Chapter 14
Parting Thoughts: A Systemic Paradigm of Empathy in Patient Care and Future Directions

Everything in the system is dependent on the previous state of the system.

—(Robert Lilienfeld, 1978, p. 14)

By becoming more and more aware of our roles in patient–doctor relationship—i.e., of our side-effects as drugs—our therapeutic efficiency will grow apace.

—(Michael Balint, 1957, p. 688)

Abstract

- Empathy in health professions education and patient care is viewed from a broader and more comprehensive perspective of systems theory.
- In a systemic paradigm of empathy in patient care, the contributions of major subsets of the system (e.g., clinician-related, nonclinician-related, social learning, and education) and their related elements to clinical encounters that lead to functional or dysfunctional system outcomes are discussed.
- An agenda for future research is outlined which includes: (1) exploration of additional components of empathy in the context of health professions education and patient care; (2) the investigation of additional variables that are beneficial or detrimental to empathy in patient care; (3) consideration of empathy as a criterion for admissions, selection, and employment; (4) the study of empathy as a predictor of career choice, academic and professional success; (5) the development and evaluation of approaches to enhance and sustain empathy in health professions education and patient care; (6) development of approaches to maximize empathy and regulate sympathy; (7) the development of national norm tables and cutoff scores to identify JSE high and low scorers; (8) consideration of patients' and peers' perspectives in outcomes of empathy research; and (9) further explorations of neurological underpinnings of empathy.
- It is suggested that implementation of remedies for enhancing and sustaining empathy is a mandate that must be acted upon, not only by academic medical centers but by all other educational institutions.

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Introduction

Empathy is an attribute that is distributed unevenly in the population. Human beings are not created equal with regard to their capacity for empathy. It is a gift bestowed in abundance on some and in only meager amounts on others. It is an endowment that can grow like a tree if the conditions are right. In this book, we embarked on a journey to find out why people differ with respect to their capacity to form empathic connections, how capacity for empathy is developed, how empathy can be quantified in the context of health professions education and patient care, and what are the correlates and clinical outcomes of empathy.

Now that we have come so far, and are approaching the final destination of our journey, I would like to reflect on what I have said so far. We embarked on this journey without even knowing the terrain we hoped to discover. Starting with the confusion reflected in research on the conceptualization and measurement of empathy, we attempted to achieve a better vision by resolving the confusion. We visited empathy's historical roots, developmental trajectories, psychosocial connections, and other related factors along the terrain. In passing along these paths, we learned about the antecedents, development, measurement, and consequences of empathic engagement in the context of health professions education and patient care. Many other terrains remain to be explored, however.

An undefined concept can never be measured, and a well-defined concept is half-measured! On the basis of the premise that research findings are vulnerable to serious challenge when the definition of the phenomenon under study is unclear, I offered a definition of empathy in the context of patient care (Chap. 6) primarily as a cognitive (as opposed to an emotional) attribute. Although I do not expect this conceptual characterization to remain unchallenged, let us hope that it can help, to some extent, to resolve the long-standing and unsettled debate regarding the conceptualization and definition of empathy that has always haunted empathy research.

The concept of empathy as having both cognitive and emotional components, adopted uncritically from social psychology by educators in the health professions, fits poorly with the clinical reality in clinician–patient encounters (Morse et al., 1992). The golden principle of patient care, "Above all, do not harm" (*primum non nocere*), rules out intense emotional engagement between clinician and patient that may jeopardize the outcomes of patient care. In studying empathy in psychology in the context of prosocial behavior, emotions can often facilitate, rather than jeopardize, the positive outcomes. However, as I described in Chaps. 1 and 6, in medical and surgical treatment, emotions must be curbed to maintain objectivity. No wonder that regulation of emotions in patient care was strongly recommended by Sir William Osler (1932) who advised "In the physician or surgeon no quality takes rank with imperturbability [which] means coolness and presence of mind under all circumstances and the physician who has the misfortune to be without it loses rapidly the confidence of his patient." (pp. 3–4). Thus, to achieve optimal patient outcomes, empathy in the context of patient care should be guided primarily by cognition rather than emotion.

Without a distinction between cognition and emotion, we will be wrestling forever with the challenge of how to separate the two in the context of patient care.

With that in mind, we also need to recognize that clinicians cannot remain completely emotionless when dealing with their patients. As part of human nature, emotions always play a role in any kind of human relationship. The challenging issue that remains to be explored is the extent to which emotions would be beneficial and to determine the point from which emotions become detrimental to patient outcomes (see Chaps. 1 and 6).

To avoid more confusion on conceptualization of empathy and sympathy I have used alternative words which are commonly used in empathy literature, namely cognitive empathy (sometimes also recognized as "clinical empathy" in the context of patient care), and emotional (or affective) empathy (synonymous to sympathy). In the definition of empathy in the context of patient care, I placed the emphasis on "understanding" patient's pain, suffering, experiences, and concerns. In the definition of emotional empathy (akin to sympathy), I placed the emphasis on "feeling" of patient's pain and suffering. This distinction, described in details in Chaps. 1, 3, and 6 can help us to clarify, to some extent, the ambiguity associated with the terms, and their respective consequences in patient care, as well as in search for their neurological underpinnings (Chap. 13).

A complex concept, such as empathy, cannot be the subject of scientific inquiries in the absence of an instrument that produces quantifiable results. An instrument intended to measure empathy in patient care cannot pass the litmus test of face and content validity unless its contents are not only consistent with its definition, but also relevant to the context of patient care. In addition, psychometric evidence must provide convincing support for the validity and reliability of the instrument. Let us hope that the Jefferson Scale of Empathy (JSE), the instrument described in Chap. 7, can help us resolve the measurement issues that have caused the uncertainty and have impeded empirical scrutiny of empathy in medical and other health professions education and patient care research.

