Empathy in medical students' clinical interactions
– a multimethod qualitative study

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PREFACE AND ACKNOWLEDGMENTS

As a medical student, I first became interested in empathy during a clinical communication course I attended. Trond Mjaaland, who would later become a colleague and a friend of mine, held the course. The theme of the course was how to "gain the patient perspective," and was during my third year as a medical student.[1] I was fascinated by how the clinical skills teacher asked us about how *we* felt and wanted *us* to express exactly how *we* felt to the patient. This approach to clinical interaction was something completely new to me and something I had not given much consideration prior to this course. After the course, I asked what kind of research they did in his department. He set up a meeting with one of my present supervisors, Arnstein Finset. And so, I was introduced to the fascinating world of emotional cues and concerns in medical consultations and more importantly to the many different ways in which physicians could respond to these cues and concerns.

I teamed up with Arnstein Finset, Trond Mjaaland, and a fellow student, Hanne-Lise Eikeland Storøy, who had similar research interests. Together we wrote a proposal to the Student Research Program at the Faculty of Medicine, University of Oslo (UiO). We were eventually granted funding for our proposal and got to work. To begin with, we ended up conducting a different study than the one described in the present thesis. This study will not be described further because of a lack of findings as well as later lack of significance for the further direction of the present project.

When we designed the present project, I was still in the medical student research program at UiO, and my primary affiliation was with the research group Communication in Healthcare at the Department of Behavioral Medicine. This was also where my office space was located. However, Reidar Pedersen from the Centre of Medical Ethics at UiO replaced Trond Mjaaland as co-supervisor. I ended up writing the medical student research program dissertation: "Empathy in medical students: An experimental study of the relationship between emotions and electrodermal activity[2] in simulated clinical encounters" which I publicly defended in 2013. During this defense, I was encouraged to apply for a Ph.D. scholarship at UiO after I finished my medical degree. Eventually, I was granted a Ph.D. position in autumn 2014 funded by the Institute of Health and Society and the Centre for Medical Ethics (CME) at UiO with Reidar Pedersen as main supervisor. At CME, I was introduced to new and refreshing ethical perspectives on empathy in the doctor-patient relationship which made

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[1] The 3rd year and the course "gaining the patient perspective" was the very same as the participants in our study had recently attended.
[2] Electrodermal activity is an indirect measure of stress which is discussed further in the materials and methods chapter.

me reconsider some of my earlier perspectives on the nature and function of this complex and multifaceted institutional agreement.

CONTENTS

SUMMARY

Despite numerous reports and subsequent discussions that self-reported empathy in medical students declines as they enter their clinical years (1, 2), communicative and interactional aspects of empathy in clinical settings have received surprisingly little attention within research in medical education (3). Additional empirical studies using more than one method and perspective, as well as the employment of qualitative methods to investigate the physician's and the patient's experiences and interpretations in clinical interactions have been called for, and it has also been reported that the formal parts of the medical curriculum have not received adequate attention in regards to medical students' empathy development (4). One of the first settings in which medical students interact with patients is the clinical encounter, in which they must record the patient's medical history by conducting a medical interview. The medical interview is a tool used in clinical situations designed to perform a specific goal-directed task: to gather information about the patient's health condition in order to diagnose and treat the patient. At the same time, medical interviewing involves interpreting and subsequently classifying patients' personal accounts of illness into medical diagnostic entities (5). The ability to demonstrate empathy is widely regarded as a key clinical skill in medical education, practice, and professionalism (6-8), but in models or manuals on medical interviewing examples often appear constructed and seldom taken from actual clinical interactions. We therefore wanted to explore empathy in the interaction between students and patients in medical interviews using multiple methodological approaches and perspectives (3, 9).

We therefore conducted a qualitative study where 11 medical students were recorded on video while conducting a medical interview on a simulated patient. After the interview was over, we conducted in-depth qualitative interviews of all 11 students using a technique called video-stimulated recall where they were instructed to review pre-selected video clips of themselves conducting the interview of the simulated patient and interviewed after each clip using a semi-structured interview guide.

In the first paper, our objective was to explore medical students' verbal responses to patients expressing emotional issues in a medical interview. We examined the interaction in the 11 video recordings of the interviews using qualitative content analysis, more specifically the medical students' verbal responses to patients at times during the interview where the patients expressed emotional issues. In this particular analysis, we applied an interaction analysis system (VR-CoDES) as a framework or template for locating emotional sequences of talk, where emotional interaction is primarily understood as consisting of (1) patient utterances containing an emotional expression, (2) the medical student's response to this emotional expression, and (3) whether the emotional

expression was elicited primarily by the student or the patient. We identified four categories that depicted student responses to patients' emotional expressions: (1) questions focusing on a medico-professional agenda, (2) allowing disclosure of emotions without explicit acknowledgment of emotions, (3) attempts at reassurance, and (4) explicit recognition of emotions, but most often on a factual and descriptive level.

During the analysis of paper 1, we discovered that many of the emotional issues were discussed in the form of longer sequences of talk which extended beyond the pre-established triadic format of VR-CoDES. The aim of paper 2 was, therefore, to apply concepts and principles from a different qualitative method, namely conversation analysis (CA), to the same material, and thus to compare, contrast and supplement insights gained from the application of the VR-CoDES system vs. CA. The resulting research question was therefore to examine whether the function of the students' utterances could be perceived differently in the context of larger sequences of talk as in CA, and more specifically how emotional issues were handled. We observed that student utterances previously coded as elicitations of patients' emotional expressions were often preceded by subtle patient initiatives making them parts of prolonged sequences of emotional talk. Within CA, these prolonged sequences of talk in which patients disclose their emotional issues can also be conceptualized as patients' troubles-talk (10) or troubles tellings (11-13). We also discovered that students encouraged further elaboration of the patient's troubles tellings by displaying their understanding of the emotional issue as a storytelling still in progress. Students' expressions of understanding, however, gave little room for further elaboration and were often found to end patients' troubles tellings. Finally, students often addressed the patient's emotional issues as a medical issue and tended to offer professional advice.

The research question in the third paper was to examine what characterizes students' perceptions, experiences, and reflections when empathizing with patients expressing emotional issues in a concrete medical interview. Consequently, we conducted a qualitative content analysis of the 11 video-stimulated recall interviews with this question in mind. We identified five themes that may influence students' empathic interaction: (1) Giving priority to medical history taking, (2) Interpreting the patient's worry as a lack of medical information, (3) Conflict between perspectives, (4) Technical communication skill rather than authentic and heartfelt, and (5) The distant professional role.

Together, these three papers indicate that students prioritize medico-professional tasks and responsibilities rather than the patients' emotional experiences when conducting a medical interview and that the empathic behavior exhibited by students seems specifically designed to display interest in the patients' initiatives to talk about emotional experiences without departing from ideals and

norms for professional conduct. The subsequent video-recall interviews gave some support to this hypothesis, while at the same time describing conflicts between a medical agenda, rules and norms for professional conduct, and the student's own judgments when trying to empathize with the patient. These interviews also provided us with empirical evidence of students' incognizant interpretations of emotional events in patients' accounts of their illness within a biomedical frame of reference.

This thesis thus indicates that the skills-based approach in which students learn how to conduct a medical interview by checking off questions on a sheet of paper seems to promote a bio-mechanistic view where patients are handled as medical objects and that this approach can sometimes conflict with students' own moral convictions. Even more worryingly, it suggests that students tend to interpret emotional concerns within a medico-professional frame of reference and are thus probable to miss important aspects of patients' needs and preferences. We suggest that future medical curricula on medical interviewing include reflection and discussion on how student interaction during the medical interview may shape and influence patients' accounts of their own illness, as well as encourage educators to question the validity of the student's own interpretations of the patient's concerns.

SAMMENDRAG

Til tross for tallrike rapporter og påfølgende diskusjoner om at selvrapportert empati hos medisinstudenter avtar når de går inn i sine kliniske år (1, 2), har kommunikative og interaksjonelle aspekter ved empati i kliniske omgivelser fått overraskende lite oppmerksomhet innen forskning på medisinsk utdanning (3). Ytterligere empiriske studier med bruk av mer enn én metode og perspektiv, samt bruk av kvalitative metoder for å undersøke legens og pasientens erfaringer og tolkninger i kliniske interaksjoner har vært etterlyst (3), og det har også blitt rapportert at de formelle delene av den medisinske læreplanen ikke har fått tilstrekkelig oppmerksomhet med tanke på medisinstudenters empatiutvikling (4). En av de første omgivelsene der medisinstudenter samhandler med pasienter, er det kliniske møtet, der de må ta opp pasientens sykehistorie ved å gjennomføre et medisinsk intervju. Det medisinske intervjuet er et verktøy som brukes i kliniske situasjoner designet for å utføre en spesifikk målrettet oppgave: å samle informasjon om pasientens helsetilstand for å diagnostisere og behandle pasienten. Samtidig innebærer et medisinsk intervju å tolke og deretter klassifisere pasienters personlige beretninger om sykdom i form av medisinske diagnostiske entiteter (5). Evnen til å vise empati er allment ansett som en sentral klinisk ferdighet i medisinsk utdanning, praksis og profesjonalitet (6-8), men i modeller eller manualer som omhandler medisinske intervjuer fremstår eksempler ofte konstruerte og sjelden hentet fra faktiske kliniske interaksjoner. Vi ønsket derfor å utforske empati i samspillet mellom studenter og pasienter i medisinske intervjuer ved å bruke flere metodiske tilnærminger og perspektiver (3, 9).

Vi gjennomførte derfor en kvalitativ studie der 11 medisinstudenter ble tatt opp på video mens de gjennomførte et medisinsk intervju på en simulert pasient. Etter at intervjuet var ferdig, gjennomførte vi kvalitative dybdeintervjuer av alle 11 studenter ved bruk av en teknikk kalt videostimulert hukommelse. Ved hjelp av denne metoden ble de hjulpet til å gjennomgå forhåndsvalgte videoklipp av seg selv idet de gjennomførte intervjuet av den simulerte pasienten, for deretter å bli intervjuet etter hvert klipp ved hjelp av en semistrukturert intervjuguide.

