NARRATIVE: MEDICAL STUDENTS' EXPERIENCES AND EXPRESSIONS OF UNLIMITED LOVE TOWARD PATIENTS

Project Goals: To investigate the nature of, and factors determining, the capacity of medical students to experience, express, and sustain unlimited love toward patients

Specific Aims:
1) To demonstrate that 2nd and 3rd year medical students vary in their ability to express various aspects of unlimited love (UL) toward patients; and that this ability changes from the 2nd to the 3rd year of medical education.

2) To determine the relative contributions of selected personal, educational, and demographic variables to medical students' expression of UL.

3) To investigate the intercorrelations among various purported measures of core components of UL

4) To demonstrate that a brief, focused educational intervention can effectively increase medical students' expression of UL

Hypotheses Year 1:
1) Empathy and unlimited love (UL) will overall decrease over time, while patient-related dysphoria will overcall increase in the same period
2) Within the Internal Medicine Clerkship (IMC), empathy and UL will increase after exposure to ethics/humanities curriculum, while dysphoria will decrease
3) Empathy and UL are positively correlated with each other, and negatively correlated with dysphoria.
4) Positive correlates of empathy and UL include an array of variables, specifically:
a) Global spirituality and personal spiritual and self-reflective practices
b) Exposure to positive role-models
c) Volunteerism
d) Exposure to formal ethics and humanities curriculum
e) Female gender
f) Primary care specialty choice
g) Patient perceptions of student humanism
h) Clerkship evaluations of student professionalism, communication, and caring

5) Dysphoria is a negative correlate of each factor listed above.

6) Empathy and UL are highest among students who possess high degrees of global spirituality, when controlling for the effects of the positive correlates listed above.

Hypotheses Year 2:

1) Third year students who participate in the unlimited love intervention will demonstrate higher empathy and UL and lower dysphoria compared to their own baseline and to the comparison group.

2) Students who participate in the intervention will also receive higher patient ratings and clerkship evaluations than comparison students.

3) The findings from Year 1 are replicable in a new student cohort.

Background: Physician love for patients is a concept rarely mentioned in contemporary medical education circles, although the father of Western medicine, Hippocrates, defined love as the governing principle of medical practice. It is true that related notions, such as altruism, caring, and empathy, have recently generated renewed interest. The Medical School Objectives Project criteria for professionalism include altruism (1); while both research and clinical observation (2,3) attest to the importance of empathy in the doctor-patient relationship.

 Yet disturbing evidence suggests that exposure to medical education may actually decrease student communication (4) and empathy skills (5,6). Further, the pervasive assumption of medicine's informal curriculum (7,8) is that emotional connection with patients is risky and unprofessional. Although the occasional lone voice (9,10) reminds us that, in fact, healing occurs when people feel loved, love remains a neglected concept within medical education theories and pedagogy.

 The sociologist Pitirim Sorokin (11) regarded love as received energy, a partial reflection of divine love, suggesting a crucial link between one's sense of spirituality and one's ability to manifest unlimited love. Sorokin also discussed scalable parameters, providing encouragement for the possibility that even an ephemeral phenomenon such as unlimited love can be successfully measured. Elaborating on Sorokin's seven aspects of love, Post (12) points out that the concept is larger than most proxy terms, and identifies multiple dimensions, all of which have important implications for medical education.

 One problem in introducing the concept of UL to medical education is that, in the West at least, we tend to associate the term with particularistic feelings for specific individuals. However, the world's major religious/spiritual traditions offer a very different view of the nature and potential of love. Whether it is the *agape* of Christianity, the *metta* of Buddhism, the *bhakti* of Hinduism, the *jen* of Chinese traditions, or contemporary syntheses such as Sorokin's altruistic love, the idea is the same: the capacity to love is a skill which can be fostered by specific practices, even to the degree that it becomes nonexclusive, all embracing, unconditional, and unwavering (13,14). The implication for medical education is that this form of love can be extended not just to certain "likeable" patients, but to all patients.

 Student response to suffering presents another problem. Although one might expect the natural human response to be compassion and love, as the Dalai Lama observes, suffering often elicits hostility and anger. From a Western scientific perspective, Eisenberg's research (15) indicates that when people experience high levels of negative emotional arousal in reaction to others' distress, they become overaroused, find this aversive, and focus more on their own needs rather than on those of the suffering person. In contrast, individuals who can maintain their emotional reaction to others'

suffering at a tolerable level are able to exhibit sympathy and caring toward the sufferer. Spiritual and self-reflective practices (16) such as meditation, prayer, journal-writing, and authentic discussion, as well as altruistic acts of volunteerism, and exposure to positive role-models may help medical students regulate negative emotions and cultivate virtues of compassion (17), mindfulness (18), and loving-kindness.

Research Design and Procedures.

