacking legitimacy. It could be said that the means by which I selected interview subjects was also problematic and therefore my data was riddled with selection bias. Because I selected only ten students from each cohort and these students were selected because of their willingness to participate (not selected randomly), the representative nature of my sample could be questioned. Similarly, because this study was conducted at County's School of Medicine only, the total sample is not

representative of all medical school students. Therefore findings outlined in this project are not to be generalized to all medical school students. Finally, this study did not include a control group or a comparison group. Grade cohorts were utilized as comparison groups for other grade cohorts (i.e. M1, M2, and M3), yet no other samples of medical school students, other professional school students (i.e. Law, Nursing, Business, etc.) or graduate students (i.e. Sociology, Psychology, Chemistry, Biology, etc.) were utilized in this study.

Future Directions

Despite the limitations listed above, this study does open numerous doors for future research in this area. Currently, I am continuing the study of medical students' empathy and am following the sample gathered during 2007-2008 as they progress through another academic year. In the current, ongoing study, the Class of 2012 has been added, and the survey instrument has been improved to include measures of religiosity, burnout, and strength of familial and friendship relations. Davis' Interpersonal Reactivity Scale (IRI) (Davis 1996) was also included as a third empathy scale. The IRI was added not only to improve the empathy measures overall, but also to further examine the conceptual and operational differences between clinical empathy and general empathy. This study will continue to follow the current sample of M1, M2, M3, and M4 cohorts through their years of medical school, into their residency programs and possible fellowships, and even during their professional practice. The short-term goal of this project is to see if the new curriculum has any positive (or negative) impact on students' levels of empathy as they progress through their training and practice. The long-term

goal is to uncover attributes, experiences, and events that may impact students' clinical and general empathy throughout their medical careers. This project will also provide a broader understanding of the life-course of a contemporary physician, from the physician's perspective. There are plans to include samples of other professional students such as Law, Business, and Nursing in future versions of the study. Similarly, a version of the study itself will be transplanted to a nursing school to investigate the role of empathy within nurse training.

Given County SOM's predominantly white student population and the school's unique ties to a hospital with a predominantly minority patient population, it is of great interest to gather County SOM students' perspectives of this hospital's patients and their overall experiences while at this hospital during their preclinical and clinical years. During my interviews with these students, a number of them expressed that the possibility of working at this hospital was a main reason for choosing County SOM. A number of them also expressed, however, an apparent disenchantment with this particular hospital due to its lack of resources and under educated, low-income patient population. Uncovering students' perceptions of this one of a kind health care facility would be remarkable. Such a study would not only address perceptions of low-resource facilities, but also students' attitudes towards particular types of patients and perhaps even uncover mechanisms behind certain health care disparities.

The notion of "distancing" between medical students and lay persons was raised in Chapter 7. I believe it would be useful to develop a measurement to test this. A "similarities scale" could be designed to assess how close (emotionally and intellectually) students feel they are to particular individuals not in the realm of medicine. These

assessments could be coupled with the vignette exams suggested earlier. Examining the degree of "relate-ability" students' experience towards potential patients , and how this may oscillate over the course of the training, could provide a better understanding of the fluctuations in their levels' of empathy. It is also of interest to uncover the attributes and experiences of those students that either maintained high levels of empathy or actually increased in their levels of empathy. In the vein of studying positive qualities, it is of significant interest to know what type of students actually increase in their willingness and abilities to connect with others. Finally, as I suggested earlier, I believe the next step in maintaining and perhaps even enhancing students' empathy in the preclinical years is to integrate frequent standardized patient encounters and patient-centered vignettes that are formally graded. Doing such not only provides preclinical students with the opportunity to practice and discuss psycho-social aspects of patient care, thereby sharpening their skills in this area, but also sends a clear message to the students that their medical school, and the institution of medicine overall, values these skills. A worthwhile study would utilize a sample of first year students from two similar medical training programs with comparable curriculums. One program, however, will incorporate these formal evaluations into their regular curriculum. A survey containing the IRI, BEES, and JSPE would be administered to each cohort at the beginning and end of the first and second year respectively. I hypothesize that there will be a significant difference in the empathy measures between the cohorts such that the students who participated in the program with the standardized patient and vignette examinations will report higher levels of empathy on all scales as early as the end of the first year, and this significant

difference will be further expounded by the end of the second year.

Prognosis

To be clear, this project does not suggest in any way that the current state of medical curriculum is poor or lacking. Rather, this project is merely an investigation into the empathy levels of first and second year students at one particular medical training institution, and the potential mechanisms behind any changes in those empathy levels. It was found that first and second year students decreased significantly in clinical empathy during the course of the academic year. Although the negative impact of stress was found to not be a significant predictor of the decrease in empathy, it was suggested that students shed empathy in order to become less vulnerable to medical school stressors. Furthermore, it was proposed that the hours of the M1 and M2 curriculums devoted to the discussion and practice of patient-centered care decreased over the course of the academic year. This reduction, along with the substantial lack of formal testing of students' patient communication skills, connectivity, and ability to build patient rapport, are also argued to have led to the decrease in preclinical students' empathy. Although role models were found to have little to no impact on empathy levels, the "knowledge gap", accentuated by the arduous nature of medical training, and heighted by elements of the hidden curriculum, is suggested to lead to corruption of preclinical students' willingness and ability to take the perspective of others, lending to a decrease in empathy.