I den første artikkelen var målet vårt å utforske medisinstudenters verbale responser der pasientene uttrykte emosjonelle problemer under det medisinsk intervju. Vi undersøkte interaksjonen i de 11 videoopptakene av intervjuene ved hjelp av kvalitativ innholdsanalyse, da mer spesifikt medisinstudentenes verbale responser til pasienter under intervjuet der pasientene ga uttrykk for emosjonelle problemer. I denne spesifikke analysen brukte vi et interaksjonsanalysesystem (VR-CoDES) som et rammeverk eller mal for å lokalisere emosjonelle samtalesekvenser, der emosjonell interaksjon først og fremst forstås som å bestå av (1) pasientytringer som inneholder et følelsesmessig uttrykk, (2) medisinstudentens respons på dette emosjonelle uttrykket, og (3) om det

emosjonelle uttrykket først og fremst ble fremkalt av studenten eller pasienten. Vi identifiserte fire kategorier som skildret studentenes svar på pasienters emosjonelle uttrykk: (1) spørsmål med fokus på en medisinsk-profesjonell agenda, (2) tillatelse til å ytre følelser uten eksplisitt anerkjennelse, (3) forsøk på å trygge pasienten, og (4) eksplisitt gjenkjennelse av følelser, men oftest på et saklig og beskrivende nivå.

Under analysen av artikkel 1 oppdaget vi at mange av de emosjonelle problemene ble diskutert i form av lengre samtalesekvenser som strakk seg utover det forhåndsetablerte triadiske formatet til VR-CoDES. Målet med artikkel 2 var derfor å anvende konsepter og prinsipper fra en annen kvalitativ metode, nemlig samtaleanalyse (CA), på det samme materialet, og dermed sammenligne, kontrastere og supplere innsikter tilegnet ved hjelp av VR-CoDES vs. CA. Det resulterende forskningsspørsmålet var derfor å undersøke om funksjonen til studentenes ytringer kunne oppfattes annerledes ved å se på studentenes ytringer som lengre samtalesekvenser som i CA, og mer spesifikt hvordan emosjonelle problemstillinger ble håndtert av studentene. Vi observerte at studentytringer som tidligere var kodet som å fremkalle pasienters emosjonelle uttrykk, heller ofte ble innledet av subtile pasientinitiativer som gjorde dem til en del av lengre sekvenser med emosjonelt prat. Innenfor CA kan disse lengre samtalesekvensene der pasienter uttrykker sine emosjonelle problemer også konseptualiseres som pasienters problem-snakk (10) eller problemfortellinger (11-13). Vi oppdaget også at studentene oppmuntret til ytterligere utdyping av pasientens problemfortellinger ved å vise deres forståelse av det emosjonelle problemet som en historiefortelling i ferd med å utfolde seg. Studentenes uttrykk for forståelse ga imidlertid lite rom for ytterligere utdypning av pasientens emosjonelle problemer og ble ofte funnet å avslutte pasientenes problemfortellinger. Til slutt tok studentene ofte opp pasientens følelsesmessige problemer som et medisinsk problem og viste en tendens til å tilby profesjonelle råd.

Forskningsspørsmålet i den tredje artikkelen var å undersøke hva som kjennetegner studentenes oppfatninger, erfaringer og refleksjoner når de fremviser empati ovenfor pasienter som uttrykker emosjonelle problemstillinger i et konkret medisinsk intervju. Følgelig gjennomførte vi en kvalitativ innholdsanalyse av de 11 videostimulerte tilbakekallingsintervjuene med dette spørsmålet i tankene. Vi identifiserte fem temaer som kan påvirke studentenes empatiske interaksjon: (1) prioritering av sykehistorien, (2) tolkning av pasientens bekymring som mangel på medisinsk informasjon, (3) konflikt mellom perspektiver, (4) teknisk kommunikasjonsferdighet fremfor autentisk og hjertefølt og (5) den fjerne profesjonelle rollen.

Sammen indikerer disse tre artiklene at studentene prioriterer medisinsk-faglige oppgaver og ansvar fremfor pasientenes emosjonelle opplevelser når de gjennomfører et medisinsk intervju av en

pasient, og at den empatiske atferden som studentene viser, synes spesielt designet for å vise interesse for pasientenes initiativ til å snakke om emosjonelle opplevelser uten å fravike idealer og normer for profesjonell atferd. De påfølgende hukommelsesintervjuene ga en viss støtte til denne hypotesen, samtidig som de beskrev konflikter mellom en medisinsk agenda, regler og normer for profesjonell atferd og studentenes egne moralske overbevisning under forsøk på å fremvise empati ovenfor pasienten. Disse intervjuene ga oss også empiriske bevis på studenters ubevisste fortolkninger av emosjonelle hendelser i pasienters sykdomsberetninger innenfor en biomedisinsk referanseramme.

Denne avhandlingen indikerer dermed at den ferdighetsbaserte tilnærmingen der studenter lærer å gjennomføre et medisinsk intervju ved å krysse av spørsmål på et ark ser ut til å fremme et biomekanistisk syn der pasienter håndteres som medisinske objekter, og at denne tilnærmingen enkelte ganger kan komme i konflikt med studenters egne moralske overbevisninger. Enda mer bekymringsfullt antyder den at studenter har en tendens til å tolke emosjonelle bekymringer innenfor en medisinsk-profesjonell referanseramme og vil derfor sannsynligvis gå glipp av viktige aspekter ved pasientens behov og preferanser. Vi foreslår at fremtidige læringsplaner for ferdigheter innen medisinsk intervjuteknikk inkluderer refleksjon og diskusjon om hvordan studenters interaksjon under det medisinske intervjuet kan forme og påvirke pasientenes beretninger om sin egen sykdom, samt oppmuntre lærere til å stille spørsmål ved gyldigheten av studentens egne fortolkninger av pasientenes bekymringer.

ABBREVIATIONS

CME: Centre for Medical Ethics

VR-CoDES: Verona Coding Definitions of Emotional Sequences

EE: Emotional expression

CA: Conversation Analysis

SP: Simulated Patient

EDA: ElectroDermal Activity

IAS: Interaction Analysis System

EC: Emotional Concern

PKD: Polycystic Kidney Disease

NMF: Norwegian association for medical students

REK: Norwegian Regional Ethics Committee for Medical and Health Research Ethics

LIST OF PAPERS

Paper 1

Brodahl, Knut Ørnes; Finset, Arnstein; Eikeland, Hanne-Lise & Pedersen, Reidar

Medical students' expressions of empathy: A qualitative study of verbal interactions with patients expressing emotional issues in a medical interview

Paper 2

Brodahl, Knut Ørnes; Eikeland, Hanne-Lise; Finset, Arnstein & Pedersen, Reidar

The first steps towards professional distance: A sequential analysis of students' interactions with patients expressing emotional issues in medical interviews

Paper 3

Brodahl, Knut Ørnes; Storøy, Hanne-Lise Eikeland; Finset, Arnstein & Pedersen, Reidar

Medical students' experiences when empathizing with patients' emotional issues during a medical interview – a qualitative study

1 INTRODUCTION

I tried to be supportive without saying too much […] to "facilitate" her a bit. I did not really say much, I mostly just nodded and said "Yes," I think. So, I was kind of trying to seem understanding, yeah, professionally understanding. (Susan, third-year medical student)

The empathic physician has for a long time been considered to be one of the cornerstones of a healthy doctor-patient relationship (6, 7) with multiple benefits for both physician and patient (14-17). The medical interview is one of the first situations where medical students find themselves interacting, and ultimately attempting to understand and relate to other people as patients during clinical encounters (18, 19). Within the last decades, the introduction of the biopsychosocial model has led to an increasingly patient-centered style of interviewing, and thus students are met with expectations to pay attention to both relational and affective dimensions of patients' experiences (6, 7, 20), as well as recording vital medical information. In light of reports and subsequent discussions that empathy in medical students declines as they enter their clinical years (1, 2), we conducted an in-depth qualitative study in which we were able to capture both real-time interaction on video of medical students conducting a medical interview, as well as the students' own accounts of what was going on during the interaction (the quote above stems from one of these student's accounts).

This thesis presents results from a study using different perspectives and methods to study empathy in an arranged clinical encounter between third-year medical students and simulated patients. It highlights the importance of empathy as an interactional phenomenon in terms of both how the students approach and respond to emotional issues in the video-recorded medical interviews conducted during the clinical encounters, as well as subsequent individual stimulated recall interviews with students where we explored medical students' perceptions, experiences and reflections when empathizing with the patient. A central bit of information in this context is that the 11 participating students were purposely informed that they would encounter an actual patient rather than an actor and were not made aware of this until the data collection for each encounter was completed. In this thesis, we will therefore refer to these simulated patients as either actors, patients, or simulated patients, depending on the context in which they are described.

To my knowledge, no previous studies have investigated in detail how medical students at the beginning of their clinical careers communicate during potential empathic moments in clinical encounters. How do they approach, discuss, and end topics which mattered to the patient during these encounters? And what are their experiences, perspectives, and reflections as the interaction is going on?

This thesis starts with a background section that includes separate chapters on empathy in the patient-provider relationship, clinical interviewing and empathy, empathy development in medical students, and finally a chapter on empirical research in empathic communication in medical students. Subsequently, the knowledge gaps which we hope to fill with this thesis are briefly introduced, before the aims and research questions follow. Next, you will find a chapter on the materials and methods of the present thesis, followed by a summary of the results of the three included papers. Then, a discussion of the methodological approaches and ethical considerations will follow, as well as a discussion of the results of this thesis. A chapter on the conclusions and implications of the present research concludes this thesis.