Complex human attributes are not isolated entities; they always function in relation to other factors. As we learned in previous chapters, empathy is a multifaceted attribute that is deeply rooted in human evolution; it has genetic traces and a long history of development from conception to grave. Furthermore, as was discussed earlier (Chap. 4), environmental, cultural, experiential, and educational factors contribute, independently and interactively, to the makeup of the attribute called empathy. More importantly, empathic engagement, or the lack of it, in the context of patient care can lead to virtually opposite clinical outcomes (Chap. 11).

Despite its deep evolutionary roots and genetic component, the capacity for empathy is amenable to change, positively or negatively, to some extent when the conditions are right or wrong. Therefore, as I discussed in Chap. 12, targeted educational programs, appropriate experiences, and environmental facilitators can enhance the capacity for empathy in health professionals-in-training and in-practice; and detrimental factors can erode it. Frequent reinforcements are also needed to sustain the enhanced orientation toward empathic engagement in patient care (Hojat, Axelrod, Spandorfer, & Mangione, 2013).

Viewed from a broader perspective, a complex concept such as empathy in patient care, requires a comprehensive model to depict its important elements, their

interactions, and their outcomes. For that purpose, we can turn to systems theory to present a heuristic paradigm of empathy in the context of patient care.

A Systemic Paradigm of Empathy in Patient Care

The developmental trajectories and outcomes of a complex concept, such as empathy in patient care, can be viewed from the vista of systems theory. According to Pollak (1976), a systemic approach is the professional way of dealing with complexity. A system is defined as a set of interrelated subsets, each with an array of elements, no subset of which is unrelated to any other subset, and each element within a subset is related directly or indirectly to every other element in the system (Ackoff & Emery, 1981). A system will be functional only when all its subsets and all the elements within and between subsets function properly; otherwise, the system will be dysfunctional. A functional system has a purpose. The systemic purpose of empathy in patient care is to enhance mutual understanding between clinician and patient so that the goal of positive and optimal patient outcomes can be achieved.

More than 40 years ago, Gordon Allport (1960) suggested that human personality must be treated as an open system that should be viewed with an open mind. Active systems are often considered to be open systems because they are dynamic and therefore capable of responding and adapting to changes in the environment (Siegel, 1999). The combined functions of the elements within each subset of the system and the interrelationships among subsets prompt the system to generate a totality, a *gestalt*, in which the whole is greater than the sum of its parts. To achieve a better understanding of the antecedents, development, measurement, and outcomes of empathy in patient care, it seems desirable to view the concept of empathy in patient care, its major subsets, and the elements within each subset as an open system.

A complete understanding of any system requires an understanding of the subsets within the system and the nature of their interacting elements. For example, as Bateson (1971) indicated, if the family is viewed as a complex system, then an effective intervention in the context of family therapy requires a complete understanding of all subsets and elements of the system, including the roles, responsibilities, interactions, and functions of all family members within the family structure.

Similarly, in the context of patient care, as described in Chaps. 4 and 8, the act of seeking help brings to the surface a need for connectedness that generates the energy to set the system of empathic engagement in motion. A clinician–patient encounter represents an open system in need of equilibrium brought about by the energy discharged in interpersonal connection. Achieving positive patient outcomes would indicate that the system is functional (i.e., a state of equilibrium), whereas negative patient outcomes would indicate that the system is dysfunctional (i.e., a state of disequilibrium). Empathic engagement in the clinician–patient relationship is the first step in maintaining systemic equilibrium. Figure 14.1 depicts a systemic paradigm of empathy in the context of patient care. It illustrates the major subsets of the system and the major elements within each subset that ultimately determine the functional or dysfunctional outcome of the system.

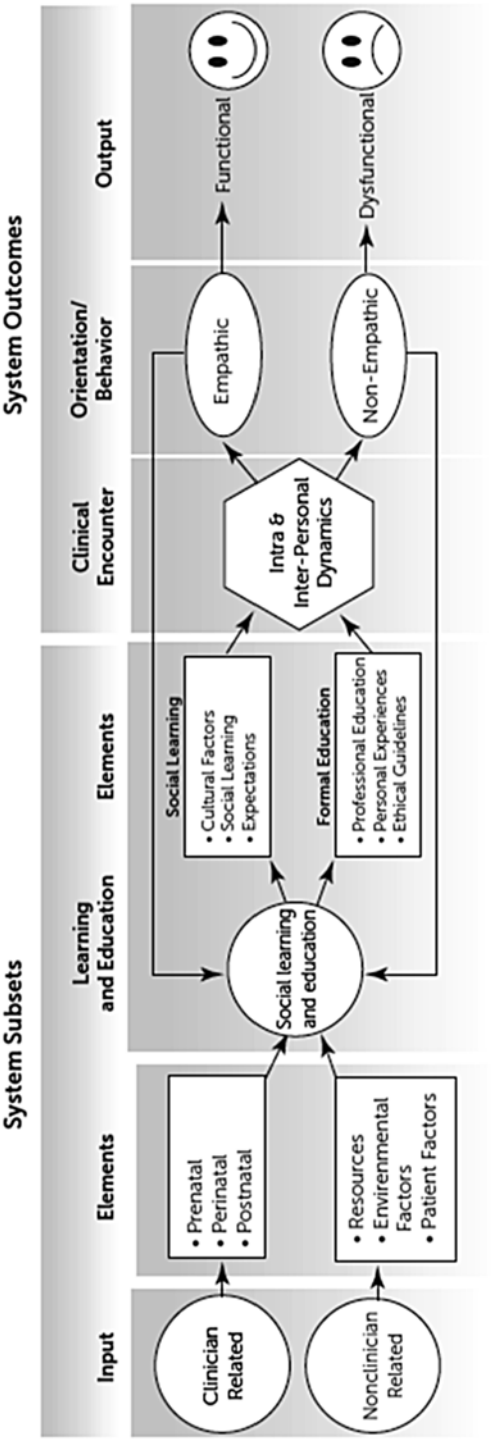

Fig. 14.1 A systemic paradigm of empathy in the context of health professions education and patient care