Researchers, physicians, instructors, patients, and even students all argue that empathy is a valuable asset in medical care that provides positive mental and physical health outcomes for doctors and patients. Previous literature noted that there was a

significant decrease in students' levels of empathy in the clinical years, specifically the third year. This study, however, shows that students' empathy levels are decreasing as early as the first year of medical training. With an already overloaded curriculum, packed to the brim with courses, seminars, group work, and labs, it is unlikely that another course or program is going to be feasible or effective in promoting empathy among students. Students themselves are able to distinguish between doctors' behaviors and values that are beneficial and harmful to patients. Therefore, perhaps faculty development programs are useful for faculty, but not directly for medical students. This study shows that clinical empathy and compassionate care need to be more than buzz words written in medical schools' course bulletins and handbooks. They need to be more than catch-phrases on the AAMC's and the AMA's websites. The institution of medicine must start demonstrating to preclinical students that these skills are necessary for successful progression through medical training and essential to the role of a physician. In order to do this, they must follow the maxim they have practiced for decades, "assessment drives learning". Medical schools, and the NBME, must integrate formally graded exams on these particular skills into the preclinical curriculum. Until then, empathy will continue to be viewed as "touchy-feely", "sappy", and not taken seriously by our future doctors.

Medical education literature often neglects the experiences of preclinical medical students, citing the clinical years as the more formative in terms of shaping students' values, attitudes, and perceptions. This project shows that the first two years are just as seminal. Taking both individual-level and organizational-level perspectives, and utilizing both qualitative and quantitative methodologies, this project not only sheds light on the

experiences of preclinical medical students, but the role of empathy in preclinical medical education as well. This work is unique in that it addresses four prominent elements of preclinical medical education that affect students' levels of empathy, and presents feasible and effective means of counteracting their deleterious effects. If we, patients, want more empathic physicians, researchers must continue to address the influential aspects of the first two years of medical training.

TABLE 1. Mean Sample Characteristics and Independent Samples *t*-Test for each Grade Cohort

	Total Sample		M1 Class		M2 Class		M3 Class		M1 & M2		M2 & M3		M1 & M3	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	*t*	*df*	*t*	*df*	*t*	*df*
BEES T1	9.830	5.220	9.383	5.641	10.376	4.707	9.815	5.188	-1.405	219	0.817	207	-0.599	226
BEES T2	9.505	5.337	9.458	5.511	10.401	5.119	9.8718	5.250	-1.309	219	2.343*	207	1.036	226
JSPE T1	117.920	9.944	119.033	10.292	118.166	8.092	116.453	10.977	0.686	219	1.290	196.494	1.831	226
JSPE T2	114.619	11.800	115.157	11.378	115.223	11.089	113.456	12.881	-0.043	219	1.059	207	1.059	226
Neuro T1	14.829	4.814	14.625	4.624	14.743	4.736	15.137	5.115	-0.186	219	-0.578	207	-0.794	226
Neuro T2	14.714	5.040	14.400	5.154	15.277	4.881	14.537	5.061	-1.291	219	1.075	207	-0.202	226
Extra T1	26.290	4.903	26.642	5.067	25.911	4.788	26.253	4.840	1.095	219	-0.513	207	0.591	226
Extra T2	26.222	4.877	27.008	4.637	25.475	5.100	26.048	4.840	2.339*	219	-0.833	207	1.529	226
Conscien T1	28.352	4.511	28.703	4.590	27.604	4.752	28.661	4.133	1.745	219	-1.718	207	0.073	226
Conscien T2	27.692	4.761	27.547	4.914	27.347	4.884	28.176	4.468	0.304	219	-1.282	207	-1.006	226
Emo WB T1	12.769	1.889	12.875	1.899	12.792	1.824	12.630	1.946	0.329	219	0.622	207	0.963	226
Emo WB T2	12.251	2.180	12.275	2.279	12.064	2.058	12.398	1.946	0.715	219	-1.134	207	-0.415	226
Soc WB T1	14.503	4.416	14.471	4.651	14.842	4.006	14.222	4.530	-0.629	219	1.044	207	0.408	226
Soc WB T2	14.786	4.664	15.083	4.577	14.473	4.530	14.750	4.901	0.993	219	-0.424	207	0.531	226
Psych WB T1	24.118	4.138	24.002	4.662	24.408	3.614	23.977	4.001	-0.729	217.596	0.817	207	0.044	226
Psych WB T2	23.329	4.704	23.433	4.859	22.789	4.831	23.720	4.395	0.985	219	-1.458	207	-0.464	226
Subj WB T1	51.465	8.755	51.378	9.897	52.177	7.491	50.896	8.530	-0.682	216.676	1.150	207	0.392	226
Subj WB T2	50.390	10.092	50.792	10.332	49.380	9.709	50.888	10.198	1.040	219	-1.094	207	-0.071	226
#1 Stress	Time Management		Amount of Material		Amount of Material		Academic Pressures							
Neg. Impact	25.226	5.977	23.968	5.438	25.787	5.819	26.101	6.490	-2.399*	219	-0.369	206.641	-2.699**	226

*p < .05. **p < .01. ***p < .001. All two-tailed tests.