2 BACKGROUND

2.1 EMPATHY IN THE PATIENT-PROVIDER RELATIONSHIP

2.1.1 The role of empathy in medicine

Regardless of academic background, empathy is a useful construct in that it provides a way of understanding highly complex activity without having to refer to the many individual processes or actions of which it is constituted (21). If you look up the term empathy in the Cambridge dictionary online, you will find it neatly defined as: "the ability to share someone else's feelings or experiences by imagining what it would be like to be in that person's situation" (22). The English term empathy was originally coined by Titchener to cover the German term Einfühlung, which describes the psychological state in which writers or painters imagined what it would be like to be a person or an object (23). The term itself stems from the ancient Greek words *en* and *pathos,* which can be translated as *in suffering.*

Historically, the importance of empathy in medicine has been heavily debated (24) and there is still disagreement as to how this "ability" should be employed in a professional context (25). More than 100 years ago, the physician Sir William Osler coined the term *aequinimitas,* which refers to the objective stance physicians may take in order to not be affected emotionally by their patients' suffering (26). Some physicians still regard emotional involvement with patients as a threat to the objectivity needed to treat patients on equal terms, and the idea that physicians should experience "neutral empathy" or "compassionate detachment" to obtain "maximum freedom to act for the patient's greater benefit" (27) still prevails at some medical institutions today. The pediatrician and medical ethicist Jodi Halpern argues that this model of detached concern relies on a common misconception that knowing *how* the patient feels is synonymous with knowing that the patient *is in a certain emotional state* (25). In the last few decades, however, scientific advances in social neuroscience, behavioral sciences, and philosophy have emphasized the role of both the physician's and the patient's emotions within the field of empathy research in medicine (9, 24, 28, 29). The present thesis is meant as a contribution to this still ongoing debate of why the role of emotions in clinical interaction should not be underestimated.

2.1.2 The multiple benefits of empathic behavior

As with any healthcare profession, a physician-patient relationship implies that the patient can and should receive help from her or his physician. To *receive* help, the patient must first let go of control of her or his own present situation, and leave some aspects of decision-making regarding her or his own situation in the hands of the physician (30). Finding an appropriate balance between patient

control or *patient autonomy* in the patient-provider relationship on one side, and physician dominance or physician *paternalism* on the other, poses a challenge both in clinical encounters as well as in research on the physician-patient interaction (30). In terms of power dynamics, this relationship can therefore sometimes be understood as a *paternalistic* relationship, in that the physician is made responsible and accountable for the treatment of the patient, as well as an *asymmetric* relationship where the power dynamic, for the most part, rests on the healthcare provider's shoulders (31). Regarding empathy, e.g., when a patient utters an emotional concern or starts to cry, the asymmetry between the two parties becomes more symmetrical as behaviors originating from the patient tend to be followed by an adjusting response from the healthcare provider, suggesting a shift in the relationship towards a more mutual and equal relationship (31).

Empirical research has shown that physicians' empathic behaviors can be linked to improved health outcomes for patients (32). In general, patients want to be encouraged to talk about psychosocial issues in a friendly atmosphere by healthcare providers who do not dominate the conversation and listen to their emotional concerns with interest (33). Patients have also reported higher ratings of physicians on the socioemotional aspects of care who were more attentive to their body language as well as those physicians who provided feedback to these bodily expressions of emotion (34). Empathic physicians may have positive impacts on patients' clinical outcomes in several respects; for example, a significant positive correlation was identified between physicians' self-reports of empathy and diabetic patients' control of their own blood glucose as well as cholesterol levels (17), and in patients with the common cold, where patients' self-reports of physicians' empathy was found to significantly predict both the duration and severity of the illness and was also found to be associated with changes in the patient's immune system (16).

In North America, empathic behaviors have also been found to correlate with the likelihood of being sued for malpractice. Levinson and colleagues (35) found that primary care physicians who spent more time with their patients and expressed behaviors usually associated with empathy, such as educating their patients about what to expect, using humor, soliciting patients' opinions, checking understanding, and encouraging them to talk further, were found to be significantly less likely of being sued for malpractice. In another study by Smith and colleagues (36), a random sample of patients at an emergency department was enrolled in a study where they were instructed to watch a video of a discharge conversation where one of the videos contained two brief empathic statements from the physician – the subjects watching the "empathy" video reported having statistically significant fewer thoughts regarding litigation.

It has also been demonstrated that physicians' empathic behaviors indirectly contribute to reduced patient distress (37, 38), and patient adherence (15, 39). A review and meta-analysis of randomized controlled trials aiming to establish a causal connection between the patient-clinician relationship and objective healthcare outcomes identified a small but significant effect (40), and a more recent review on the specific effects of interventions regarding the conveyance of empathy and positive expectations from clinicians to patient also showed a marginal but significant effect on patient clinical outcomes (41). Empathy might also enhance diagnostic precision, foster more fulfilling professional experiences, promote a sense of personal contentment, and alleviate symptoms of burnout among physicians (14, 24, 25, 42-46). Some authors even argue that the feeling of being understood by another person has an intrinsic therapeutic function, in that it effectively brings the patient out of a state of isolation and reinstates a state of connectedness which permits the patient to feel whole again (47). In the related field of psychotherapy research, the only common factor found to have a positive effect on patient outcome is the therapeutic alliance, which can be defined broadly as the collaborative and affective bond between therapist and patient (48).

2.1.3   Empathy: A multidimensional construct

We have now established that displaying empathic behaviors as a physician provides multiple benefits for both patients as well as the physician. However, employing a concept such as empathy in research can be a complicated matter. This is because it denotes a construct that has many meanings as well as many definitions depending on research tradition (49). Some researchers have even suggested we stop using the concept because of its lack of precision and instead use other related concepts which offer more scientific precision (50)[3].

Daniel C. Batson (49) proposes that some of the confusion related to finding a definition is related to how empathy has historically provided an answer to two very different questions:

1. *How can one know what another person is thinking and feeling?*

2. *What leads one person to respond with sensitivity and care to the suffering of another?*

While the first question has been of interest to researchers interested in how we gain knowledge of the internal state of others, the other question has been of interest to scholars interested in what motivates prosocial behavior. And while we cannot access someone's thoughts and feelings directly to gain insight into the first question, there must surely exist some way of gaining knowledge about

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[3] From a discussion following a seminar on empathy from the conference ICCH 2016.

the second question. Both questions are relevant to the physician-patient relationship and may serve as a point of departure in our inquiry on empathy in medical students.

Let us try to combine these two approaches to empathy within the physician-patient relationship. While the first question can be distinguished as having to do with either cognitive or affective representations or knowledge about what the patient is experiencing at any given point in time, the latter question deals with the intersubjective and ultimately moral aspects of empathy. This latter question not only involves the patient but also the empathizer (or in this case clinician). This allows us to break down the concept of empathy into different dimensions: (1) cognitive or "thinking" aspects of empathy, (2) affective or emotional aspects of empathy, (3) communicative or behavioral aspects of empathy, and (4) moral aspects of empathy.

2.1.3.1   Cognitive or "thinking" aspects of empathy

In the history of modern medical culture and education, empathy has mostly been conceptualized as a cognitive concept involving the ability to assume the role of the patient without being affected emotionally (26, 27, 51). In cognitive terms, empathy is usually defined as a personality trait, inclination, or attitude that one should be able to measure objectively within the provider, e.g., by self-assessment (51). In this case, the physician's insight or knowledge of the patient's internal state could be represented as objective and direct information. The physician might even consider documenting this information in the patient's medical charts, without having to interpret or gather more information about the patient's emotional condition. A physician's knowledge of the patient's thoughts and feelings concerning her or his condition has been referred to as cognitive empathy (51) or empathic accuracy (52). In a clinical situation, the physician might also engage in something referred to as motor mimicry (53). The physician might pay attention to the patient's non-verbal clues to fear by the patient appearing anxious or jittery by for example talking fast or repeatedly tapping her or his finger on her or his thigh. The physician might also talk faster or engage in behavior that "mimics" the patient's posture or neural responses, which has also been referred to as empathy according to Preston and de Waal's theory. This theory is based on a perception-action model and states that observing others' emotional behavior may activate emotional representations and autonomic arousal in oneself which results in insight into the other's affective state, but without the corresponding affective experience (53).

Another author who is cognitively oriented is Mohammadreza Hojat, the main author behind the commonly used self-assessment questionnaire, the Jefferson Scale of Empathy (abbreviated JSE when physicians assess their own levels of empathy, and JSE-S when medical students assess their level of empathy). He defines empathy in the following way (2):

> *Empathy is a predominantly cognitive (as opposed to affective or emotional)*
> *attribute that involves an understanding (as opposed to feeling) of patients'*
> *experiences, concerns, and perspectives, combined with a capacity to communicate*
> *this understanding. An intention to help by preventing and alleviating pain and*
> *suffering is an additional feature of empathy.*

If you take a closer look at Hojat's definition, you will see that the definition emphasizes and even opposes a more cognitive form of empathy in the physician-patient relationship to an affective form, where more emotional aspects would be involved in gaining an understanding of the patient's predicaments. Hojat accounts for this difference by referring to the distinction between empathy and sympathy in clinical interactions (51):

> *In clinical encounters, empathy involves an effort to understand the patient's*
> *experiences without joining them, whereas sympathy involves an effortless feeling of*
> *sharing or joining the patient's pain and suffering.*

Again, we see some resonance with previous notions of neutral or detached forms of empathy.

In the study by Hojat and colleagues referred to earlier (17), physicians were asked to self-assess their own empathy by filling out the JSE, and the scores they reported were later used to establish a correlation with diabetic patients' positive clinical outcomes. Later attempts at replicating this study have not been able to reach the same conclusions and have therefore disputed these results (54).