Major Subsets of the System

Let us elaborate briefly on the paradigm depicted in Fig. 14.1. Assuming that empathy in patient care resembles an open and purposeful system (i.e., a system that is amenable to change for the purpose of positive patient outcomes), the system would be set in motion by two interacting subsets: a clinician-related subset and a nonclinician-related subset (depicted on the left side of the figure as the entry to the model). Social learning and education are other subsets in the system.

The Clinician-Related Subset

This subset consists mainly of elements related to the clinician's personal qualities, which are offshoots of evolutionary, genetic, and constitutional factors (prenatal elements); events during childbirth (perinatal elements) that can contribute to later physical, mental, and social development; and such factors as the early rearing environment, quality of attachment experiences with the primary caregiver, and family environment (postnatal elements) which play significant roles in personality development. These elements, described in Chaps. 3 and 4, are considered to be the bedrock on which a person's capacity for empathy is built.

The Nonclinician-Related Subset

According to Kurt Lewin (1936), manifestations of behavior are a function of personal qualities, environmental demands, and situational factors. In a paradigm of physicians' performance, Gonnella, Hojat, Erdmann, and Veloski (1993b) proposed that in addition to clinician's knowledge, clinical-procedural skills, and personal qualities, other factors that are not related to the clinician and often are not under the clinician's control contribute to patient outcomes. Hence, the term "nonclinician-related subset." The elements of this subset have often been ignored in evaluations of outcomes of health profession education, appraisal of clinicians' performance, and the assessments of patient outcomes. These elements include the availability of (a) human resources, such as technical and professional assistance, and teamwork; (b) technical resources, such as diagnostic and treatment facilities, surgical equipments, and availability of laboratory tests; (c) environmental facilitators, such as physical facilities and facilitating rules and regulations formulated by health care institutions, health insurance agencies, and governmental authorities; and (d) patient factors, such as personality, cultural values, attitudes, and lifestyle; willingness to seek timely help; the severity of the disease, and adherence to preventive guidelines and treatment regimens.

The Social Learning and Educational Subsets

The social learning subset consists mainly of elements related to cultural and social norms and values (e.g., ascribed social roles and modes of social behavior) and expectations (e.g., belief in a supernatural power, in the health care system, in health care providers, and in optimistic or pessimistic expectation of outcomes).

The education subset consists of an array of elements related to formal education and training experiences, such as professional education (e.g., undergraduate, graduate, and continuing education), personal educational experiences (e.g., influence of role models, observations, and clinical experiences, factors in the so called "hidden curriculum," Hafferty, 1998), and professional ethics of conduct (e.g., ethical guidelines of professional organizations, such as the American Medical Association and the American Psychological Association). Targeted educational programs and educational experiences designed to enhance the capacity for empathy (see Chap. 12) also are among the elements of this subset.

The Clinical Encounter

Armed or disarmed with the elements of the aforementioned subsets, a clinician encounters a patient who is in a state of disequilibrium and is reaching out to someone for help. The system of empathic engagement begins to form. The intrapersonal and interpersonal dynamics described in Chap. 8 are triggered into operation during exchanges between the clinician and the patient. To form a functional system, the clinician should be armed with the skills needed to understand the patient's concerns and be motivated (an intrapersonal factor) to communicate this understanding to the patient (an interpersonal factor) with a genuine intention to help. As depicted in Fig. 14.1, all elements of clinician-related, nonclinician-related, social learning, and education subsets come together in clinical encounters that can lead to either empathic or nonempathic clinician–patient engagements that, in turn, ultimately determine patient outcomes that will be positive in a functional system or negative in a dysfunctional system.

Outcomes

The interaction between intrapersonal and interpersonal dynamics described in Chap. 8 brings about cognitive processes that can lead to an orientation or a behavior. When the orientation or behavior is empathic, the likelihood of a positive patient outcome will increase. In this case, the system will achieve its purpose, and we can conclude that the system is functional. However, if the intrapersonal and interpersonal dynamics resting on the clinician-related, nonclinician-related, social

learning, and formal educational subsets lead to a nonempathic orientation or behavior, the likelihood of a positive patient outcome will be drastically reduced. In this case, the system will fail to achieve its purpose, and we can conclude that the system is dysfunctional.

However, I must emphasize that because other unpredicted elements may intervene, the pathway to empathic engagement between clinician and patient is more complicated than the model depicted in Fig. 14.1. Nonetheless, I hope that the systemic view of empathy just described can serve as a heuristic paradigm illustrating the major components that set the system in motion and show the complexity of empathy in the context of patient care.

An Agenda for Future Research

Training humane clinicians has long been a concern of education in the health professions. Because of general societal changes that are taking place, particularly in the industrialized world, there is directly or indirectly a weakening occurring of the power of important social support systems (see Chap. 2). Also, due to the changes that are evolving in the health care system and leading toward detached care (see Chap. 12), research on factors that contribute to the understanding and enhancement of empathy in patient care is now more important and timely than ever before.