TABLE 2. Pair Samples *t*-Test for each Grade Cohort

	M1 Class			M2 Class			M3 Class		
	Mean	SD	*t*	Mean	SD	*t*	Mean	SD	*t*
BEES T1	9.383	5.641		10.376	4.707		9.815	5.188	
BEES T2	9.458	5.511	-0.209	10.401	5.119	-0.062	98.718	5.250	2.476*
JSPE T1	119.033	10.292		118.166	8.092		116.453	10.977	
JSPE T2	115.157	11.378	3.657***	115.223	11.089	3.409**	113.456	12.881	2.864**
Neuro T1	14.625	4.624		14.743	4.736		15.137	5.115	
Neuro T2	14.400	5.154	0.667	15.277	4.881	-1.631	14.537	5.061	1.862**
Extra T1	26.642	5.067		25.911	4.788		26.253	4.840	
Extra T2	27.008	4.637	-1.016	25.475	5.100	1.530	26.048	4.840	0.657
Conscien T1	28.703	4.590		27.604	4.752		28.661	4.133	
Conscien T2	27.547	4.914	3.602***	27.347	4.884	0.920	28.176	4.468	1.568
Emo WB T1	12.875	1.899		12.792	1.824		12.630	1.946	
Emo WB T2	12.275	2.279	3.072**	12.064	2.058	3.776***	12.398	1.946	1.306
Soc WB T1	14.471	4.651		14.842	4.006		14.222	4.530	
Soc WB T2	15.083	4.577	-2.015*	14.473	4.530	0.911	14.750	4.901	-1.250
Psych WB T1	24.002	4.662		24.408	3.614		23.977	4.001	
Psych WB T2	23.433	4.859	1.317	22.789	4.831	3.959***	23.720	4.395	0.777
Subj WB T1	51.378	9.897		52.177	7.491		50.896	8.530	
Subj WB T2	50.792	10.332	0.818	49.380	9.709	3.279**	50.888	10.198	0.011

*p < .05. **p < .01. ***p < .001. All two-tailed tests.
df = 107 for all *t* scores

TABLE 3a. Regression of Change in BEES Scores on Overall Negative Impact of Stressors, Negative Impact of Stressors on Humanistic Qualities, Change in Personality Characteristics, Change in Subjective Well-Being, and Demographics.

	Overall Negative Impact		*Negative Impact on Humanistic Qualities*		*Change in Personality Characteristics*		*Change in Subjective Well-Being*		*Demographics*		*Full Model*	
	B	Beta	B	Beta	B	Beta	B	Beta	B	Beta	B	Beta
Overall Negative Impact	-0.080*	-0.114	-0.166**	-0.164	-0.079*	-0.112	-0.080*	-0.114	-0.071	-1.773	-0.100*	-0.141
Emotional Connectivity			0.250	0.079							0.269	0.085
Interpersonal Communication			0.154	0.043							0.028	0.008
Concern for Patients			0.233	0.035							0.206	0.031
Extraversion					0.177*	0.144					0.177*	0.143
Neuroticism					-0.011	-0.009					-0.049	-0.040
Conscientiousness					0.205**	0.157					0.206**	0.157
Change in Well-Being							-0.001	0.002			-0.018	-0.035
Gender									-0.278	-0.033	-0.338	-0.040
Age									0.016	0.042	0.019	0.050
M2									0.040	0.004	-0.076	-0.008
M3									-1.044	-0.116	-1.080	-0.120
Constant	1.698		1.665		1.811		1.703		1.522		1.555	
Adjusted R2	0.010		0.013		0.059		0.007		0.015		0.065	
F Statistic	4.275*		2.081		6.138***		2.132		1.969		2.892**	

*p < .05. **p < .01. ***p < .001. All two-tailed tests.

TABLE 3b. Regression of Change in JSPE Scores on Overall Negative Impact of Stressors, Negative Impact of Stressors on Humanistic Qualities, Change in Personality Characteristics, Change in Subjective Well-Being, and Demographics.

	Overall Negative Impact		*Negative Impact on Humanistic Qualities*		*Change in Personality Characteristics*		*Change in Subjective Well-Being*		*Demographics*		*Full Model*	
	B	Beta	B	Beta	B	Beta	B	Beta	B	Beta	B	Beta
Negative Impact	0.110	0.062	0.125	0.071	.0122	0.069	0.152	0.087	0.107	0.061	0.165	0.094
Emo. Connectivity			-0.144	-0.018							-0.173	-0.022
Inter. Communication			0.176	0.020							0.212	0.024
Concern for Patients			-0.680	-0.041							-1.026	-0.062
Extraversion					0.423*	0.167					0.392*	0.127
Neuroticism					-0.233	0.159					-0.224	-0.074
Conscientiousness					1.041***	0.320					1.048***	0.321
Change in WB							0.160*	0.121			0.071	0..054
Gender									-0.299	-0.011	-0.408	-0.019
Age									-0.025	-0.027	-0.006	-0.007
M2									0.806	0.035	0.499	0.022
M3									0.669	0.030	0.206	0.009
Constant	-6.070*		-6.036*		15.62***		-6.976**		-5.700*		-5.975	
Adjusted R2	0.001		-0.007		0.151		0.012		-0.010		0.138	
F Statistic	1.277		0.461		-5.697*		2.997		0.371		5.369***	

*p < .05. **p < .01. ***p < .001. All two-tailed tests.

TABLE 3c. Regression of Change in Subjective Well-Being Scores on Overall Negative Impact of Stressors, Negative Impact of Stressors on Humanistic Qualities, Changes in Personality Characteristics, Demographics, and Change in Empathy Scores.