2.1.3.2 *Affective or emotional aspects of empathy*

During the last few decades, more emphasis has been put on the affective or emotional aspects of empathy in the patient-provider relationship (24, 25, 55). The previously mentioned Jodi Halpern has been an eager proponent of including emotional reasoning in her concept of clinical empathy (25). The role of empathy in clinical settings, she argues, is not only to put labels on patients' affective states but to recognize and acknowledge the very experience of feeling. This requires the physician to enter the clinical encounter with humbleness. As physicians, we must also accept that we will never be able to fully understand how the patient feels and therefore approach the patient with what Halpern refers to as *empathic curiosity* about the patient's predicaments. She names this specific skill "clinical empathy" and distinguishes it from more common emotional experiences such as emotional resonance by its primary function; its aim is to make use of the patient's subjective experience to find solutions to the patient's concerns *in actual clinical situations.* This can only be achieved by perceiving the *particular meaning* a patient's symptom or diagnosis has for the individual patient (24, 25). She further claims that this characteristic form of emotional reasoning involves a mental process called associational linking. Associational linking is the phenomenon in

which the distinct associations of two individuals intertwine and the two perspectives and ideas are merged. This will in turn generate new perspectives. Halpern lists four reasons why physicians should make use of this skill: (1) *emotional attunement* to the patient's emotions helps physicians appreciate the personal meaning of patients' words, (2) emotions help guide and hold attention on what is *humanly significant*, (3) empathy facilitates trust and disclosure, and can be directly therapeutic, and (4) empathy makes being a physician more meaningful and satisfying.

Applied to the physician-patient relationship, the physician might in this way also actually experience some of the same fear that the patient feels and thus become aware of emotions qualitatively similar to that of the patient. Jean Decety, a pioneer in the emerging field of Social Neuroscience, has described empathy as a sequence of neural events (56):

a) *affective sharing bottom-up processes grounded in emotional arousal that underlie rapid and prioritized processing of emotion signals,*

b) *understanding the emotions of self and other, which relies on self- and other-awareness,*

c) *executive functions that operate as a top-down mediation, helping to regulate emotions and yield mental flexibility.*

Studies even indicate a differentiation in the brain's processing of the two first components and that sharing the other person's feelings implies a somatic representation of the observed emotion in one's own body (56, 57). It has also been demonstrated that for physicians, the medical experience and expertise they have in their role as caretakers play a role in downregulating the sensory processing involved when perceiving others in pain (58).

2.1.3.3 Communicative or behavioral aspects of empathy

A third option is to define empathy in terms of dynamic social interaction where empathy does not occur "inside" of the individual healthcare provider but is rather a by-product or consequence of the social interaction (59). In this case, we would have to somehow gain access to the social interaction itself, either by direct observation, interviews, or questionnaires.

Stewart Mercer, a professor of primary care and multimorbidity renowned for developing the commonly used empathy-measure CARE (Consultation And Relational Empathy), defines clinical empathy from a more relational perspective, as the healthcare provider's ability to (60):

a) *understand the patient's situation, perspective, and feelings (and their attached meanings);*

b) *communicate that understanding and check its accuracy; and*

c) *act on that understanding with the patient in a helpful (therapeutic) way.*

The CARE questionnaire can give researchers or healthcare providers insight into the patient's perceived empathy of the healthcare provider and therefore introduces the communicative or behavioral aspect of empathy in the interaction. In one study, the CARE questionnaire was used to measure patients' self-reports of the physician's empathy which was found to predict the outcome of the common cold (16). Researchers have, however, not been able to establish any correlation between the self-assessed empathy of the healthcare provider as measured by the JPE and the assessment made of the same healthcare provider by their patients (61, 62).

There have also been several intriguing studies regarding physicians' empathy by direct observation and assessment of physicians' behaviors and their patients. In one of these studies, the authors analyzed audio recordings of medical consultations with the Roter Interaction Analysis System (RIAS) (35). This interaction analysis system captures all statements or thoughts made by either the physician or the patient during the consultation and found that physicians who spent more time with their patients and expressed behaviors usually associated with empathy were significantly less likely to be sued for malpractice. Note that RIAS has its own sub-category named empathy which includes statements like, "That must make it tough for you," which was not one of the physician behaviors reported to significantly lower the likelihood of being sued for malpractice. The use of interaction analysis to categorize empathic behaviors will be further discussed in the final chapter of this background section.

2.1.3.4 Moral aspects of empathy

In addition to the many therapeutic aspects of empathy reviewed under section 2.1.2, there are also moral aspects to empathy in the patient-provider relationship. A fourth option is to approach a definition of empathy from an ethical perspective. For example, component (c) of Mercer's definition cited above certainly involves a moral component in that it involves an intentional act to help the patient, while components (a) and (b) could potentially have been employed, for example, by a clinician suffering from antisocial personality disorder to commit ethically questionable acts, since none of these components involve any malicious intentions on behalf of the empathizer (60, 63). Throughout history, entering medical practice has often been regarded as a calling of moral or religious nature (64). Professional ethics within the medical profession can be traced back to ancient Greece and is among the oldest forms of professional ethics. The Hippocratic oath, a historical ethical

codex, has traditionally been taken by individuals entering the medical profession (65)[4]. Plato's emphasis on physicians acting for the benefit of their patients rather than for their own gain is also considered fundamental in the practice of modern medicine (64).

2.1.3.4.1 Empathy as a gateway into the moral domain

The ethical perspectives on patient care presented in the writings of Per Nortvedt and Arne Johan Vetlesen address the subject of empathy as a way to enter the moral domain (66-69). Of special interest were radical perspectives on empathy as a part of a tradition of feminist care ethics in which empathy – both as a mental capacity and as behavior – is seen as valuable in itself, without an explicit focus on outcomes. It can be seen as having an inherent purpose of connecting people. Care is a universally acknowledged fundamental structure in our lives. We are inherently connected to each other, and herein lies the ethical will to take care of each other. The phenomenon "to care about" precedes the decision to take care of others (67).

In Vetlesen's model of moral performance, empathy is considered both a crucial and intricate part. He divides his model into three sequential steps – moral perception, judgment, and action (68). Perception and judgment demand both emotional and cognitive abilities, and inherent in these emotional and cognitive capabilities we find the faculty of empathy.

A fundamental question posed by Vetlesen is how we, as moral agents, gain access to the moral domain. Instead of highlighting the cognitive aspects of moral reasoning as did Kant and his contemporaries, Vetlesen makes a convincing claim that one should rather spend more time reflecting on the role of emotion in moral reasoning. He does so by comparing the two related concepts of respect and concern, by which he points to both concepts as possessing a vital role in moral perception. The former concept of respect is the one applied in most theories on moral action. Regarding concern, Vetlesen argues that the more emotional concept of showing concern for another human being in many ways can be equated with respect. A moral concern also involves a certain respect for the integrity of the other person; "Would we find credible those who assured us that they had respect for others, "respect" in the moral sense, although they failed to show any concern for the weal and woe of others?"

According to Vetlesen, emotional experience anchors us as individuals to the particular moral circumstances within a given situation. Emotional experiences can therefore be considered a

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[4] in this oath, the physician-to-be pledges to "prescribe only beneficial treatments according to her or his abilities and judgment; to refrain from causing harm or hurt; and to live an exemplary personal and professional life."

gateway into the moral domain. The primary vehicle for experiencing others' emotional experiences is the faculty of empathy. Empathy is an other-directed, deep-seated human faculty that contributes to the creation and sustainment of one individual's relations with another. He sees empathy as "not just any feeling." Much in parallel to Hojat's distinction between empathy and sympathy, Vetlesen states that empathy does not involve becoming "contaminated" with the emotional state, nor that one comes to feel the same feelings as the other. Rather, it allows the appreciation of the experience of another.

But how does this appreciation of another's experience come about? Vetlesen's answer to this is human receptivity. It is first and foremost by actively opening ourselves up to the world around us that we become able to perceive what is morally significant in any given situation. This attentiveness to what is happening around us, however, needs to be learned and cultivated. It is first and foremost through perceiving what is at stake for the other that we enter the moral domain. It is by nurturing and staying connected to our humanity, and not by remaining passive and adopting a detached and objectifying attitude towards others, that we preserve and maintain our receptivity. If not, some situations can easily escape moral perception and thus lead to a withering of our emotional capacities. Instead, one will remain blind to the morally significant in the scenario taking place right in front of one's eyes and leave one indifferent to it. The failure to recognize the humanity of one's fellow human beings which was encouraged in Nazi ideology was employed as a prominent example of this.

2.1.3.4.2 The missing step of moral judgment in the physician-patient relationship

In the various theoretical definitions of empathy presented elsewhere in this section on the different aspects of empathy, we see that the step of moral judgment is often the missing link between the perception of the morally significant in the situation and the action taken by the empathizer. This link is – if one employs only self-assessment questionnaires, behavioral, or neurobiological methods to study empathy – mostly neglected (3). In a study by Agledahl (70) and colleagues, videotapes of physicians working in a Norwegian hospital were analyzed and it was reported that they masked neglect of their patients' existential worries with courteousness. She found that these physicians actively directed focus away from patients' existential concerns, focused more on medical facts, and rarely addressed personal, existential, or moral aspects of patients' situations. The obvious disregard of the patients' existential concerns as well as the observed courteousness in this setting would suggest that this was intentional on the physician's part, and thus neither a failure in moral perception nor action, but rather a shortcoming of moral judgment. It is crucial to recognize and address this missing step to ensure empathy is ethically grounded and applied in a meaningful and compassionate manner within the patient-provider relationship.

2.1.4   Methodological limitations in empirical research on empathy

So, how do we connect all these aspects of empathy in the patient-provider relationship to construct a study in which all these bits and pieces are considered in one coherent study on empathy in medical students?

To understand empathy research within the field of medicine, we must first distinguish between two fundamentally different ways of conducting research, namely *quantitative* and *qualitative* research. While quantitative research focuses on obtaining numbers and measurable, statistical data which can be reproduced, the aim of qualitative research is to explore the meanings of social phenomena as experienced by individuals themselves (71). Examples of quantitative empathy research are psychometric questionnaire studies (e.g., studies employing the JSE-S or CARE) where empathy is quantified, or behavioral assessment studies based on coding schemes (e.g., with RIAS). Qualitative research, on the other hand, aims to obtain in-depth knowledge about how people experience social phenomena. Most qualitative studies on medical student empathy have investigated the meanings of medical students' experiences with empathy during their medical education (72). A prominent figure within qualitative research in medicine, Kirsti Malterud, suggests that vital parts of clinical interaction and judgment are neglected within a mainly quantitative biomedical paradigm (73). She argues that a patient's lifeworld cannot be transformed into quantifiable data. She further writes how qualitative research methods originally adopted from the social and human sciences based on interpretation (often also referred to as hermeneutics) and investigation of subjective experience (also referred to as phenomenology) would be suitable for this purpose. She, therefore, calls for more extensive use of qualitative methods within the field of medicine to investigate topics such as subjective experience and communication.

