

Supplementary material to the research article:
“Clinical practice and self-awareness as
determinants of empathy in undergraduate
education: A qualitative short survey at three
medical schools in Germany.”
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Appendix

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A. Qualitative short survey questionnaire

The English translation of the questionnaire and cover letter used in our survey are presented on the following pages. The originals can be found in the appendix to the German translation of this article.

A Short Survey on Empathy in Medical Education and Patient Care

Dear student,

My name is Florian Ahrweiler and I am a doctoral candidate at Witten/Herdecke University. I am currently conducting a survey to collect information for my medical dissertation on empathy in medical education.

What I am interested in is how you personally experience empathy during your medical studies and toward patients.

The data you provide during the survey will be **completely anonymized** in accordance with **Section 3, Paragraph 6 of the German Federal Data Protection Act**. This ensures that your responses cannot be linked to your identity at any point in time. I therefore ask that you do not provide your name or address when filling out this questionnaire. Your responses, part of which will be converted into numbers, will be stored on electronic storage media. Scientific analysis of the data from the survey will be performed solely by the research team consisting of myself and my advisors, Dr. Melanie Neumann and Dr. Christian Scheffer.

Thank you for your support!

Florian Ahrweiler

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1.

What do you understand by “physician empathy”?

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins or other markings on the paper.

2.

What educational elements of your medical studies have/had a positive or negative impact on your empathy?

positive:

negative:

How much contact have you had so far with patients during the course of your studies?

_____ weeks

During your medical studies, what do you find inhibits you from demonstrating empathy toward patients and in which situations are you particularly successful at being empathic?

Barriers to empathy: _____

Situations when you are particularly empathic: _____

In what ways can an empathic physician have an influence on the health and healing of patients?

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

6.

Please indicate your level of agreement with the following statements.

Please mark **only one box per row**.

Physician empathy improves:	completely disagree	disagree	agree	completely agree
Communication with patients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medical history taking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diagnosis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Therapy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The success of physical treatment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The success of psychosocial treatment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7.

What knowledge and skills in integrative and complementary medicine should each physician have upon completing their medical studies?

8.

Please provide some personal information about yourself:

Age: _____ years male ☐ female ☐

Intended area of specialization (if known): _____

Are you interested in complementary medicine? yes ☐ no ☐

University you attend: _____ No. of completed semesters of medical studies: _____

Are you participating or have you participated in an alternative (model) medical program? yes ☐ no ☐

B. Medical curricula of the participating schools

As stipulated by the German Regulation on the Licensing of Doctors (*Approbationsordnung für Ärzte*), medical students in Germany must complete a six-year course of study before taking the final licensing exam. In general, the first two years of study cover preclinical subjects taught through lectures, seminars and courses. Years three through five are dedicated to clinical subjects. These are followed by the final so-called “clinical year” (*Praktisches Jahr, PJ*) when students complete rotations in internal medicine, surgery and an elective discipline. Section 41 of the German Regulation on the Licensing of Doctors permits the implementation alternative, experimental (model) medical curricula (*Modellstudiengänge*) and defines permitted deviations from the regular stipulated curriculum (i. e., an integrated format). For readers who are not acquainted with the German medical education system, Chenot provides a comprehensive overview in his recent article (Chenot JF. Undergraduate medical education in Germany. *GMS Ger Med Sci.* 2009;7:Doc02. doi: 10.3205/000061).

B.1. Bochum University

This section is based on information obtained by one of the authors (FA) through a telephone interview with Prof. Dr. Thorsten Schäfer on January 18, 2013, and an interview with Dr. Dirk Hallner on March 5, 2013.

All respondents from Bochum University were enrolled in the university’s regular medical curriculum. Over the last decade, this traditional subject-based curriculum has gradually been revised by taking interdisciplinary approaches, such as the inclusion of problem-based learning at the end of the second year.

In this curriculum, students are educated on aspects of physician-patient interaction within the frame of the subjects Medical Psychology and Sociology. In addition to lectures and seminars during the first year which include clinical case studies, a course during the second year offers video-recorded role play in small groups of students. The course is tutored by senior students and is based on students’ observations and group reflection. Early sessions of this course emphasize interviewing skills and explicitly address empathy in the patient-physician encounter. Later sessions are more clinically-oriented and include counseling on specific medical conditions, such as chronic pain. Communication skills, including empathy, are assessed in a summative objective structured clinical examination (OSCE) with simulated patients. After the second year, students are taught clinical examination skills in a course that includes bedside teaching by physicians and small student-tutored groups.