	Overall Negative Impact		*Negative Impact on Humanistic Qualities*		*Change in Personality Characteristics*		*Demographics*		*Change in Empathy Scores*		*Full Model*	
	B	Beta	B	Beta	B	Beta	B	Beta	B	Beta	B	Beta
Negative Impact	-0.267***	-0.200	-0.217**	-0.162	-0.253***	-0.189	-0.253**	-0.189	-0.284***	-0.212	-0.227**	-0.169
Emo. Connectivity			-0.396	-0.066							-0.132	-0.022
Inter. Communication			0.051	0.008							0.146	0.022
Concern for Patients			-1.012	-0.080							-1.532*	-0.121
Extraversion					0.350**	0.149					0.318*	0.136
Neuroticism					-0.255	-0.098					-0.198	-0.086
Conscientiousness					0.089	0.036					0.115	0.047
Gender							-1.688	-0.106			-1.678	-0.105
Age							0.056	0.078			0.078*	0.108
M2							-1.881	-0.109			-1.491	-0.086
M3							1.1019	0.060			1.213	0.071
Change in BEES									-0.071	-0.038	-0.089	-0.047
Change in JSPE									0.097*	0.127	0.051	0.067
Constant	5.671**		5.732**		5.362**		4.972*		6.380**		4.472*	
Adjusted R2	0.037		0.039		0.072		0.064		0.046		0.102	
F Statistic	13.61***		4.328**		7.390***		5.483***		6.292***		3.874***	

*p < .05. **p < .01. ***p < .001. All two-tailed tests.

TABLE 3d. Regression of Overall Negative Impact of Stressors on Change in Empathy Scores, Change in Personality Characteristics, Change in Subjective Well-Being, and Demographics.

	Change in Empathy Scores		*Change in Personality Characteristics*		*Change in Subjective Well-Being*		*Demographics*		*Full Model*	
	B	Beta	B	Beta	B	Beta	B	Beta	B	Beta
BEES	-0.199*	-0.141	-0.196*	-0.138	-0.201*	-0.142	-0.172*	-0.122	-0.176*	-0.124
JSPE	0.057	0.100	0.063	0.111	0.070*	0.123	0.052	0.091	0.066*	0.177
Extraversion			0.023	0.013					0.124	0.071
Neuroticism			0.174	0.101					0.133	0.078
Conscientiousness			-0.006	-0.003					-0.056	-0.030
Change in WB					-0.157***	-0.210			-0.146***	-0.195
Gender							1.865**	0.156	1.602*	0.134
Age							0.044	0.081	0.048	0.090
M2							1.631*	0.126	1.334	0.103
M3							1.889*	0.149	2.103**	0.165
Constant	25.35***		25.39***		25.22***		22.13***		22.04***	
Adjusted R2	0.016		0.017		0.057		0.056		0.090	
F Statistic	3.705*		2.127		7.619***		4.267***		4.262***	

*p < .05. **p < .01. ***p < .001. All two-tailed tests.

TABLE 4a. Impact of Stressors and Empathy Correlations for Whole Sample

	BEES1	BEES2	JSPE1	JSPE2	Change in BEES	Change in JSPE
BEES1		0.681***	0.427***	0.344***	-0.376***	-0.018
BEES2	0.681***		0.399***	0.459***	0.423***	0.0195***
JSPE1	0.427***	0.399***		0.543***	-0.100	-0.366***
JSPE2	0.344***	0.459***	0.543***		0.155**	0.608***
Overall Negative Impact	0.191***	0.097	0.016	0.069	-0.114*	0.062
Financial Worries	0.042	-0.058	-0.025	-0.043	-0.126*	-0.024
Time Management (1 & 3)	0.213***	0.191***	0.043	0.102	-0.021	0.074
Academic Pressures	0.126*	0.105	0.038	0.108	-0.022	0.086
Amount of Material (2)	0.178**	0.146**	0.083	0.078	-0.034	0.010
How Evaluated	0.117*	-0.002	-0.068	-0.001	-0.148**	0.063
Demands of Relations	0.190*	0.178**	0.120*	0.098	-0.008	-0.003
Peer Competition	0.120*	0.031	-0.029	-0.029	-0.110	-0.005
Anonymity in Program	0.001	-0.056	-0.006	-0.014	-0.073	-0.010
Perceived Mistreatment	0.000	-0.026	-0.118*	-0.005	-0.033	0.105
Interactions with Patients	0.046	0.012	0.019	0.050	-0.041	0.039
Gender	0.466***	0.411***	0.234***	0.198***	-0.073	-0.008
Age	-0.047	-0.023	-0.004	-0.020	0.030	-0.018
Change in Subjective Well-Being	0.015	0.057	-0.006	0.090	0.050	0.103

*p < .05. **p < .01. ***p < .001. All two-tailed tests.