Research on empathy in patient care deserves serious attention, not only because of its importance in training humane clinicians, but also because of its implications for the selection and education of clinicians. Empirical research on empathy in patient care is still in its infancy; therefore, much more research is needed to enhance our understanding of empathy in patient care. The questions addressed below present only a few of the areas that need to be included in the future research on empathy in patient care.

What Additional Constructs Are Involved in Empathy?

According to the findings determined by our factor analytic studies (Hojat, Gonnella, Nasca, Mangione et al., 2002; Hojat & LaNoue, 2014) and others (see Appendix A), empathy in patient care is a multidimensional concept involving at least three factors: "perspective taking," "compassionate care," and "standing in the patient's shoes." Similar factors that emerged in a factor-analytic study in which the JSE was administered to dental students (Sherman & Cramer, 2005), and in another study with a large sample of medical students in Mexico (Alcorta-Garza, Gonzalez-Guerrero, Tavitas-Herrera, Rodrigues-Lara, & Hojat, 2005) as well as studies by others in the USA and abroad (see Appendix A) have added to our confidence concerning the stability of the factors underlying empathy in different groups of health professionals and in different countries. However, we need more evidence to

support the factor structure of empathy in groups of students and practitioners in the various health professions (e.g., nursing, dietetics, psychology, and social work).

It is important to bear in mind that the factors extracted in factor analytic studies obviously are a function of the contents and number of the items that are included in the measuring instruments. Therefore, the three underlying factors of empathy identified by the JSE reflect the contents and intercorrelations of the 20 items included in the instrument. Adding a sufficient number of items to address other factors, such as for example sociability, trust, and ethics could result in a scale with a different underlying factor structure. More important, whether the current factor structure of the JSE saturates the scale to the point where additional factors cannot account for more than a negligible amount of the variance or whether additional factors would contribute significantly to the scale's incremental validity (i.e., increase its criterion-related and predictive validity) needs to be addressed in future research.

What Additional Variables Are Associated with Empathy?

As described in Chap. 9, research has shown that empathy is linked to a number of demographic and psychosocial variables, indicators of clinical competence, and career interests. Evidence also suggests that empathic engagement in patient care is associated with physicians' diagnostic accuracy and patients' adherence to treatment, increased satisfaction with their health care providers, a reduced tendency to file malpractice claims, and more importantly to patient outcomes (Chap. 11). Also, as was described in Chaps. 4 and 8 and depicted in Fig. 14.1, family environment, early attachment relationships, human and material resources, and environmental, social, and cultural factors contribute to the development and manifestation of empathy in patient care situations.

It is important to study empirically and, ideally in prospective longitudinal research designs, the relative contribution of early experiences, the quality of early and late attachment relationships, and social, cultural, educational, and other factors that can significantly predict empathy scores. This line of research would have important implications for the development of programs to retain and enhance the capacity for empathy.

Empathy also was found to predict ratings of clinical competence among medical students and physicians (Chap. 9). However, further research is needed to address other indicators of academic and professional performance that are significantly associated with empathy scores and patient outcomes. It is desirable to use prospective studies to examine the relationship between empathy scores and different measures of academic and professional success or failure (e.g., academic dropout and dismissal, cheating and unethical behavior, disciplinary action against health care providers) at different levels of health professions education.

Furthermore, the findings on gender differences in empathy scores (Chap. 10) call for more empirical research to discern whether the differences are more likely

to be related to "intrinsic" gender characteristics or to "extrinsic" sex-role socialization and their interactions. Such research is needed because determining the proportion of the variance in empathy scores that is accounted for by intrinsic or extrinsic factors in the analyses of gender differences is an important issue. The answer would potentially have different implications in relation to the selection and education of health professionals.

Further investigations also are needed on the unique contribution of empathy to accurate diagnoses, improved compliance, better patient satisfaction, reduced malpractice claims (Chap. 11), and other tangible clinical outcomes regarding control of chronic diseases, such as essential hypertension, diabetes mellitus, and treatment of other chronic and acute illnesses. These outcomes are important to be studied, not only because of their impact on mortality and morbidity, but also because of the economic impact on the patients, their families, and society at large. The extent of the short- and long-term impact of empathy enhancement programs for health professions students and practitioners, and empathic engagement in clinical encounters needs to be empirically investigated.

It is also highly desirable, although complicated, to examine the relative contribution of the following factors to the capacity for empathy, as reflected in empathy scores: genetic factors; quality of early attachment relationships; early life experiences (e.g., parental divorce, death in the family, maternal employment, day care experiences); later personal life experiences (e.g., traumatic events, peer relationships, marital relationships, role models); environmental and social factors (e.g., sociopolitical conditions, cultural norms, ascribed roles); cultural and cross-cultural factors, particularly among immigrants; formal education; and the interactions among these and other factors. It is also interesting to explore if the so called "unethical" behavior during medical school (Papadakis et al., 2005) is significantly associated with a lower level of capacity for empathy.

Gonnella and colleagues (Gonnella & Hojat, 2001; Gonnella, Hojat, Erdmann, & Veloski, 1993a, 1993b; Hojat, Erdmann, & Gonnella, 2014) proposed that to achieve optimal patient outcomes, a physician must perform three roles: clinician, educator, and resource manager. Thus, determining the extent to which each of these roles is associated more with capacity for empathy is also important. Furthermore, it would be desirable to investigate the relative contribution of different factors of empathy (e.g., perspective taking, compassionate care, and standing in the patient's shoes) to each of the three roles of a physician as well as to academic and professional success.

Should Empathy Be Considered for Admissions Purposes?