B.2. University of Cologne

This section is based on information compiled from a telephone interview which one of the authors (FA) conducted with Dr. Christoph Stosch on March 4, 2013.

The University of Cologne (CU) offers an alternative medical curriculum which meets the stipulations of the German licensing regulation mentioned in the introduction to section B on the preceding page. All respondents from CU who participated in our study were enrolled in this program. The curriculum features a high proportion of electives, including scientific and research projects, and integrates clinical and preclinical subjects into so-called “areas of competence” (*Kompetenzfelder*) using an interdisciplinary teaching approach.

Teaching on physician-patient interaction takes place longitudinally using a spiral approach. Empathy is explicitly emphasized during the first year when CU students take part in a Psychosomatic Medicine course which emphasizes the non-somatic aspect of disease. At the beginning of the third year, students participate in an interview course which focuses on the physician-patient relationship. Empathy is addressed in this course as well. The course includes a live video conference where students watch how a primary care physician interviews a patient. Students are then given the opportunity to ask both the physician and the patient questions. This communication-centered interview course is complemented by subject-specific courses in history taking (e.g., internal medicine, pediatrics, or gynecology and obstetrics). Another element of CU’s alternative curriculum, referred to as the *StudiPat* requires that each student meet with and interview one and the same chronically ill patient twice a year in a primary care setting during their first four years of study. The student must reflect on and summarize their findings in a report. Faculty and the patient’s primary care physician then provide the student with feedback on the report. During the fifth year, students must pass an OSCE with four to five stations assessing their communication, interaction, and history-taking skills. The final, clinical year starts off with an introduction week (referred to as the *PJ-STArT-Block*) where students experience a close-to-reality simulation of clinical work on a ward. Topics covered during the introduction week using teaching formats such as simulated patients and peer exchange and discussion include breaking bad news and the intercultural aspects of medicine.

B.3. Witten/Herdecke University

This section is based on the personal perspective of one of the article's authors (FA) as an alumnus of Witten/Herdecke University's (WHU's) alternative medical program and on a description of the program available to faculty and students through the university's intranet.

The alternative curriculum at WHU focuses on early and continued clinical practice experience, integrates preclinical and clinical learning through problem-based learning throughout the first two years of study and enriches medical education through obligatory elective general studies modules which promote reflective, communicative and/or artistic competence. Students' responsibility for their own learning is also promoted as only few courses are compulsory. The core curriculum at WHU is further enhanced by additional curricula each integrated longitudinally throughout the main curriculum with the aim to help students develop skills in key physician competencies, such as communication, ethics, scientific methods and research, and health economics.

Physician-patient interaction is addressed in the Integrated Curriculum on Communication. During the first year, the ideal of a good physician is discussed and reflected on in a seminar. Students can also take part in an attentiveness course where they practice and reflect on careful attention to patients. During the second year, a medical history taking seminar lays the foundation for the subsequent simulated patient contact courses where interviews with simulated patients are recorded on video, reviewed and reflected on in small groups with clinicians and psychologists. The simulated patients also provide students with feedback. Simulated patient contact courses continue throughout the third year. However, the cases during this year are clinically more complex and communication impairments are simulated as well. Real patient contact in the fourth and fifth years gives students the opportunity to practice, receive feedback on, and reflect upon their communication with real patients. These courses are complemented by a palliative care-themed week which includes a special workshop on communication with dying patients.

C. Coding scheme

Our complete coding scheme can be found on the next page.