TABLE 4b. Impact of Stressors and Empathy Correlations for M1 Class

	BEES1	BEES2	JSPE1	JSPE2	Change in BEES	Change in JSPE
BEES1		0.752***	0.490***	0.338***	-0.381***	-0.104
BEES2	0.752***		0.335***	0.473***	0.323***	0.166
JSPE1	0.490***	0.335***		0.430***	-0.234*	-0.465***
JSPE2	0.338***	0.473***	0.430***		0.178	0.599***
Overall Negative Impact	0.218*	0.154	0.206*	0.188*	-0.097	0.001
Financial Worries	0.009	-0.023	-0.125	0.041	-0.046	0.152
Time Management	0.233*	0.187*	0.169	0.048	-0.070	-0.103
Academic Pressures (3)	0.089	0.016	0.171	0.135	-0.106	-0.019
Amount of Material (1 & 2)	0.236*	0.205*	0.280**	0.135	-0.050	-0.115
How Evaluated	0.131	0.114	0.106	0.187*	-0.026	0.089
Demands of Relations	0.182	0.114	0.126	0.034	-0.100	-0.078
Peer Competition	0.128	0.075	0.018	0.078	-0.078	0.060
Anonymity in Program	-0.106	-0.069	0.052	0.016	0.055	-0.031
Perceived Mistreatment	0.126	0.104	0.121	0.096	-0.033	-0.013
Interactions with Patients	0.080	0.107	0.137	0.192*	0.037	0.068
Gender	0.487***	0.431***	0.230**	0.229*	-0.103	0.017
Age	-0.168	-0.126	0.001	0.000	0.067	0.000
Change in Subjective Well-Being	0.009	0.188*	-0.144	0.004	0.239**	-0.105

*p < .05. **p < .01. ***p < .001. All two-tailed tests.

TABLE 4c. Impact of Stressors and Empathy Correlations for M2 Class

	BEES1	BEES2	JSPE1	JSPE2	Change in BEES	Change in JSPE
BEES1		0.664***	0.391***	0.333**	-0.323**	0.061
BEES2	0.664***		0.250*	0.347***	0.493***	0.211*
JSPE1	0.391***	0.250*		0.630***	-0.139	-0.127
JSPE2	0.333**	0.347***	0.630***		0.052	0.690***
Overall Negative Impact	0.219*	0.111	-0.038	-0.014	-0.114	0.018
Financial Worries	-0.043	-0.071	0.117	-0.093	-0.039	-0.228*
Time Management (3)	0.157	0.215*	-0.015	0.177	0.088	0.240*
Academic Pressures (2)	0.125	0.115	-0.118	-0.037	-0.002	0.062
Amount of Material (1)	0.188	0.167	-0.095	-0.019	-0.010	0.064
How Evaluated	0.160	-0.010	-0.120	-0.043	-0.202*	0.057
Demands of Relations	0.230*	0.323**	0.065	0.110	0.138	0.081
Peer Competition	0.245*	0.117	-0.046	-0.116	-0.140	-0.105
Anonymity in Program	0.124	-0.068	0.080	0.031	-0.234*	-0.035
Perceived Mistreatment	0.000	-0.162	-0.083	-0.066	-0.205*	-0.007
Interactions with Patients	0.078	0.009	0.027	-0.035	-0.082	-0.069
Gender	0.404***	0.332***	0.102	-0.041	-0.073	-0.146
Age	0.030	0.058	-0.055	-0.070	0.034	-0.033
Change in Subjective Well-Being	0.041	0.058	0.119	0.248**	0.021	0.188*

*p < .05. **p < .01. ***p < .001. All two-tailed tests.

TABLE 4d. Impact of Stressors and Empathy Correlations for M3 Class

	BEES1	BEES2	JSPE1	JSPE2	Change in BEES	Change in JSPE
BEES1		0.611***	0.401***	0.366***	-0.428***	0.029
BEES2	0.611***		0.398***	0.529***	0.453***	0.255*
JSPE1	0.401***	0.398***		0.595***	0.003	-0.305**
JSPE2	0.366***	0.529***	0.595***		0.191*	0.584***
Overall Negative Impact	0.129	0.042	-0.076	0.052	-0.097	0.139
Financial Worries	0.159	-0.086	-0.028	-0.079	-0.275**	-0.065
Time Management (3)	0.232*	0.167	-0.046	0.092	-0.066	0.156
Academic Pressures (1)	0.143	0.180	0.008	0.182	0.048	0.207*
Amount of Material (2 & 3)	0.095	0.028	-0.017	0.085	-0.074	0.118
How Evaluated	0.050	-0.040	-0.072	-0.055	-0.101	0.007
Demands of Relations	0.180	0.113	0.131	0.138	-0.070	0.032
Peer Competition	-0.005	-0.095	-0.048	-0.051	-0.103	-0.012
Anonymity in Program	-0.005	0.008	-0.039	-0.035	0.014	-0.002
Perceived Mistreatment	-0.115	0.034	-0.226*	0.015	0.166	0.245*
Interactions with Patients	-0.014	-0.112	-0.141	-0.038	-0.113	0.097
Gender	0.501***	0.457***	0.333***	0.359***	-0.055	0.071
Age	0.058	-0.005	0.182	0.078	-0.070	-0.095
Change in Subjective Well-Being	0.034	-0.048	0.024	0.053	-0.091	0.036

*p < .05. **p < .01. ***p < .001. All two-tailed tests.

TABLE 5a: Class of 2010 Second Year Curriculum: (Course Bulletin 2006)

Fall Semester			*Spring Semester*		
Course Number	**Course Name**	**Credit Hours**	**Course Number**	**Course Name**	**Credit Hours**
MEDI 605	Microbiology / Immunology	10	MEDI 611	Introduction to Clinical Methods	8
MEDI 610	Introduction to Clinical Methods	*	MEDI 616	Pathology	5
MEDI 615	Pathology	6	MEDI 640	Pharmacology	8
MEDI 620	Human Behavior / Pathophysiology	3	MEDI 645	Required Elective Courses	2
MEDI 650	Pathophysiology	5	MEDI 651	Pathophysiology	5
MEDI 655	Medical Problem Solving II	*	MEDI 656	Medical Problem Solving II	5

-Courses noted with an asterisk (*) cover two semesters. In these courses, a grade of S/U is given fro fall semester, with a final letter grade given at the end of the spring semester.
- S/U grade is given for all elective courses.