Almost all North American medical schools place great emphasis on applicants' undergraduate grade-point averages and scores on the Medical College Admission Test (MCAT) for screening purposes. Although grade-point averages and MCAT scores are relatively good predictors of a student's academic performance in the

early years of medical school (sometimes described as the pre-clinical or pre-clerkship phase of medical school education), they have poor predictive validity regarding a student's performance in the later years of medical school (sometimes described as the clinical phase of medical school education) (Glaser, Hojat, Veloski, Blacklow, & Goepp, 2004; Hojat et al., 2014; Hojat, Erdmann, et al., 2000; Hojat, Veloski, & Zeleznik, 1985). The poor long-term predictive validity of the MCAT is not surprising because the test was developed to predict success in the preclinical component of medical education when attrition is most likely in the US medical schools. In addition, because of the "restriction of the range" issue as a result of attrition in the first two years, the predictive validity coefficients cannot capture the true relationships with indicators of clinical competence in later years of medical school.

It is obvious that the most qualified candidates who wish to embark on a journey to become physicians are those who in addition to medical knowledge and procedural skills possess personal qualities that can generate trust, which ultimately leads to optimal clinical outcomes. However, there is a lingering doubt among medical education leaders about the role of personal qualities in academic success and clinical outcomes. In an article entitled "Building a better physician" Kaplan, Satterfield, and Kington (2012), suggested that just as understanding of biology and chemistry needs some basic background which is often assessed in admission tests to medical schools, we also need to assess candidates' understanding of social and behavioral sciences in applicants and also improve such understanding as part of professional development of physicians-in-training. It is interesting to notice that the Association of American Medical Colleges (AAMC) which sponsors the MCAT, has only recently recognized the importance of the role of psychosocial factors in health and illness. Thus, the AAMC included a new section to the MCAT (starting in 2015) to assess applicants' understanding of psychosocial factors in health and illness.

In addition to understanding psychosocial factors in health and illness, it is important to assess the possession of psychosocial qualities which are pertinent to patient care (Hojat et al., 2014). Research shows that the contribution of such qualities, including empathy, to performance assessments is greater in the clinical than preclinical phase of medical education (for a review see Hojat et al., 2014, also see Chap. 7). Some may argue that personal qualities can be easily assessed from admission interviews, letters of recommendation, essays, and personal statements. However, there is inadequate evidence in support of the validity of such conventional approaches, Some of their shortcomings are described below.

Admissions Interview

Face-to-face interviews are required as part of the admission process in almost all medical schools and residency programs in the USA and Canada. A great majority of these interviews are unstructured with no uniform questions and no standard assessment procedures. It is believed that interviews provide an opportunity to

include the human touch in decision-making and that they help in assessing personal qualities (Albanese, Snow, Skochelak, Huggett, & Farrell, 2003). It is claimed that the admissions interviews provide important information in selecting potential students (Eddins-Folensbee, Harris, Miller-Wasik, & Thompson, 2012; Puryear & Lewis, 1981). However, convincing empirical evidence is not yet available to confirm the validity and reliability of admission interviews (Ferguson, James, & Madeley, 2002; Kanter, 2012). Compounding this issue is the fact that medical students themselves, without any training, sometimes perform interviews with new applicants in order to supplement the staff and faculty resources needed for interviewing a large number of applicants. Interestingly, no significant difference has been observed between faculty and students interview ratings (Eddins-Folensbee et al., 2012; Elam & Johnson, 1992; Gelmann & Stewart, 1975).

Although the purpose of interviewing candidates for residency programs is to assess their humanistic qualities, attitudes, motivation, and other personal qualities, guidelines for assessing such qualities are often vague or nonexistent. Interviews are often not structured to assess those human qualities, or the interviewers are not specifically trained to detect them (Hojat et al., 2014). Information on humanistic qualities of candidates is often available from evaluations of students' behavior in clinical clerkships. Letters of evaluation that medical school deans write for graduates not only should summarize the students' academic attainment but also should include assessments of graduates' humanistic qualities when dealing with patients.

Reliance on interviews conducted by untrained staff or students can jeopardize the validity of the selection process by giving advantage to those applicants who play a better role in presenting themselves well in interview settings. The unstructured interviews by untrained interviewers with no standard scoring guidelines may predict nothing other than an applicant's skills in role playing (Musson, 2009). No wonder that the predictive validity of admission interviews has been reported to be disappointingly low (Walton, 1987). It is interesting to note that despite all of the aforementioned limitations, in a national survey with residency program directors in the USA, an applicant's interview was considered as the most important selection criterion (Wagoner, Suriano, & Stoner, 1986). The use of interviews in the undergraduate and graduate selection processes provides a unique opportunity to talk with applicants and may be helpful in observing a candidate's reaction to questions, but uncertainties remain open regarding the validity and practical outcomes of admission interviews (Antonovsky, Anson, & Bernstein, 1979; Green, Peters, & Webster, 1991; Hobfolls & Benor, 1981).

More information about applicants' interpersonal skills and capacity for empathy can be probed during admissions interviews once interviewers are trained todetectassess these qualities. The issue of whether undergraduate elective courses or majors could predict capacity for empathy also needs to be empirically addressed. In addition, the issue of whether training those who interview medical school applicants can lead to the selection of more empathic students needs to be studied.