According to Pedersen, there are a number of methodological shortcomings in empirical research on empathy in medicine (3). In a critical review, he found that publications often lacked a precise definition of the term, researchers seldom employed qualitative approaches and the quantitative instruments which were used in a majority of studies of empathy in medicine were often narrow and lacked necessary precision. Many of the studies investigated empathy through coding or rating of observed behaviors only, and many of the coding or rating schemes neglected or made implicit assumptions about the patients' or physicians' concrete interpretations or experiences. Measures that explored the patient's perspective were rarely used, and none of these explicitly explored the main concerns of the patient or whether the patient perceived that the physician misunderstood these specific concerns. Only one-sixth of the publications employed more than one perspective to

study empathy and studies which included patients' or physicians' concrete experiences and interpretations in real-life situations were found to be non-existent. Rather than being specifically designed to study empathy, most of the qualitative studies only had empathy as an emerging theme in the analyses. His concluding remark is that empathy is more often than not separated from the main parts of clinical perception, judgment, and communication and that future studies should include more than one method and perspective, qualitative approaches as well as the concrete experiences and interpretations of both parties in the studied interaction.

2.2 CLINICAL INTERVIEWING AND EMPATHY

The medical interview, also commonly referred to as the medical history, is one of the main arenas in which clinical interaction with patients takes place. Historically it has been argued that the role of medical history in arriving at the correct diagnosis exceeds that of both the physical examination as well as the results from laboratory testing, and some clinicians would argue that this view is still dominant today (74). This is perhaps best summarized in a quote that has frequently been attributed to William Osler: "Listen to the patient; he is telling you the diagnosis" (75). With the technological advances of modern medicine occurring within the last century, an increasing emphasis has been put on the biological aspects of medicine rather than the psychosocial aspects of patient care (20). However, the medical interview still possesses a crucial role in the medical encounter in granting the physician access to information about the patient's concerns and situation, allowing for dialogue between the patient and physician, and ultimately providing the opportunity for the expression of empathy. Since a review of the historical development of the medical interview in its entirety is not possible within the scope of this thesis, I rather choose to present and discuss selected perspectives that have exerted influence on how medical interviewing as a part of the clinical encounter is conducted at present and how medical students are taught to conduct medical interviews today.

2.2.1   The introduction of the biopsychosocial model in medicine

A name vital to the patient-centered approach to recording a medical interview is George L. Engel. In his 1977 critical essay, he suggested a new model for how to understand medicine as a science; namely the biopsychosocial model (20). He observed that many of his colleagues within the field of psychiatry and in medicine, in general, found themselves in a crisis, and that this crisis derived from "adherence to a model of disease no longer adequate for the scientific tasks and social responsibilities of either medicine or psychiatry." He suggested that the dominating "biomedical model" should be replaced with a new – and according to him – better model for understanding the origin of human malfunction. In the eyes of Engel, there existed two opposing positions within the field of psychiatry at the time; one which adhered strictly to the biomedical model in which

psychiatry would simply be excluded from the field of medicine altogether, and the other one where mental disease was understood uniquely as behavioral disorders resulting from brain dysfunction. To account for observations of some patients experiencing identical conditions as mere problems of living while others considered them as serious illnesses, Engel argued that the professional responsibility of the physician should be extended to also involve assessment of other factors contributing to disease. Engel, who did not agree with the underlying terms of either of these two positions, subsequently launched a third alternative, the biopsychosocial model. The biopsychosocial model implies a medical model in which the concept of disease is not only defined in terms of measurable disturbances in biological systems which are physical in nature but also involves a broader understanding of human illness as a result of sociological and psychological factors. Since it is the physician's professional obligation to assess and make further recommendations or referrals in response to any ailment the patient may suffer from, and since the illness being presented is likely to entail social and psychological aspects of the patient's condition in addition to biological ones, any physician prepared to make decisions and actions on behalf of the patient should possess adequate knowledge about all three of these aspects of the human condition. Today, the biopsychosocial model has ended up exerting a major influence on how students are taught to perform a medical interview. Also, by tying together the skill of conducting a medical interview with that of ending up with the correct diagnosis, Engel played a crucial role in making behavioral sciences part of the curriculum in medical schools worldwide:

> The most essential skills of the physician involve the ability to elicit accurately and then analyze correctly the patient's verbal account of his illness experience. The biomedical model ignores both the rigor required to achieve reliability in the interview process and the necessity to analyze the meaning of the patient's report in psychological, social, and cultural as well as in anatomical, physiological, or biochemical terms…

As a result of Engel's arguments that medicine encompasses not only the biomedical but also the psychosocial aspects of care, questions exploring the interdependent nature of psychological and social aspects of individuals' lives have now been integrated into contemporary models of person-centered interviewing (6, 7). The term *psychosocial* refers to an understanding of human behavior that considers a person's psychological development in relation to her or his social and cultural environment and is primarily used within the field of behavioral sciences in medicine to designate psychological and social factors which influence illness and disease (20, 76). Examples of questions exploring psychosocial factors include questions about social support, marriage status, social status, work conditions, recent deaths in the family, and social integration (77).

2.2.2   An anthropological perspective on the medical interview

Much of the same critique was launched towards the "biomedical system" by the psychiatrist and medical anthropologist Arthur Kleinman in his book, "The Illness Narratives: Suffering, Healing and the Human Condition" (5), a decade later. From an anthropological perspective, he stresses how recording medical information also represents a ritual act in which illness is transformed into disease. By writing up a patient's account of their illness, the patient is transformed from a subject who sits in front of you into an object in the medical records. The medical account is written in the language of biomedicine, and one of the objectives of medical education is to teach medical students to translate and reinterpret patients' symptoms and medical histories into diagnostic entities. He also writes that "practitioners must […] return to the time when as beginning medical students, with a foot in both lay and professional worlds, they audited the speech of their first patients with great intensity, with something approaching awe in respect for hearing the patient's story in his own words and with deep sympathy for the human condition of suffering." Interestingly, Kleinman also employs the term "empathic witnessing" to describe the moral act of committing oneself as a practitioner to "be with the sick person and to facilitate his building of an illness narrative that will make sense of and give value to the experience" in the care of the chronically ill. He further observes a paradox in modern medicine that, although our primary source of medical information as practitioners is the patient's narrative of her or his illness, the medical care system "does just about everything to drive the practitioner's attention away from the experience of illness."

2.2.3   The medical interview as a distinctive form of discourse

Elliot G. Mishler, a social psychologist, introduced a perspective on medical interviewing in his work "The Discourse of Medicine: Dialectics of Medical Interviews" (78). Drawing from different theoretical perspectives, Mishler identified an underlying conflict between the patient's "voice of the lifeworld" and the physician's "voice of medicine." He observed that while the interviewer attempted to understand the patient's condition from a scientific and objective biomedical perspective (termed "the voice of medicine"), the patient offered clues to their own experiential "attitude of everyday life" (the voice of the lifeworld). Mishler argued that the reason for this dialectic to occur was the specific patterns of talk he identified in the "unremarkable" interview. The structure of the "unremarkable interview," characterized by cycles of information exchange, reinforces the physician's control over the conversation to gather diagnostic information (78-80). However, patients contribute their own knowledge, experiences, and goals (81), shaping their stories from the intersections of biological, psychological, and social aspects of their lives (20).

Mishler also writes that most clinical training of medical students, interns, and residents occurs in hospitals and emergency rooms where individuals are viewed and talked about as patients rather

than persons. These medical trainees are unlikely to encounter these individuals ever again. In general practice, however, which is also where the medical interviews Mishler examined were collected, physicians enter into long-term relationships with individuals whom they will witness experiencing a variety of episodes and illnesses during their careers. He also problematizes the minute role the training in conducting medical interviews played in the standard medical school curriculum in 1984. He witnessed that clinical training usually followed the apprenticeship model where students first observed a senior physician conduct a medical interview and then examined the patient before trying out the same procedure under supervision and guidance from the senior physician. He observed that the problems of understanding which are bound to happen during this process tend to be defined and interpreted as technical rather than simple misunderstandings. He sets this praxis in connection with the biotechnical aspects of medicine in which physicians are viewed as collectors and analyzers of technical information originating from patients. He further argues that "There are no external checks on possible distortions or misunderstandings, or of different perceptions by patients of what has been said or left unsaid." In this way, Mishler argues, patients are made into objects and their perceptions and understandings are distorted through a biomedical lens.

2.2.4   Patient autonomy in the clinical encounter

A patient-centered approach to medical interviewing also signifies a more egalitarian physician-patient relationship where the patient is granted more autonomy, as opposed to a more paternalist approach highlighted in the traditional biomedical model (82). Within the field of medical ethics, patient autonomy is mentioned as one of the four main principles in Beauchamp and Childress' highly influential publication, "Principles of Biomedical Ethics," from 1979 (83). In the 1992 seminal paper, "Four Models of the Physician-Patient Relationship," Emanuel and Emanuel present four different versions of how physicians may interact with their patients as well as how each of these interactional patterns affects patient autonomy: the paternalistic, the informative, the interpretive, and the deliberative model (30). In the paternalistic model, there is an underlying assumption that the physician acts as the patient's guardian and will always make decisions according to the patient's best interests and that there is, therefore, no need for the physician to consult with or explore the patient's perspective. Patient autonomy is therefore reduced to an agreement to what the physician deems best. In the informative model, the aim of the physician is to assume the role of the technical expert and provide the patient with all relevant medical information and then leave the decision-making process up to the patient. From this perspective, patient autonomy is completely reliant on the patient's preferences since the patient can make her or his own decisions concerning medical care. In the interpretive model, the aim of the interaction is to shed light on the patient's wishes and

preferences, and for the physician to assist in realizing their values. Ideally, the physician should take the role of a medical counselor and work with the patient to explore their goals and aspirations in detail. Regarding patient autonomy, this model adds another layer of understanding for the patient in that the physician aids in sorting and teasing out sometimes conflicting patient values. In the final deliberative model, yet another layer of understanding is added in that the physician provides her or his own justifications as to why certain health-related values should be aspired to. By engaging in mutual deliberation, the physician and patient can together reach an agreement as to which values are worth pursuing for the individual patient. The role of the physician in this model can be likened to that of a teacher or friend and regarding patient autonomy; the aim is for the patient to engage in a process of moral self-development in which the patient is also encouraged to contemplate other health-related values through mutual dialogue. To carefully explore the patient's perspective by specifically addressing the hopes, concerns, and what is most important to the patient, and in this way let the patient influence the physician's agenda, is considered crucial in both the interpretive and the deliberative model.