TABLES 5b & 5c: Class of 2011 "New" Preclinical Curriculum (Course Bulletin 2009)

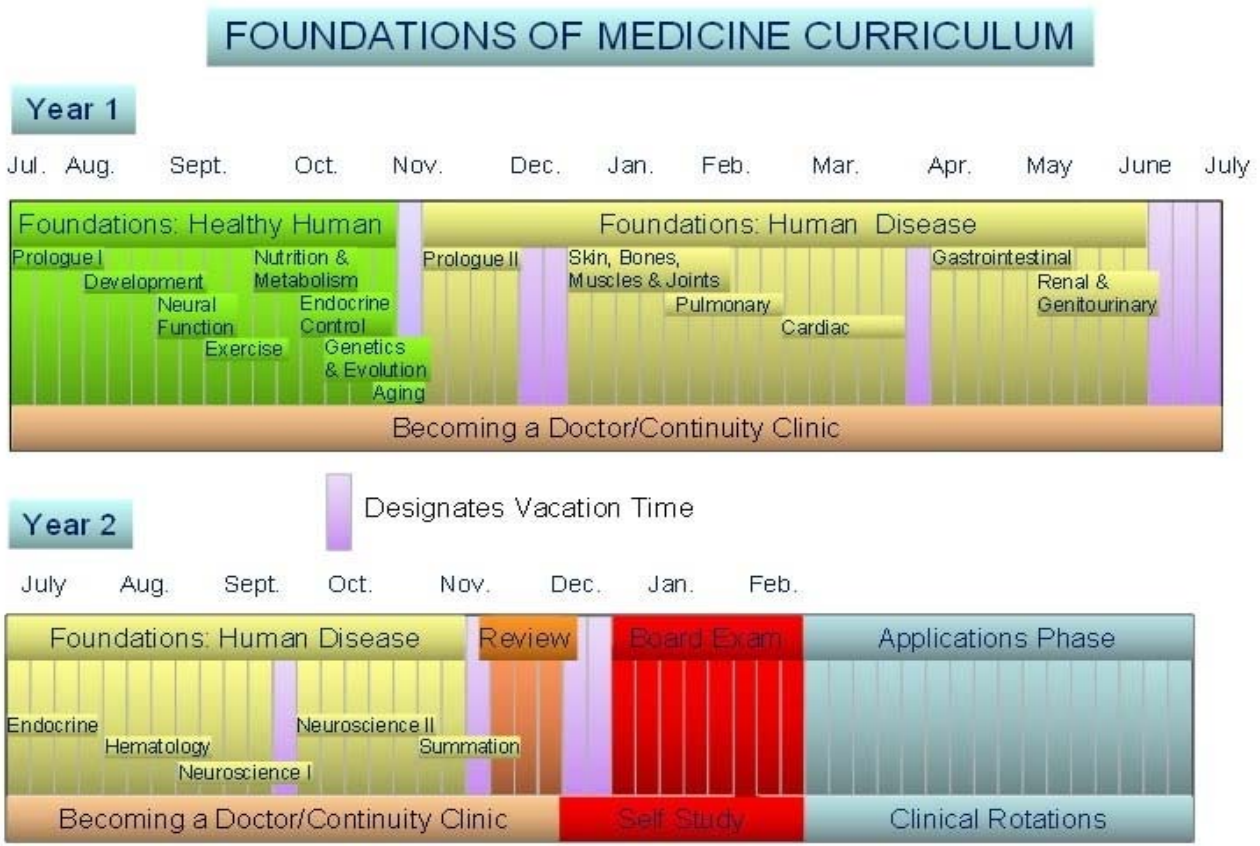
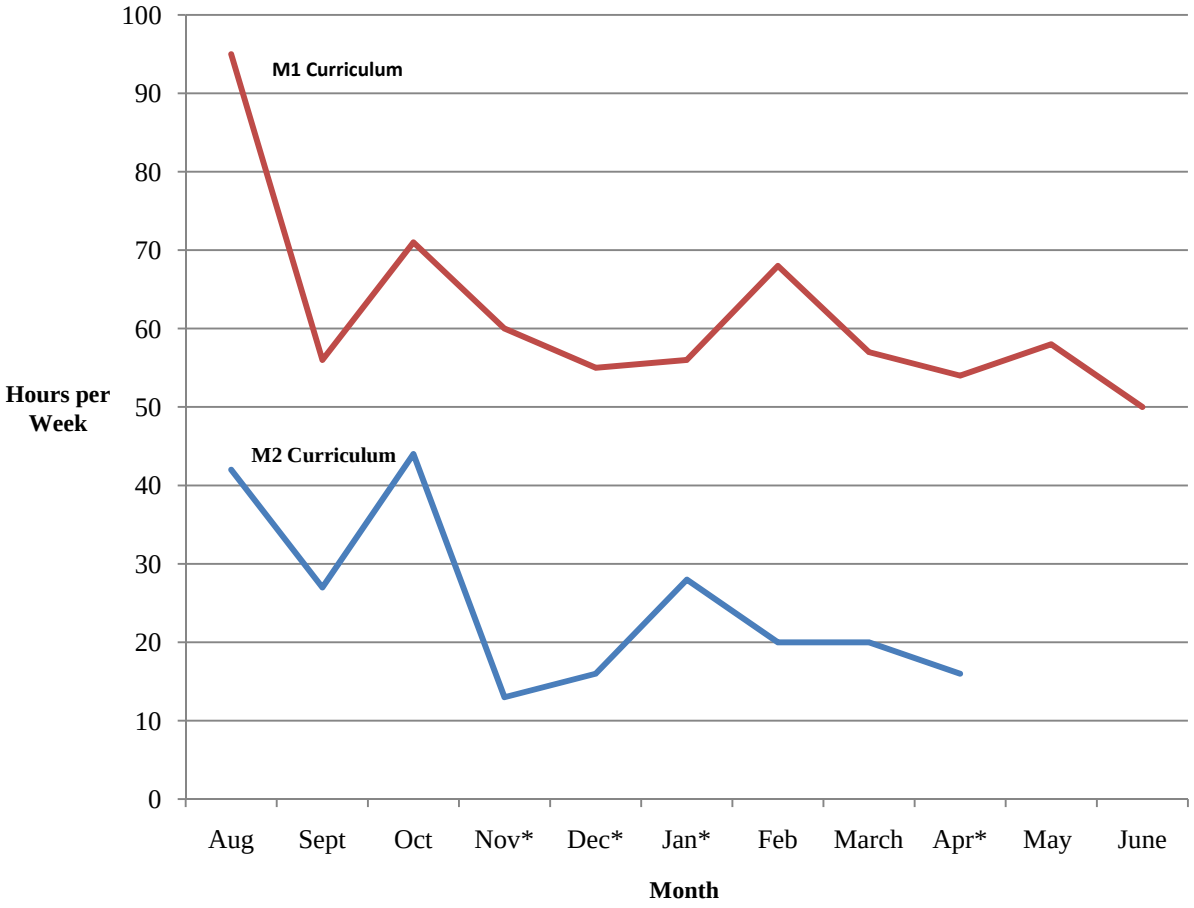