Design. This study employs a combined quantitative/qualitative methodology, with the quantitative arm being both a correlational analysis and a quasi-experimental, repeated measures design. In the quantitative data analysis, self-report measures will be obtained from students, including unlimited love (UL) toward patients, empathy – as one particular dimension of UL– and dysphoria. Other student self-report measures will include global spirituality, spiritual and reflective practices, exposure to ethics and humanities formal coursework, voluntarism, exposure to professional and personal role-models of UL; and "demographic" variables such as gender, specialty choice, and exposure to clinical experience (curriculum timing).

The correlational analysis will examine the basic, zero-order interrelationships among all study variables using Pearson and Spearman correlation coefficients. The specific interrelationships of empathy, UL, and dysphoria with global spirituality will be investigated when the effects of other variables are controlled using partial correlation coefficients. In the repeated measures analyses, empathy, UL, and dysphoria will be treated as the primary dependent variables, and their respective mean scores at different times will be compared by either paired *t*-test or analyses of variance (ANOVA).The student self-report measures will be complemented by patient reports and proxy scores on clerkship evaluations. Qualitative data will be used to achieve greater understanding of students' and patients' perceptions of UL and its role in patient care.

Method: Year 1: The study will first develop and pilot-test both quantitative and qualitative measures of UL that currently do not exist in the published literature. We will then recruit and consent up to 50 2nd year students (out of a total class of 92) to participate in the study.

Quantitative student data will be obtained at the following time points: a) Baseline testing (end 2nd year) b) Pre- and Post each 12-week bloc Internal Medicine Clerkship (IMC) during 3rd year and c) Final Post (end 3rd year). The IMC is targeted because it provides a convenient testing point to obtain serial data and because it contains three ethics/humanities small group teaching sessions. All correlational analyses will use only baseline data. The repeated measures analyses will examine serial changes in mean scores across time in the curriculum, as well as test possible effects of the ethics/humanities curriculum.Baseline versus Post measures will determine whether there is a cumulative curriculum effect.

We will supplement student self-reports with data collected from patients and clerkship directors. To this end, while on the IMC, students will provide four patients with whom they had regular contact with the opportunity to complete a questionnaire assessing their perceptions of student humanism and UL, and participate in a brief phone interview on the same topic. Post- clerkship evaluations of students will be reviewed in a blinded manner for quantitative ratings and qualitative comments regarding professionalism, communication skills, and caring attitudes/behavior toward patients.

Qualitative interviews will be conducted with a randomly selected subset of students rotating through the IMC. We will recruit up to 25 of the study participants for interviews. We will also recruit a subset of 25 patients to participate in a qualitative telephone interview. Extensive notation will be made on all interviews and, when feasible, interviews will be audiotaped. Qualitative data analysis will be ongoing in conjunction with the interview process, and will use a grounded theory approach (19).

Method: Year 2: By the end of the project's first year, the study team, led by Dr. Boker, will have analyzed all quantitative data that were gathered. At this time, students will also receive personalized feedback (see **Recruitment** below) from a study team member. In addition, the study team will disseminate preliminary findings. The PI will also recruit the second cohort of 50 students from the 2nd year class, and will administer the baseline assessment.

During this period, the study team also will design the unlimited love intervention. The structure and content of the intervention will be informed by the Year 1 data, including efficacy of existing "humanistic" curriculum in the IMC, and also will draw on resources such as the George Washington Institute for Spirituality and Health. Generally, we anticipate that the intervention will include opportunities for student disclosure and self-reflection, exercises to develop compassion, equanimity, and loving-kindness, case discussion, and role-modeling and mini-presentations by faculty with expertise in spirituality (i.e., Dr. Walsh and others)

The intervention, offered over a 6 month period to all study participants as they rotate through the IMC, will consist of a weekly small group session, facilitated by the study PI, with assistance from Co-PI Dr. Cohn. Students who agreed to participate in the study, but who will not rotate onto Medicine during the study, will serve as the comparison group. This aspect of the study design will create a quasi-randomization of students to intervention and comparison conditions. Both intervention and comparison students will identify patients for follow-up surveys as in Year 1. We will review IMC evaluations for all intervention students; for comparison students, we will review evaluations from one clerkship occurring during the study period.

The quantitative battery will be administered to both intervention and comparison students at the beginning (Pre-Clerkship) and at the end (Post-Clerkship) of the intervention period, to measure the immediate pre/post effects. A final administration (Post) will occur in March to measure the carry-over effects of the intervention. Qualitative interviews along the lines of Year 1 will be conducted with a subset of both experimental and comparison group subjects, as well as with nominated patients. As in Year 1, qualitative data analysis will be ongoing.

The last month of the study will be devoted to quantitative data analysis. We first will repeat the correlational analyses on the baseline data gathered for the 2nd cohort. Then we will compare the 2nd cohort's Baseline, Pre- and Post-Clerkship, and Post mean scores in the repeated measures design. Also, intervention and comparison students will be compared across time on the primary dependent variables. Finally, we will compare Years 1 and 2 data to assess consistency of measurement and performance over time and cohort.