What do students experience as influencing their empathy?

the learning environment

- situations
 - teaching situation
 - fact-focussed situation
 - talking with patients
 - lack of privacy
 - demanding situation on a human level
 - language barriers
 - privacy
 - quiet
 - ward rounds
- way of dealing with others, "culture"
 - unclear organization
 - empathy is important to or demonstrated by physician or teacher
 - empathy is not important to or not demonstrated by physician or teacher
 - atmosphere
 - human interactions in hospital (staff, patients)
 - human/individual aspects of patient are neglected, seen as an object
 - human/individual aspects of patient are considered
 - bad communication with colleagues
 - experiences with physicians and teachers
 - fellow students/colleagues
- organization
 - enough time
 - patient-remote tasks
 - workload
 - economic aspects
 - time pressure, lack of time
 - admission based on university entrance exam scores
 - patient is new, patients change frequently

individual professional and personal experiences

- reactions to school/work demands
 - feelings and emotions
 - personality and biography
 - philosophy and spirituality
 - is well, needs are met
 - is unwell, needs are unmet
 - is experienced, knows the setting
 - is inexperienced, new to the setting
 - reflects on him/herself and others
- stress

- training in health care does not teach empathy
- empathy is new to respondents
- meaning of statement unclear
- no entry, space has been crossed out
- no positive influence
- no inhibition/no negative influence
- negative influence/barrier
- positive influence/facilitating situation
- can't say, doesn't know, lack of experiences
- medical education does not influence empathy; it is developed before that

meta-level

practice-oriented medical education

- training in physician-patient interaction
- cross-disciplinary, networked teaching
- lectures, seminars, and courses with reference to practice and/or patients
- lectures, seminars, and courses without reference to practice and/or patients
- lack of contact with patients
- practical experiences including contact with patients
- subjects
 - General and Family Medicine
 - Anatomy, Biochemistry, Physiology
 - Dissection course
 - Surgery
 - Complementary, Alternative, and Integrative Medicine
 - Medical Sociology
 - Medical Psychology
 - Orthopedics
 - Palliative Care
 - Psychosomatic Medicine, Psychiatry, Psychotherapy
 - General studies

feelings, attitudes and behavior towards patients

- antipathy toward the patient
- attitude toward the patient
- medical knowledge
- closeness to/distance from the patient
- thinking the patient is responsible for his/her disease
- sharing experiences/interests with the patient
- liking the patient
- behavior toward patients
- being able to put him/herself in the patient's position
- patient characteristics
 - relatives are a nuisance
 - gender
 - unspecified behavior and attitudes
 - is "difficult"
 - old age
 - is known, has been treated recurrently
 - is a child
 - is friendly and uncomplicated
 - is the same age as the student
 - is not severely ill
 - is severely ill
 - psychiatric condition
 - is unfriendly
 - is anxious
 - cooperates, "good compliance"
 - does not cooperate, "poor compliance"
 - accepts physician/student
 - does not accept physician/student
 - is in distress, needs help and affection
 - communicates openly, is honest
 - does not communicate openly, is dishonest or criminal
 - outward appearance

D. More student statements

The additional statements provided in this section are grouped according to the four main themes or factors identified through our analysis as influencing medical student empathy. The themes are presented and discussed in the Results and Discussion sections of the main article.

D.1. Practice-oriented medical education

“In Medical Psychology. This is when you are shown why empathy is important and you learn how empathy influences the physician-patient relationship.” (Respondent No. 6)

“Empathy is only taught as part of theoretical models. Medical school by itself only produces good theorists.” (Respondent No. 6)

“through clerkships in hospitals and offices, where you experience firsthand how physicians treat their patients and where you yourself have contact with patients and observe firsthand how they react to different physicians” (Respondent No. 8)

“The knowledge provided on behavior and the exercises in the Psychology seminar build confidence and thus give a sense of security, making empathy easier.” (Respondent No. 12)

“the skills lab course with actor patients and the analysis of physician-patient conversations[;] having clinicians as teachers who try to draw attention to the patient’s point of view or problems and provide tips for dealing with these” (Respondent No. 39)

“enough time and encounters with patients” (Respondent No. 47)

“clerkships on the wards where you have contact with ‘real’ patients and get a feeling for how to talk with a patient (what you should and what you shouldn’t ask)” (Respondent No. 54)

“lectures, such as Ethics and Physician-Patient Communication” (Respondent No. 71)

“I find that there are relatively few opportunities to train or reflect on one’s empathy skills during the preclinical phase of study.” (Respondent No. 78)

“All training involving *dialogical* contact with patients (→ through *communication* with the patient, oneself, the physician, in the group, he/she can answer). NOT during ward rounds or patient presentations where the patient doesn’t say anything.” (Respondent No. 115)