TABLE 5d: Original "Traditional" Year 1 Curriculum (Course Bulletin 2006)

Fall Semester			*Spring Semester*		
Course Number	**Course Name**	**Credit Hours**	**Course Number**	**Course Name**	**Credit Hours**
MEDI 505	Human Anatomy	7	MEDI 530	Neuroscience	6
MEDI 510	Human Embryology	2	MEDI 536	Physiology	8
MEDI 515	Medical Biochemistry	7	MEDI 540	Cell Biology & Histology	7
MEDI 535	Physiology	*	MEDI 545	Human & Molecular Genetics	4
MEDI 550	Patient-Doctor-Community	*	MEDI 551	Patient-Doctor-Community	4
MEDI 552	Medical Decision Making	2	MEDI 553	Medical Decision Making	4
MEDI 555	Medical Problem Solving I	*	MEDI 556	Medical Problem Solving I	4

-Courses noted with an asterisk (*) cover two semesters. In these courses, a grade of S/U is given fro fall semester, with a final letter grade given at the end of the spring semester.
-S/U grade is given for all elective courses.

TABLE 6: Hours per Week of M1 and M2 Curriculum Devoted to Social Aspects of Medicine



- * designates a month with at least a week of vacation

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EMORY UNIVERSITY | Institutional Review Board

FROM: Alan Abramowitz, PhD
Vice Chair
Emory University IRB

TO: Barret Michalec
Principal Investigator

CC: Keyes Corey Sociology

DATE: July 13, 2007

RE: **Notification of Expedited Approval**
IRB00004617
Learning to Care: Explicit and Implicit Medical School Curriculum and its Potential Impact on Medical Students' Empathy

This is your notification that your above referenced study was reviewed and APPROVED under the Expedited review process per 45 CFR 46.110(7) and 21 CFR 56.110. The approval is valid from **7/11/2007 until 7/10/2008** . Thereafter, continued approval is contingent upon the submission of a continuing review request that must be reviewed and approved by the IRB prior to the expiration date of this study.

Any reportable events (serious adverse events, breaches of confidentiality, protocol deviation or protocol violations) or issues resulting from this study should be reported immediately to the IRB and to the sponsoring agency (if any). Any amendments (changes to any portion of this research study including but not limited to protocol or informed consent changes) must have IRB approval before being implemented.

All correspondence and inquiries concerning this research study must include the IRB ID, the name of the Principal Investigator and the Study Title.

Sincerely,

Alan Abramowitz, PhD
Vice Chair
Emory University Institutional Review Board
This letter has been digitally signed

Emory University Consent to be a Research Subject

Title: A Study of Medical Students' Attitudes

Principal Investigator: Barret Michalec, MA, Department of Sociology, Emory University

Introduction and Purpose

You are being asked to volunteer for a research study. This study examines important issues and experiences within medical school, and you have been asked to participate in this study because you are a medical school student. The purpose of this study is to investigate 1st, 2nd, and 3rd year medical students' experiences within medical school, and highlight potential mechanisms within the medical school curriculum that may lend to potential shifts medical students' attitudes and perceptions. Data will be gathered for this study for approximately one full year of medical school (Summer of 2007 through Spring of 2008), however your participation is only required at specific times during the school year. There will be approximately 400 subjects for this study including a majority of 1st, 2nd, and 3rd year medical students, as well as several professors of the medical school.