Letters of Recommendation

Most medical schools in North America require letters of recommendation to be submitted by those who are fairly familiar with the academic performance and personal qualities of the applicants. Letters of evaluation written by medical school deans also play a great role in the selection of candidates for residency. There is no convincing empirical evidence in support of the predictive validity of letters of recommendation in medical schools. In our own empirical study using a multivariate statistical model, we found that the level of recommendation contained in the letters written by undergraduate premedical education advisors did not contribute significantly to the prediction of academic performance in medical school beyond the grades obtained prior to medical school (Zeleznik, Hojat, & Veloski, 1983). Furthermore, it has been reported that letters of recommendation may be biased and flattering with no substantial empirical link to later performance (Walton, 1987). Although one purpose of letters of recommendation is to describe personal qualities of the applicant, our research confirmed that too often these letters fail to add anything about applicant's personality beyond a summary of the student's academic performance (Hojat et al., 2014; Zeleznik et al., 1983). Those who prepare recommendation letters should be advised to include information about applicant's interpersonal skills in the letter.

Personal Statements, Letters of Intent, and Essay

Some medical schools require applicants to write an essay, letter of intent, or some personal statements about, for example, their interest in medicine, career goals, and future plans. There are very few studies on the predictive value of essays or personal statements. In one study, the content of candidates' personal statements was analyzed, and no evidence was found to support its predictive validity (cited in Ferguson et al., 2002). Typically, letters of intent or essays submitted by applicants are evaluated by untrained readers and are assessed on informal criteria (Musson, 2009). Even more questionable is whether candidates themselves, without any help, write the statements, essays, and letters of intent (Musson, 2009). Because of the aforementioned shortcomings, Haque and Waytz (2012) suggest that one appropriate approach for the assessment of personality of physicians-in-training is to administer psychometrically sound instruments for assessing personal qualities pertinent to patient care, including empathy.

Kupfer, Drew, Curtis, and Rubinstein (1978) reported that considering personal qualities, including empathy, when deciding which applicants should be admitted to medical school would lead to excellence in the practice of medicine. Streit-Forest (1982) recommended that once a significant relationship has been established between personal qualities and indicators of academic and professional success, the personal qualities of applicants to medical school should be included among the criteria for admission. In longitudinal studies of medical students, my colleagues and we have shown that measures of personal qualities (e.g., sociability, satisfactory

interpersonal relationships, and self-esteem) and measures of academic aptitude (e.g., grade-point averages, and MCAT scores) can equally predict performance measures in the first two years of medical school. However, the measures of personal qualities could predict ratings of clinical performance in the third year of medical school more accurately than grade-point averages or MCAT scores (Hojat et al., 1993; Hojat, Glaser, & Veloski, 1996; Hojat, Vogel, Zeleznik, & Borenstein, 1988). In other words, incremental validity can be improved significantly by including indicators of interpersonal skills and measures of personal qualities in multiple regression models (Hojat et al., 1988, 1993; Zeleznik et al., 1988).

Our research on empathy (using the JSE) has shown that empathy scores are significantly associated with ratings of clinical competence in medical school (Hojat, Gonnella, Mangione, et al., 2002) and with tangible clinical outcomes in the practice of medicine (Del Canale et al., 2012; Hojat, Louis, Markham, et al., 2011). To my knowledge, no empirical study on grade point averages prior to medical school or the MCAT is available to show that science attainment could predict patient outcomes and clinical competence. There is, however, one study in which we showed that the assessments of MCAT's writing samples could significantly predict a student's clinical competence in medical school (Hojat, Erdmann, et al., 2000).

Stern, Frohna, and Gruppen (2005) reported that none of the data on academic performance that are often used for admissions to medical schools could predict medical students' professional behavior. However, in that study, medical students' unprofessional behavior observed by faculty, clerkship directors, and fellow students could be predicted by students' failure to complete required course evaluations and to report immunization compliance. In another study by Papadakis et al. (2005) it was found that disciplinary action taken against physicians by state medical boards was strongly associated with unprofessional behavior recorded in medical school. These findings support the notion that indicators of personal qualities can predict professional behavior beyond measures of academic attainment. Essential humanistic qualities, such as empathy, elude the measures of undergraduate academic achievement that are commonly used when selecting applicants for admission to medical schools.

Undergraduate academic institutions do not routinely provide information about medical school applicants' interpersonal skills or other personal qualities relevant to the capacity for empathy. However, an examination of undergraduate elective courses or baccalaureate majors can provide clues about applicants' interests in humanities and literature which are associated with the capacity for empathy (Chap. 12).

Graduate medical education programs often consider indicators of academic attainment in medical school and scores on medical licensing examinations, such as Step 1 (and Step 2) of the United States Medical Licensing Examinations (formerly the National Board of Medical Examiners), as important determinants in the selection of residents. A residency candidate's personal qualities are often either overlooked or ignored completely.

Jamison and Johnson (1975) suggested that the public would be better served if volunteers for public services were selected on the basis of their capacity for

empathy. Because medicine is a public service profession and the professional behavior of physicians includes compassionate care and empathy, should empathy be a criterion for selection of medical students and residents, or even for employment of physicians? This question deserves serious research attention. If further research provides convincing empirical evidence that incorporating empathy into the criteria for selecting applicants to medical schools and residency programs can lead to the advancement of professionalism in medicine, we should set aside our hesitation and include important pertinent personal qualities, such as empathy, when selecting our future health care work force. One positive result could be that health care professionals might regain the respect that has been fading away along with the changes taking place in society in general and in the health care system in particular. Meanwhile, we also need to study the long-term consequences of using empathy as a criterion for selecting applicants to medical schools and residency programs.

Does Empathy Predict Career Choice?

Findings on differences in empathy among physicians in various specialties (Chap. 9) call for further research. The question of whether health professionals choose specific specialties because of differences in their capacity for empathy prior to their professional education or because of effects of their professional education, needs further investigation. The answer to the question will have implications for selection of students and trainees, career counseling, and curriculum development in academic health centers. If empathy predicts career choice and interest in particular specialties, any attempt to select empathic candidates or to enhance empathy could potentially influence the distribution of physicians and other health professionals in the different specialties.