Subject recruitment. Approximately 50 entering 3rd year students will be recruited in both Years 1 and 2 of the study, primarily through a personal appeal by the PI during a required Patient-Doctor-Society course at the end of their second year, and supplemented

by email solicitation. Incentives for student participation will include a small monetary compensation ($50), as well as the opportunity to receive individualized feedback about their performance relative to their peers. Written consent to participate will be obtained in both years of the study.

Patients will be recruited through student facilitation. Each student enrolled in the study will identify four patients with whom they had regular contact during the Medicine clerkship. They will provide these patients with a sealed envelope containing an introductory letter explaining the study, the student assessment questionnaire, which will also have a space for contact information if the patient wishes to participate in the follow-up telephone interview, and a stamped return envelope. Students will be asked to judge and restrict their nominations to patients who are competent and sufficiently literate to comprehend written questionnaires. Patients will be incentivized with a small monetary compensation of $10, which they will receive as a gift certificate upon receipt of their completed questionnaire; and an additional $10 to participate in the interview.

Measures - Quantitative: We intend to use selected well-validated, reliable standardized measures as well as to develop and pilot-test our own measure of unlimited love. Since UL is a complex construct and medical students have only limited tolerance for filling out questionnaires (a potentially serious deterrent to acquiring a usable data set), in choosing our quantitative instruments we focused on two aspects of UL that we believe are particularly relevant to physicians-in-training: Empathy and Dysphoria.

Empathy is critically important in optimal patient care. Without a deep cognitive and emotional understanding of the patient's perspective, the physician will not be able to adequately address patient concerns. This study will employ the Balanced Emotional Empathy Test (20), a 30 item instrument with good reliability and validity that we have used successfully in other medical student studies.

Visions of Compassion (21) suggests that dysphoria represents the antithesis of UL. In Buddhist terms, it is its "far enemy." A physician feeling anger, dislike, hopelessness, negativity, and intense frustration toward a patient cannot simultaneously experience unlimited love for that person. This study will use the first 2 factors (23 items) of the Difficult Doctor-Patient Relationship Questionnaire (22), which reliably measure perceived level of patient difficulty and physician dysphoria. We have previously used this instrument in a study of primary care physicians.

Finally, to investigate the relationship between spirituality and UL, we have included the Royal Free Interview for Spiritual and Religious Beliefs (23), a 19-item instrument with acceptable criterion and predictive validity, internal consistency, and test-retest reliability that has consistently differentiated between people with high and low spiritual beliefs**.**

Our quantitative instruments will also include one patient measure, the Humanism scale (24), consisting of 24 items used to measure patients' perceptions of 8 components of the humanistic qualities of their caregivers.

Because of the paucity and variability of existing instruments designed to measure components of UL, we intend to design our own quantitative assessments of students' self-perception of UL toward patients; and patient's experience of UL from the student (see the Appendix for preliminary drafts). These measures will incorporate all key components of UL noted in Post (12), and will provide information on the scalable parameters suggested by Sorokin. We will also develop a student survey that assesses

spiritual and self-reflective practices, exposure to formal ethics and humanities coursework, altruistic volunteerism, and exposure to positive role models of UL.

Qualitative: Because of the potential limitations of quantitative assessments, we also intend to use qualitative interviews with a subset of student and patient subjects. Student interview schedules will ask open-ended questions about the role, value, and purpose of UL in patient care, how skilled students perceive themselves to be at expressing UL, and what helps or hinders them in this effort. Patient qualitative interviews will probe patients' experience of UL in encounters with their medical student, how they think this unlimited love was conveyed, and how it affected their health care.

Timetable:
April-May, 2003: Development of quantitative/qualitative instruments; pilot-testing
June, 2003 Student subject recruitment; baseline student quantitative/qualitative assessment
July 2003 - June 2004 Medicine Clerkship data collection
    a. Student quantitative pre-post assessments; qualitative interviews
    b. Review of student clerkship evaluations
    c. Patient recruitment, quantitative questionnaire, qualitative interviews
June 2004 Recruitment of Year 2 student cohort
    a. Baseline student quantitative/qualitative assessments
    b. Post-testing of all Year 1 student subjects
July-Aug 2004 Summary and transition
    a. Data analysis
    b. Feedback to Year 1 students
    c. Dissemination of preliminary findings
    d. Development of intervention
Sept 2004-Feb 2005 UL intervention
    a. Implementation of intervention
    b. Pre-post quantitative/qualitative measures for all student participants
    c. Recruitment of patients; patient data collection
    d. Review of student clerkship evaluations
Mar 2005 Project wrap-up
    a. Post assessment of 2nd cohort
    b. Data analysis of intervention/comparison students and patients
    c. Feedback to students
    d. Dissemination of findings
    e. Final report

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