Procedures

Your participation in this study will consist of completing two surveys (taken at the beginning and end of the school year) and possibly one interview (if you volunteer to do so) with me, the researcher, which will be recorded only for audio purposes for transcription. Each survey will take approximately 15 minutes to complete. The interview will be conducted at a location and time of your choosing towards the end of the school year, and will last approximately one hour. Topics covered in the survey and interview will include your experiences within medical school, and your thoughts and perceptions regarding the current state of medical school curriculum and physician empathy among other things. I will also be observing medical school classes throughout the school year. During these observations sessions, I will not be involved in the class in any way, and you are not expected to speak or interact with me at all during class periods.

Voluntary Participation and Withdrawal

Participation in this research study is entirely voluntary. You have the right to refuse to be in this study. If you decide to be in the study and change your mind, you have the right drop out at any time. There is no penalty to you if you withdraw from the study. Also, you may skip any questions on the surveys and the interviews that you do not want to answer.

Confidentiality

Regarding the second round of surveys I will be requesting your name on the cover sheet of the survey. Your name will only be used so that I can match your second survey to your first survey and your unique study ID number. Once I have linked your first and second survey I will destroy the cover sheet. Your name and unique study ID numbers will be on a file which will be password protected. I, the researcher, will be the only person with the password to this file. Regarding the interviews, I will use a pseudonym

of your choice rather than your name on study records when I can. The records linking your name with the pseudonym will be stored on a file that will be password protected and I will be the only person with the password to this file. Agencies that make rules and policy about how research is done have the right to review these records. Those with the right to look at your study records include the Emory University Institutional Review Board. We will keep your records private to the extent of the law. Your name, unique study ID number, and other facts that might point to you will not appear without your permission when I present this study or publish its results. Upon transcription of the interviews, all recordings will be destroyed. After imputing data into a file, all surveys will be destroyed. You have a right to insist your real name be used instead of the pseudonym. Please note that if you discuss a specific experience or event during your medical training that may be used to identify you, I may include it in any papers or presentations that may result.

Risks and Benefits

There are no known physical, legal, or economic risks to you related to participation in this study. In the unlikely event that you find any of the questions personally uncomfortable, you may terminate the interview or refuse to answer the question. There are no known benefits to you, but your responses will increase understanding of medical students' experiences, and medical school curriculum.

Contact Persons

If you have questions about this study, please contact Barret Michalec by phone (404-272-8140) or by email (bmichal@emory.edu). You may also contact my faculty advisor Dr. Corey Keyes (email: ckeyes@emory.edu). If you have questions or concerns about your rights as a participant in this research study, you may contact Dr. Colleen Di Iorio, Chair of the Emory University Institutional Review Board at 404-712-0720 or IRB@emory.edu.

Please take a copy of this consent form to keep. If you are willing to volunteer for this research, please sign below.

_____	_____	_____
Signature of Study Participant	Date	Time
_____	_____	
Printed Name of Study Participant	Chosen Pseudonym	
_____	_____	_____
Signature of Barret Michalec Investigator and Interviewer	Date	Time

APPENDIX C: Interview Guide for Students

Do you feel that it is important for Doctors to understand the emotional state of their patients?
Why/Why not?
Do you feel that Doctors who understand the emotional state of their patients are better doctors than those who do not?

Do you feel that medical school curriculum should address the issue of physician empathy?
Why/Why not?
In what manners should it be addressed?

Do you feel that the medical school curriculum adequately addresses the issue of physician empathy?
How do you think it does or does not?
Would you suggest any changes in the current medical school curriculum?
How do particular courses address this issue?

Do you think it is important to learn how to interpret and understand the emotional states of patients?
Why/Why not?

In comparison to the biomedical and technical aspects of medical training, how important are the social aspects of medicine to you? (Such as the emotional states and even cultural background of patients)

What aspects of medical training do you feel may have an impact on medical students' empathy?
What is it about these aspects of training that cause this impact?

Why did you choose to enter medical school?
Are these still the reasons you want to be a doctor?

What do you think constitutes good quality patient care?
Do these elements of "good treatment" differ if dealing with a patient with an acute or chronic ailment?

What are some of the most difficult things you have faced and are currently facing as a medical student?
Why did/do you find these things difficult?

Can you describe any situations where you have witnessed examples of doctors exhibiting empathic behavior or behavior that was very non-empathic towards a patient?
What are your thoughts regarding these situations?
Have they influenced you in any way?

Have you experienced certain events that you feel have had an impact on your learning and/or training to be a doctor?
Please describe these events
In what ways do you feel these events influenced you?
Do you feel that these events have had similar impacts on your fellow medical students? Why/Why not?

What do you feel has been the most influential event in your medical training thus far? In what ways was it influential?

What do you think will be the hardest thing you will face as a practicing physician?

APPENDIX D: Interview Guide for Faculty

Why do you feel there was a need for a new curriculum?

What part did you play in the construction of the new curriculum?

What are some of the drawbacks to the new curriculum?

What do you feel are the best aspects of the new curriculum?

Why is there stronger emphasis on professionalism and patient-centered care in the new curriculum as compared to the traditional curriculum?

Why did you decide to make the new curriculum pass/fail?

What are your hopes for the new curriculum in terms of student outcomes?

Do you think the new curriculum will have a negative impact on students' Step 1 scores?

Would you consider the new curriculum a "living organism"?
What do you think will be the next steps?
Why?