How Can Empathy Be Enhanced and Sustained During Professional Education?

The finding that in the absence of dedicated educational programs, empathy among medical students and residents tends to decline as they progress through medical education (Bellini et al., 2002, 2005; Hojat et al., 2009, 2004, also see Appendix A) raises serious concerns. Consequently, prospective research is needed to investigate whether empathy scores erode *systematically* or *randomly* during the course of medical education. It also is important to determine what factors would contribute to the systematic decline of, or variation in empathy in different individuals at different levels of health profession education. In addition, it is important to determine which factors may be detrimental and which factors may be beneficial to all

individuals. If the detrimental and beneficial factors do not affect all individuals equally, determining what individual characteristics or experiences account for the variation would be an important research goal.

Finally, more research is needed to identify the most appropriate methods or the best combinations of approaches for enhancing empathy among students and practitioners (e.g., development of interpersonal skills, exposure to hospitalization experiences, role playing, exposure to role models, specifically targeted video or audio materials, workshops on perspective taking, theatrical approaches, study of literature and the arts, and improvement of narrative skills, etc.; see Chap. 12). Furthermore, both formative and summative evaluations are needed to confirm that programs developed to enhance empathy have achieved their stated goals and that both the short- and long-term effects of such programs have been carefully evaluated.

The unfortunate erosion of empathy reported among the health professionals in-training, and in-practice, raised an alarming red flag that must not be ignored in future research. What are the underlying reasons for this transformation of turning some of the enthusiastic students into cold-hearted practitioners? Is it related to the "Lucifer effect" that Zimbardo (2007) coined (see Chap. 8) in which good-hearted people turn bad as a result of environmental conditions, role expectations, arrogance, sense of belonging to a privileged group, etc.? Added to the seriousness of the erosion of empathy issue is the findings of a meta-analytic study involving 72 samples of American college students including 13,737 participants, reporting that American college students' empathy had declined between 1979 and 2009 on Perspective Taking and Empathic Concern scales of the IRI (Konrath, O'Brien, & Hsing, 2011). The decline was most pronounced after year 2000. Empirical research is needed to explore reasons for these changes. Why is our young generation regressing rather than progressing in their capacity for empathy?

Should We Maximize Empathy and Regulate Sympathy in Patient Care?

Because of their different consequences in patient care, throughout this book, I tried to make a distinction between cognitive empathy (or clinical empathy in the context of patient care) and emotional empathy (or sympathy in the layman's term). Some may argue that the findings on the decline in empathy during health professions education and the practice of patient care could be a result of psychological defense mechanisms to adjust to the emotional drain which is involved in taking care of seriously ill patients. Well, this argument may be true to harden hearts against emotional (not cognitive) empathy. However, I would use a different term: "emotional regulation" (rather than "decline") for such an adjustment in emotional empathy(sympathy). Research indicates that those who are able to regulate their emotions are more likely to form empathic engagement and also act in a heightened moral fashion (Decety & Lamm, 2006; Eisenberg et al., 1994).

In an fMRI study, physicians who practice acupuncture were compared to others while observing animated visual stimuli showing needles being inserted into mouth region, hands and feet of patients (Cheng et al., 2007). Experts in acupuncture knew that such procedure could be painful to their patient, and had learned in their training to regulate their emotions in order not to be distressed and overwhelmed with emotional exhaustion. Thus, as expected, in these acupuncture experts, brain regions involved in emotional aspect of pain processing (e.g., anterior insula and anterior cingulated cortex) did not show increased activation. Instead brain regions associated with emotional regulation and cognitive control (e.g., the medial and dorsolateral prefrontal cortices) showed activation in the expert physicians (Cheng et al., 2007). The control participants, compared to expert physicians showed significantly higher pain intensity, activation of the pain matrix and unpleasant ratings when watching body parts being pricked by needles as opposed to being touched by a Q-tip. Investigators also observed an enhanced self–other distinction in the expert physicians by activation of the right temporoparietal junction, which is known to play a role in self–other differentiation, metacognition, and the theory on mind (Cheng et al., 2007). These findings support the notion that professional training experiences can improve emotional regulation which helps to prevent burnout and emotional exhaustion.

A decline in cognitive empathy (or clinical empathy) is never justifiable and can never be beneficial to either clinician or patient. Thus, the agenda for future research should include studying approaches not only to enhance (or maximize) and sustain cognitive empathy, but also regulate (or optimize) emotions (or emotional empathy) in health professions education and patient care.

Should We Respond to a Need for Norm Data and Cutoff Scores?

As the developers of the JSE, we have been frequently asked by potential national and international users about the availability of norm data and cutoff scores for identifying high and low scorers. For the development of national norm tables and determining cutoff scores, large and representative samples from the target populations are needed. By using a large sample of entering medical students ($n=2637$) who entered Sidney Kimmel (formerly Jefferson) Medical College at Thomas Jefferson University, we developed proxy norm tables and tentative cutoff scores for men and women matriculants separately (Hojat & Gonnella, 2015, also see Chap. 7). Obviously, data from one medical school cannot serve that purpose, instead large scale longitudinal studies are needed with national representative samples of medical and other health professions students, physicians and other practicing health professionals to develop national and international norm tables and cutoff scores by gender, specialties, and country to identify low and high JSE scorers for the purpose of assessments of professional development, admission, and employment.

Do Patients' Perspectives and Peers' Evaluations Contribute to Empathic Outcomes?