2.2.5 Medical students and the skill of medical interviewing

Having now reviewed some influential texts on the development of the patient-centered approach to medical interviewing, let us now return to more recent times. The medical curriculum at the institution where the study took place underwent substantial reform in 1996 (Oslo-96). The objective of this reform was to prepare students for a more patient-centered approach to medical interviewing. The patient-centered approach to medical interviewing entails gaining information about the patient's own thoughts and ideas about the origin of their problems, concerns about what their symptoms may involve, how their illness may affect their everyday lives, and the patient's expectations regarding which initiatives the physician may take to solve these problems (6, 84). This is in contrast to a more physician-centered style of communication where biomedical aspects are highlighted, and the patient's own views on her or his condition are not considered to be of particular relevance (82).

A medical student's first clinical encounter with patients in the role of a physician-to-be is usually while she or he is recording a medical interview with a patient. Most students are gradually introduced to this form of institutional interaction in plenary lectures where they are provided with a standardized template of the medical interview normally applied in instances where new patients are admitted to the hospital. Students will typically print this standardized template on paper with slots to fill in while conducting the interview.

Internationally, there are many available guides or instructions on how to conduct a medical interview (6, 7). These guides usually combine a one-sided focus on asking the appropriate questions with attention to relational and affective dimensions of the patient's experiences. To express empathy is a skill commonly referred to in patient-centered models or manuals of medical interviewing, such as "demonstrating empathy" in the Four Habits model (85), as empathic statements in the Calgary-Cambridge model ("I can appreciate how difficult it is for you to talk about this") (7), or as the acronym NURS (*N*aming or labeling the emotion ("That seems sad four you"), *U*nderstanding or legitimizing ("I can imagine that must have been quite upsetting"), *R*especting ("You've really dealt remarkably well with this") and *S*upporting or offering partnership ("Together, I think we can get on top of this") in Smith's patient-centered interviewing (6). However, examples of empathy often appear somewhat constructed and are portrayed as separate from other clinical skills, making it difficult to see how empathy relates to other agendas such as the retrieval of information relevant to diagnosis. In the Calgary-Cambridge model, a useful distinction within clinical skills curricula has been made between *content*, *process*, and *perceptual* skills (86). Content skills refer to *what* healthcare providers talk about (e.g., the specific content of their questions, information, and answers), process skills refer to *how* healthcare providers talk about things (e.g., how they phrase their questions or provide information, how they relate to the patient with the use of verbal and non-verbal communication and how they structure a medical interview), and finally, perceptual skills refer to what goes on inside the healthcare providers mind (e.g., clinical reasoning, emotions and thoughts concerning the patient and her or his condition or intentions and the healthcare provider's values or beliefs related to the patient). From a behavior science perspective, recording a medical history can be modeled as a goal-oriented task-driven behavior (e.g., arriving at the correct diagnosis) on the part of the medical student encountering a series of distractions in the course of the clinical encounter (e.g., language issues). Clinical training requires that medical students integrate medical knowledge with empathic handling of patients, both of which entail all three abovementioned skills. However, a patient's emotional issues will also act as typical elements which will distract the medical student from this goal-driven behavior and inhibit the student from achieving her or his agenda of obtaining an exhaustive medical history (87).

Generally, clinical skills curricula tend to focus more on process skills than the other two (86). This is mainly because the *content* skills involved in taking a traditional medical history focus on medical problem-solving related to diseases and are therefore often taught separately in history-taking courses or bedside teaching rounds. Conversely, process skills are taught in dedicated communication skills courses. Additionally, history taking is commonly instructed by specialists in teaching hospitals, while communication courses are generally taught by general practitioners,

psychologists, or psychiatrists. This can provide learners with mistaken messages about the nature of process skills: "real" doctors take "histories" and lack interest in communication, while communication teachers solely focus on communication and overlook the clinical history. This may again lead to learners perceiving the content of the traditional medical history as the "correct" approach, considering process skills as an optional add-on (86).

Since this thesis specifically deals with the empathy of medical students rather than graduated physicians, let us now turn our attention specifically toward the empathy development of medical students during their studies. In the last 20 years, there have been a number of interesting developments, all related to the results of only a few studies employing the self-assessment empathy questionnaire JSE-S (2, 88).

2.3 EMPATHY DEVELOPMENT IN MEDICAL STUDENTS

2.3.1 The "empathy decline" in medical education

One of the first worrying signals of a deterioration in student empathy across undergraduate medical education came from a quantitative study conducted by Hojat and colleagues at a single institution in North America (88). The conclusions of this study were later replicated partly using the same dataset but with a larger number of participants, in which a total of 456 medical students divided between two different school years completed the self-assessment questionnaire JSE-S on the first day of medical school and at the end of each school year until graduation (2). Statistical analysis of the material showed that a significant decline in empathy scores was observed at the end of the third year and persisted until graduation, which is also the same period where the students' curriculum shifts towards patient-care activities. These results have later been contested (89-91) and further investigations have questioned their significance in terms of both clinical relevance, as well as the validity of this described "empathy decline" within a broader international population (92, 93).

In a systematic review of studies on empathy development in medical school by Neumann and colleagues from 2011, the reasons for this decline were further examined (1). It was reported that several studies indicated that medical students who selected patient-focused specialties tended to have higher empathy scores than those who preferred more technically-oriented specialties. Further, measures of student distress (e.g., burnout, low sense of well-being, reduced quality of life, depression) were identified as having a significant influence on empathy scores, with aspects of the "hidden curriculum" as well as the formal/informal curriculum commonly described as a causal mechanism in subsequent discussions. The hidden curriculum comprises influences at the level of organizational structure and culture, referring to processes that are often unarticulated and

unexplored (94). The described aspects of the hidden curriculum included mistreatment by superiors and mentors, the vulnerability of medical students and residents (in terms of enthusiasm and idealism being present at the start of medical school but diminishing as they were confronted with the harsh reality of clinical medicine), issues with social support, and finally, the high workloads students were confronted with. The discussed aspects of the formal/informal curriculum include the relatively brief encounters with patients which allowed for no further learning from patients, the unsuitable learning environment which included few "bedside interactions," and inadequate role models. To gain further nuances regarding these inhibitors of empathy it is, however, more suitable to investigate the medical students' own perspectives by the use of qualitative methods.

2.3.2 Medical students' own views on empathy

Medical students' own understanding of empathy has received relatively little attention in empathy research, but there has been a surge of interest in the topic since 2010 (95) which is probably due to the description of the abovementioned empathy decline.

In a meta-analysis of interview-based qualitative studies on medical students' views and experiences of empathy from 2016, Jeffrey reported that there was conceptual confusion concerning the concept of empathy and a struggle among medical students about whether they should distance themselves or connect with patients (96). While some students regarded empathy as a predominantly cognitive concept where understanding the thoughts and feelings of patients was prioritized (18), others adopted a more emotional view where connecting emotionally and sharing the experiences of the patient was considered important (97). Students also reported that in their experience, patient emotions were not an impairment to decision-making, but rather a vital source of information. Some of the students also offered reflections as to the nature of empathy, such as what distinguishes empathy from sympathy, whether empathy is innate or not, whether it is related to specific situations or circumstances (72), and its role as a virtue in the practice of medical care (18).

Students also mentioned encounters with physicians who, in their view, functioned as negative role models by displaying how *not* to interact with patients by behaving insensitively towards patients' psychosocial concerns (97-99). Students considered both theoretical and practical teaching on empathy to be lacking and wanted more hands-on patient contact during the first years of their medical studies (72). Students also reported difficulties empathizing with patients in chaotic clinical situations, such as when treating mental health or critical patients (97, 100), or in situations where they found that they were in conflict with the patient (18).

Students also talked about how some physicians acted as positive role models by, e.g., being attentive to the patients' predicaments and thus encouraging students' empathic abilities in the clinic

(18, 98). Some told of their own experiences with illness as advantageous in establishing an empathic relationship with patients (18, 97), while others reported a struggle between keeping distance while at the same time maintaining an emotional connection with patients (18, 97). Students coped with this issue by learning to hide their feelings and being less explicit in their demonstration of empathy in clinical encounters (72). They expressed wishes to preserve their empathy and uttered concerns about their empathic abilities diminishing as they progress through medical school (18). Additionally, students emphasized that biomedical and technical aspects of medicine were prioritized over empathy and more psychosocial aspects of patient care (101). Emotions were regarded as a threat to the objectivity and rational mind needed to treat patients (18). They also told of how the strong emphasis on evidence-based medicine and medical facts in their curriculum influenced their empathic communication with patients.