D.2. Students’ feelings, attitudes, and behavior toward patients

“... when the patient clearly demonstrates that they accept the treatment and want to cooperate.” (Respondent No. 1)

“With children and people my own age → it’s easier to make comparisons with my own life and see how I would feel in the same situation.” (Respondent No. 10)

“contact with intoxicated patients → alcohol abuse → You lose any empathy towards alcoholics and drug addicts.” (Respondent No. 14)

“with patients who are completely helpless and are obviously suffering, patients who are lonely and patients who take me seriously in my role and respect me” (Respondent No. 20)

“I can empathize best with patients with serious or fatal diagnoses ... empathy towards my fellow students; after all, we are all in the same boat.” (Respondent No. 23)

“with cooperative patients” (Respondent No. 24)

“patients who come in often for follow-ups and whose medical history has been known longer” (Respondent No. 68)

“positive compliance” (Respondent No. 104)

“patients who have gotten themselves into their situation (drugs, alcohol, long known but ignored precancerosis)[;] somatizing patients, I can’t handle them” (Respondent No. 105)

“patients that do not press me with (inappropriate) demands and press me for time” (Respondent No. 111)

D.3. Students’ professional and personal experiences

“I tend to be too emotional and, of course, I don’t want to seem emotionally unstable in front of a patient. When ‘pulling myself together,’ I often go a bit too far and am not empathic enough.” (Respondent No. 15)

“It is difficult to find a healthy mix of distance and empathy.” (Respondent No. 51)

“When it’s difficult to put yourself in the patients’ shoes, such as patients with objects in their rectum, absurd things like that. And cases when people are not seriously ill. You hold back when you can identify particularly well with a patient because it affects you too much” (Respondent No. 61)

“the stress of studying” (Respondent No. 72)

“emotional encounters with patients” (Respondent No. 91)

“from suffering from my own complaints and diseases, from books on the Buddhist view of empathy and sympathy, which is different from compassion . . . [situations] when I’m relaxed, have had enough sleep, and have a sense of inner balance” (Respondent No. 103)

“when I take my time (reduce stress)” (Respondent No. 112)

D.4. The learning environment

“With the amount of things you have to know, you forget about the ‘personal’ relationship with patients, you regard them as objects” (Respondent No. 12)

“when . . . you care for patients for a longer period of time (e.g., during a clerkship)” (Respondent No. 21)

“big groups in the physical examination course: 8 students to one patient, everyone wants to ask something—no ‘real conversation’ takes place” (Respondent No. 21)

“through bad examples, especially those set by surgeons when dealing with cancer patients” (Respondent No. 31)

“the hospital hierarchy, in which patients most often play the smallest role” (Respondent No. 38)

“being able to consider the patient’s wishes” (Respondent No. 38)

“by the wrong examples set which I have encountered during medical school so far[:] when overburdened due to a lack of support, the possibility of becoming personally involved [with patients] unfortunately fell through” (Respondent No. 41)

“[being] ‘under the physician’s thumb’ during patient encounters during clerkships” (Respondent No. 53)

“contact with patients on my own without the presence of resident physicians (for example, when taking blood samples in the morning). Then it’s easier since there is no group around.” (Respondent No. 61)

“being called by my name, being personally addressed” (Respondent No. 67)

“the professor’s arrogance” (Respondent No. 67)

“When the personal conversation between a physician and patient suffers because the physician needs to work under time pressure due to financial aspects of the hospital or his office.” (Respondent No. 74)

“when empathy is exemplified by trainers” (Respondent No. 84)

“big rooms, patients have no privacy” (Respondent No. 85)

“It’s easier for me to relax and be empathic toward patients when the setting is right—when it’s quiet and there’s more time.” (Respondent No. 86)

“The climate/everyday practice in the hospital, unfortunately. How a lot of physicians talk about their patients. The fact that you focus more on diseases during your medical studies than on individual medical histories (which is also very important!).” (Respondent No. 92)

“it’s bad when you have to go along with the ‘pack’ of physicians (for example, during ward rounds), and you ‘rank lower’ than professor and he does not behave empathically” (Respondent No. 100)

“the resident’s expectations to perform a good comprehensive medical history and examination as fast as possible” (Respondent No. 110)

“Empathy doesn’t actually require more time; it’s just more difficult in stressful situations. You should constantly remind yourself of that!” (Respondent No. 110)