Optimal and suboptimal clinician–patient relationships cannot be studied if we fail to understand patients' expectations and perspectives regarding the empathy of their health care providers. In Chap. 11, I pointed out that a large majority of medical malpractice claims filed is the result of patients' negative views of the relationship with their health care providers. Thus, it is important to study clinical outcomes with respect not only to clinicians' self-reported empathy but also to patients' perceptions of their caregivers' empathy and to peers' evaluations of clinicians' empathy.

Furthermore, it is important to examine health care providers' specific behaviors, such as punctuality, sense of humor, nonverbal behavior, and verbal expressions that patients regard as significant determinants of an empathic engagement. The patients' perspectives are particularly important because one key concept in the definition of empathy was clinicians' ability to communicate their understanding to their patients (Chap. 6). Thus, future research should focus on the relationship among three sets of variables: (a) clinicians' self-reported empathy, (b) patients' expectations and perceptions of clinicians' empathy, and (c) peers' evaluations of clinicians' empathy. To enhance our understanding of factors that determine final outcomes of rendering care, the relative contribution of these variables to patient outcomes must be investigated.

What Are the Neurological Underpinnings of Cognitive and Emotional Empathy?

A better understanding of the neurobiological underpinnings of empathy will lead to improving empathy and preventing human abuse and neglect. Brain imaging experiments to find the roots of empathy are just flourishing which will soon shed light on the issues of enhancing and sustaining empathy, and on prevention and treatment of empathy deficit disorders. The discovery of mirror neurons that are activated in the brain when a person sees another person performing a goal-directed act or hears another person who is in distress (Carr, Iacoboni, Dubeau, Mazziotta, & Lenzi, 2003; Kohler et al., 2002) opens a new window for the examination of the neural mechanisms of empathy in human relationships (Chap. 13). With the technical advancements in functional brain imaging, it is now possible to observe and record the neurophysiological indicators of empathy. This exciting new discovery should prove to be extremely valuable in future research designed to identify the structural (neuroanatomical) and functional (neurophysiological) aspects of empathy in the human brain.

In addition, based on the studies cited in Chap. 13, both the limbic system and neocortex areas of the brain have often been implicated in neuroanatomical studies

of empathy. However, future research must make a distinction between clinical empathy (described in this book as cognitive empathy) and emotional empathy (or sympathy) and examine whether different areas of the brain are activated by empathic or sympathetic responses. As I suggested in Chap. 13, intuitively one can speculate that the neocortex is more likely to be implicated in cognitive empathy and the limbic system is more likely to be implicated in emotional empathy (sympathy), but this speculation needs further empirical verification.

Recapitulation

We embarked on a journey into the terrain of empathy with the hope of exploring the roads leading to empathy (antecedents) and the paths spreading from empathy (outcomes). Like the wings that evolved to allow birds to fly high in search of food or the long necks that evolved to allow giraffes to feed on leaves high on trees that other species could not reach, empathy, we learned, has evolutionary roots that sprouted for the purpose of survival.

Similarly, we learned that empathy—like hearing, vision, taste, and smell— has neurological and biophysiological underpinnings. Empathy, like human love, connects people more closely, reduces interpersonal space, and fulfills the human need for affiliation, support, and understanding. In the context of patient care, empathy is no longer a vague concept because an operational definition offered in this book has clarified its meaning, and it is no longer an abstract entity because it can be quantified with a valid and reliable instrument described in this book.

Empathy can increase altruistic, prosocial, and helping behaviors; reduce aggressive behavior; encourage avoidance of conflict; improve conflict management; and promote understanding (Larson & Yao, 2005). Medicine, which was considered by the public as one of the most highly respected professions of all, is losing ground (Thomas, 1985) partly because of the failure of medical education to train empathic doctors and partly due to the failure of some doctors to preserve their altruistic image (Schlesinger, 2002). At the turn of twentieth century, George Bernard Shaw equated the image of the medical profession to the faith in God by declaring that "We have not lost faith, but we have transferred if from God to the medical profession." This is no longer the case, given the current image of physicians held by public.

In the past few decades, profound changes in medical education and the health care systems, an imbalance in teaching the science and the art of medicine, unduly financial considerations to contain cost, increasing commercialization of medical care, health insurance policies formulated by nonmedical administrators, the emergence of "defensive" medicine, and loss of the human presence in caring for the patients by its replacement with computerized diagnostic and therapeutic technology have transformed the image of physicians from compassionate healers to technicians and interpreters of medical tests, and eroded the public's trust in medicine (Schlesinger, 2002). Perhaps medicine can regain some of its well-deserved reputation, and physicians can reclaim their altruistic image by greater attention to

the role of empathy in the selection, education, practice, and professional development of physicians (Hojat et al., 2014).

In the context of patient care, empathy can eliminate the constraints of the clinician–patient relationship. It can bridge the gap between givers and receivers of help and contribute to the physical, mental, and social well-being of both patient and clinician. Like height, weight, eye color, and type of hair, empathy varies among humans. However, a sense of unity can emerge from variation among human beings once empathic understanding prevails, once one can view the world from the other person's perspective, once one can stand in another person's shoes.

The following saying has been attributed to Albert Einstein: "A person starts to live when he (sic) can live outside himself." Empathic engagement takes a person outside of himself or herself and allows the person to hear others with the third ear and to view the world of others with the mind's eye. Empathic engagement brings unity from diversity, making all of us akin regardless of gender, age, race, culture, religion, or other divisive factors. So, that is why any attempt toward empathic understanding of a fellow human being is a step toward enhancing physical, mental, and social well-being of all in society. Thus, the lesson to be learned is that actual implementation of remedies for enhancement of empathy—not just declaration of their desirability—is a mandate that must be acted upon, not only by teachers and healers of human infirmity, but by all members of the human race for the sake of healing human ills unto eternity.