Jeffrey further reported that other factors, such as the hidden curriculum, lack of time, and medical culture in general, contributed to making their demonstration of empathy in clinical settings less overt. Issues regarding the hidden curriculum were reported as having to do with the hierarchical organization of the medical school and how they were forced to compete amongst each other to impress their seniors (98). Lack of time would force them to pay less attention to psychosocial aspects of care and to only concern themselves with what they have been taught by their seniors as having top priority – the biomedical facts. Students described a medical culture where they were discouraged by their tutors to commit acts of empathy, e.g., holding a patient's hand and exploring the patient's feelings (18). Some students found themselves identifying rather than empathizing with younger patients in similar circumstances as themselves (100). They also seem to have linked the two concepts of professionalism and detachment together (72). To avoid their own suffering, students used coping strategies such as emotional detachment or distancing themselves from the patient's emotions. They saw a threat of being overwhelmed by their own emotions when interacting with patients (100), which they were afraid would ultimately make them inaccessible to the patient's predicaments (18). As a finishing remark, Jeffrey claims that the "empathy decline" described above may be illusory and may very well reflect how medical students find less overt ways to display empathy as a step in their professional development.

Since most of the studies reviewed above were cross-sectional (all data gathered at the same time) rather than longitudinal (data collected on a cohort multiple times within a given period), Jeffrey performed an interpretive phenomenological analysis of one-to-one interviews with two separate cohorts of medical students; one preclinical cohort (followed from their first through third year) and one clinical cohort (from fourth through sixth year), each consisting of eight participants through a period of three years (102). This longitudinal approach thus provided him with the opportunity to

investigate the "empathy decline" by immersing himself in the students' own accounts of empathy and their empathy development. As well as validating many of the qualitative findings above, he found that during their preclinical years, students reported that they viewed empathy primarily as a phenomenon occurring within the individual student. In their clinical years, however, Jeffrey noticed a change in some of the participants, where empathy was described more as a relational construct dependent on the context of the clinical encounter. They reported that they had a wish to connect with patients on an emotional level, and thus refuted previous notions of detached concern as an ideal within the medical profession. Instead, some of the students in the clinical group described empathy as a dynamic evolving process where the student first approached patients with a desire to empathize, in which the patient's assessment of their first impression of the student was vital for the establishment of an empathic relationship. Secondly, students saw it as important to demonstrate to the patient that you are present and willing to listen to their predicaments. Thirdly, there were some disagreements among students regarding the degree to which one should share the patient's emotions. Some saw it as vital in that it gave an opportunity to show that you actually cared about the patient, while others were more skeptical and considered that it would cost them too much on a psychological level. Fourthly, many discussed the idea that exposing one's own vulnerability was an essential aspect of displaying empathy toward patients. They also talked about disclosing their own experiences of illness to the patient, which they reported doing less and less throughout their study period. Students also argued that as a student one should remain non-judgmental towards every patient to maintain equality of care. Additionally, students differentiated between two ways of observing the patient's lifeworld, by employing either a self-oriented perspective or an other-oriented perspective. Students agreed that it was the other-oriented perspective that was the main constituent in empathy, and most students reported that the self-oriented approach, e.g., by thinking to themselves, "What would this be like for me?" would lead to a sense of being overwhelmed and ultimately lead to personal distress. Jeffrey also reported the existence of different "levels of empathy" during their study period. Initially, there was a tendency among students in their first clinical exams to "fake" displays of empathy by simply employing stock phrases from textbooks to obtain better marks without attempting to take the perspective of the patient, mainly since they were aware of being assessed for it. However, most students agreed that it was only the authentic level of empathy that was appreciated by patients and that it would not take patients long to realize that the stock-phrase approach was ingenuine. During their clinical years, students were introduced to yet another level of empathy in which only the cognitive component of empathy was employed without the emotional component. Finally, they reported a deeper level of empathy where the understanding and sharing of emotions was tailored according to each patient encounter.

Jeffrey also argued that some students expressed concerns about becoming too involved with the patient and would thus be put in a position where they were in danger of projecting their own emotions onto the patient's situation. However, students still reported that there was room in clinical situations for displaying that the patient's emotions had had an impact on them. Some students also talked about the importance of experiencing the patient's emotions to at least some degree for real empathy to occur between themselves and the patient. And even though most students expressed a wish to connect with patients on an emotional level, some also expressed concern that over-identifying with patients could eventually result in burnout. It was a commonly shared belief among students that approaching patients with detached concern would only cause stress and unsatisfied patients. Students also stressed the importance of regulating difficult emotions in the clinical encounter by establishing a psychological self-other boundary to regulate the balance between detachment and emotional connection. They also described various strategies for establishing this self-other boundary; making mental compartments, that it would eventually come by itself with clinical experience, reflection on how this was achieved in earlier clinical experiences, being curious about the patient's predicaments rather than being immersed in it, developing resilience, and being provided with support by family and peers.

Regarding the students' views on whether empathy can be taught or not, some argued that this was a question of simply having a personality predisposed to empathy or not, while others stated that their empathy would be amenable to change. Students also called for more training regarding emotion regulation and many of the students mentioned how communication skills training with simulated patients made the setting unnatural and thus encouraged them to exhibit "fake" empathy. Some of the students in the preclinical cohort also argued that they quickly became preoccupied with the biomedical part of the history-taking and lacked the mental capacity to deal with the psychosocial aspects. It was also reported that the students initially approached history-taking in a schematical, question-by-question manner, but later found more flexible and dynamic approaches to the interaction and found themselves having conversations with patients in their clinical years. They also found it paradoxical that they were expected to include ICE (an acronym for Ideas, Concerns, and Expectations) at the end of history-taking since many thought that these aspects should inform the entire patient encounter. Many argued that ICE reduced empathy to a tick-box exercise.

When summing up the reported changes in empathy throughout medical school, Jeffrey argued that students initially found it difficult to adapt to their new role as a physician and that space for empathy was created with increasing competence and maturation making it easier to focus on the patient rather than themselves. As they progressed through medical school, they therefore reported

a higher sensitivity toward patients' emotional concerns and that the focus had moved from themselves as a student to the dynamic patient-student relationship.

A slightly different approach was taken in a systematic review and meta-synthesis conducted by Costa-Drolon and colleagues in 2021 (95). One of the exclusion criteria in Jeffrey's study was that only one-to-one interview studies were included, while Costa-Drolon chose a wider scope by including other data collection methods such as group interviews, observations, and written documents. Additionally, the focus of this review was more on how medical students' perspectives on empathy can help in gaining insights into concrete recommendations and strategies on how to improve the teaching of empathy. Regarding students' ability to define the concept of empathy, Costa-Drolon also reported some of the same conceptual confusion as Jeffrey but went further in describing how some students defined the concept as having to do with identifying the patients' needs and priorities as well as adopt and gain access to their perspectives and experiences. Some even reported it as being useful in situations where it was called upon to be mindful and show acceptance of patients' distress. Additionally, many students reported that they now distinguished several types of empathy, perhaps most notably between that of an authentic, natural, or genuine type vs. a cold or inauthentic type. Costa-Drolon also highlighted how students reported that having support and feeling well about themselves, as well as having experienced some of the same things as the patient, facilitated their empathy. When the issue came up, students also emphasized how the patient's own attitude towards the student was crucial for them to experience empathy.

On the issue of how instructions on empathy should be taught to students, Costa-Drolon and colleagues identified three different positions among students in the included studies. The first position was that empathy could not be taught at all. The second position was that those who already possess some empathy may be stimulated or possibly even strengthen their empathic abilities by attending classes or programs on empathy. The third position was that the only level of empathy which is amenable to influence is the behavioral level, suggesting that one can only learn how to be perceived as empathic. This position would result in all students being able to exhibit a minimal level of "pretending" empathy.

Regarding the many modalities involved in the teaching of empathy, many students reported how formal teaching on the practical aspects of empathy, especially in classes involving patients, promoted their empathy. Regrettably, some students reported that courses mostly took place too early in their clinical careers and that the courses which were meant to promote their empathic abilities rather ended up making empathy appear superficial since they only focused on the behavioral aspects of empathy. Instead, many students reported how practical experiences with

patients made through the informal and hidden curricula made a positive impact on their empathy which ultimately made them able to develop strategies to react in an empathetic manner towards patients. There was a general agreement among students on the crucial importance of observing senior clinical supervisors and staff in empathic interactions with patients and the patients' families to develop their own empathy, especially in sensitive situations where bad news was being delivered to patients. In these sensitive situations, students reported that they valued how patients were treated as people rather than diseases. Students also reported how learning about senior physicians' attitudes towards their patients and being able to have subsequent discussions with the physicians about these relations provided them with supportive arguments of their own empathic abilities. The role of support from their supervisors was also highlighted in that feelings of inadequacy and lack of support were considered obstacles to empathy development. Since some students also reported being alienated from the general public in their role as medical students, the opportunity to compare their reactions with senior colleagues having gone through the same process as themselves also provided them with some relief.

Most students reported a willingness to engage in empathic relationships with patients since it enabled both a better physician-patient relationship as well as better care for their patients. They also reported that empathy increased the likelihood of identifying the precise nature of patients' concerns and appreciation of the person behind the disease. On the other side of the spectrum, Costa-Drolon identified a group of students who were hesitant about empathy and saw it as an intrusive element in their education. Much like Jeffrey reported, these students found it necessary to keep some distance from patients to protect themselves. The important point that they also kept their distance to preserve a level of authority and efficacy before the patient was however lacking in both Jeffrey's thesis and meta-analysis. Concerning the issue of emotional control, most students reported that they found a need to control displays of emotion before patients. Some also argued that this ability was a sign of maturity and professionalism and that emotional control was an important prerequisite for empathy. According to Costa-Drolon, most of the students in the included studies expressed concern about whether they would be able to maintain their empathic abilities throughout their professional careers. Overall, students seemed to agree that as they progressed in their studies there was an increasing tendency to perceive patients as intellectual puzzles rather than as people. Concordant to Jeffrey, students also blamed the brutality of the psychosocial environment at their own institutions for the experience of progressively losing their empathy throughout medical school.

2.3.3 Updated review on qualitative studies of medical students' experiences of empathy

To account for publications published after the abovementioned studies, I conducted a search in MEDLINE using Ovid's interface by employing the same search strategy as Jeffrey with the following main search terms: empathy, compassion, sympathy, medical student, undergraduate, qualitative, interview, and meta-ethnography. The date interval for the search was publications between the date of December 27, 2022, to June 17, 2019 (since this was the end date of Costa-Drolon's systematic search) (95).

This search strategy yielded 425 individual publications. I used the same exclusion and inclusion criteria for publications as Costa-Drolon (since I agree with his view about the scope of Jeffrey's search strategy being too narrow). After an initial reading of all available abstracts, eight were selected as being within the scope of the search strategy. Among these, one combined observations with individual interviews and focus groups (103), one combined observations with individual interviews (104), one combined qualitative analyses of written material with focus group interviews (105), three employed face-to-face interviews only (106-108), and two were qualitative analyses of reflective essays (109, 110). An overview of these eight qualitative studies can be found in Table 1 below.

Table 1. Overview of qualitative studies included in review on medical students' experiences of empathy

Author (year)	Objective(s)	Country	Participants	Data collection	Method of analysis
Rieffestahl and colleagues (2020)	To explore what and how medical students learn from patients with chronic conditions in the context of communication skills training.	Denmark	4th-year medical students (N=32)	Observations, focus groups and individual interviews	Thematic analysis
Vinson & Underman (2020)	To describe the character of emotional engagement in the contemporary clinical encounter	United States	Medical residents and 4th-year medical students (N=16)	Ethnographic observations of courses and clinical practice and individual interviews	Interpretive analysis
Laughey and colleagues (2020)	Explore how senior medical students' feelings about empathy change as they progress through medical school	UK	4th- and 5th-year medical students	Focus groups prompted by reading aloud students' love and break-up letters for empathy for patients (N=20)	Thematic analysis
Jobling & Alberti (2022)	Explore student perceptions of empathy development during medical school	UK	Final-year medical students	Individual interviews (N=10)	Thematic analysis
Pieris and colleagues (2021)	Explore how learners' experiences of medical training impact their moral empathy	Canada	Medical residents	Individual interviews (N=10)	Descriptive phenomenological analysis
von Knorring and colleagues (2019)	Explore the lived experience of empathy among medical interns	Sweden	Medical interns	Individual interviews (N=16)	Qualitative content analysis
Warmington and colleagues (2021)	Explore medical students' reflective essays about encounters with residents during preclinical nursing home placements.	New Zealand	2nd-year medical students	Reflective essays about experiences as caregivers in nursing homes (N=5)	Dialogical narrative analysis
Seeberger and colleagues (2020)	Investigate changes in empathy	Sweden	Final-year medical students	Reflective essays (N=69)	Qualitative content analysis

Rieffestahl and colleagues explored what and how fourth-year medical students learn from interviewing chronically ill patients during a communication skills course by performing both semi-structured interviews and focus groups with 32 students (103). The first author's role as both one of the developers of the course and as a researcher permitted her to both observe the students in interactions with patients and later to perform the interviews. In addition to the findings reported by Jeffrey and Costa-Drolon, Rieffestahl and colleagues described how the students not only wanted to be perceived as doctors being able to attend to the patient's emotions and needs but also expressed a need to be considered competent physicians. When trying to play the role of the medical expert, they were often challenged by knowledgeable patients who would also question their authority, something they reported as being uncomfortable.

Vinson and Underman examined medical interactions from a sociological perspective by conducting ethnographic observations and interpretive qualitative analysis of interviews of medical trainees to explore the role of emotional management within the larger concept of clinical empathy (104). The observations reported in the study consisted of ethnographic observations as well as notes taken during communication skills courses and workshops where both simulated patients and roleplay were employed, and the interviews were conducted with a few of the students or residents who had attended these courses. By stating that medical students not only attend to emotions as a means to effectively manage patients' emotions but also to make patients experience satisfaction and comfort in medical encounters, they effectively argue that emotional management should be understood as a form of emotional labor. Emotional labor "requires one to induce or suppress feeling in order to sustain the outward countenance that produces the proper state of mind in others" (111). They also distinguish between *feeling rules,* which refer to the feelings which are considered appropriate for an employee working within an organization to experience and *display rules,* which refer to the feelings which are considered appropriate to display outwards (111). They found that the communication skills courses or workshops provided to students were often justified by linking specific physicians' behaviors during clinical encounters to economic incentives such as better health outcomes and better patient satisfaction ratings. They also describe how students are taught specific *feeling rules* during encounters with patients and how some of these are allowed to be manifested as *display rules* in the form of specific ways of talking and touching the patient. They also argue as to how the skill of clinical empathy differs from a layman's understanding of empathy; instead of being a concept that acknowledges the perspectives of both parties of the interaction, the intentional attention and response to the patient's emotions during the history-taking is what makes clinical empathy emotional labor for which the clinician is reimbursed economically. They demonstrate through observations and interviews how these views on empathy as a clinical skillset were transferred and

ultimately reproduced between senior staff and students, e.g., by a faculty facilitator stating that some feelings, such as anger or sadness, are common feelings to experience as a trainee, but that their exposure in interactions with patients should be limited. Instead, emphasis was put on the observable behaviors displayed by students rather than their empathic experience, such as "remain and appear engaged" during history-taking. They elegantly demonstrate how display rules concerning the use of touch are taught, discussed, and employed in simulated clinical situations. They refer to a publication by Larson and Yao in which the physician's role in empathic interaction is compared to that of an actor (46). In this publication, a distinction between surface acting and deep acting is made, where surface acting describes engagement in empathic behavior without the empathic experience, but with a focus on interpersonal outcomes. Deep acting, on the other hand, refers to an attempt to enter an actual empathic relationship with the patient with the resulting experience of empathy. Whereas Larson and Yao claim that surface acting can be used as a point of entry into an empathic relationship with patients, Vinson and Underman frame their own findings as mere surface acting since students were never explicitly encouraged by senior staff to internalize these feeling rules as long as they were able to convincingly demonstrate them towards patients. Additionally, they demonstrate how there are strategic elements to the enactment of clinical empathy. Students were taught mnemonics which would enable them to exercise control over the space in which patients could freely express and vent their emotions, before giving them the opportunity to move on in the encounter. In the subsequent discussion of their results, the authors raise a pertinent question: are medical trainees left to sort these issues of emotional management themselves as internal processes which they dispose control over, or is it an issue situated beyond the control of the individual trainee which should instigate modern managerial control strategies at a higher institutional level? They more than insinuate that the increasing gap between physicians' work autonomy and the high expectation of empathy displays results in empathy fatigue and burnout among medical professionals.

Laughey and colleagues, on the other hand, invited 20 medical students in their fourth or fifth year to write love and break-up letters to 'empathy for patients' that were then read out aloud in focus groups to prompt further discussion (105). Both the letters and the focus group transcripts were analyzed using reflexive thematic analysis. The students reported that they considered empathy an art that would require continuous attention and effort throughout the rest of their lives, while at the same time acknowledging that there was a danger of empathy turning fake. They considered teaching on empathy to rely too much on empathic statements rather than empathic behaviors, and that this tendency became all too visible during assessments where they felt pressured to utter inauthentic statements which did not reflect their innermost feelings. This tendency was further

exacerbated by the use of simulated patients in empathy teaching scenarios where both the artificial nature and the resulting embarrassment of making these fake statements were considered by students to limit their empathic development. Students acknowledged that they also made disingenuous empathic statements outside clinical settings and the author termed the sense of discomfort which results from making such statements *empathic dissonance*. These findings bear much resemblance to what Jeffrey and Costa-Drolon had previously reported but also add important nuances to how students acquire and develop their empathy. Students also reported that the selflessness of entering an empathic relationship with patients was often considered a virtue and that the emotional impact of empathic encounters with patients made for more effective learning experiences.

Jobling and colleagues described how students had learned how empathy is not only an automatic passive process but can also be employed actively in some situations and thus requires effort on behalf of the student. The interviewed students also highlighted the need for real patients and patient stories to make students experience actual emotions. In contrast to the reported "empathy decline," the students participating in Jobling's study claimed that they did not perceive a decline in their own empathy. Instead, they reported that they felt less emotional in clinical encounters with patients compared to their first years of medical school, but now as they approached the end of their studies placed a greater emphasis on empathy. Some students reported that they now even disposed greater control over the ability to empathize with patients and that this ability made them able to overcome the desensitizing effect of seemingly endless numbers of patient encounters. The students also reported how assessments of empathy (e.g., during OSCE exams) led to students observing a moral dissonance between the display of empathy in actual patient encounters vs. situations where their empathic behaviors were assessed. Since they were aware of being assessed, they were more likely to deliver ingenuine or forced empathic statements which did not reflect what they actually felt inside (107). Pieris and colleagues' study focused on the moral underpinnings of empathy among medical residents. These medical residents acknowledged empathy as being present prior to initiating their medical training as an innate capacity. They further describe how, through their medical training, they became aware of how this innate motivation to help others in need could be used as a tool to connect with patients. Further, they mentioned how they felt that the importance of empathy was devalued again in instances where they were taught specific techniques to convey empathy, such as being taught to make use of acronyms in breaking bad news consultations. The participants in the study also pointed out how constant time pressure, combined with seemingly endless difficult patient encounters, could ultimately result in burnout, making it even more difficult to empathize with patients (108). Von Knorring and colleagues' publication added no new knowledge

of medical students' own views on empathy not previously accounted for above (106), and neither did the publications of Warmington and colleagues (109) or Seeberger and colleagues (110).

2.3.4   Reaching an operational definition of empathy in clinical encounters

One of the most important inspirations for the research presented in this thesis was Pedersen's critical review of empathy development in medical education (3). In this paper, he addresses the possible influences of the dominating elements of medical education (e.g., clinical reasoning and diagnosis) on medical students' empathy and other aspects of clinical understanding. He documents how biomedical and scientific approaches are still predominant in publications on empathy development and asks the pertinent question as to whether physicians should perhaps pay more attention to how their formal education (which for the most part consists of the acquisition of biomedical knowledge) has influenced and shaped their perception and judgments in real-life clinical situations. His conclusion is that this is almost never explored or discussed and that the gap between the physician's and the patient's understanding of the patient's situation is therefore rarely addressed. He goes on to write: "Thus, both scientific and non-scientific knowledge, values, practice conditions and experiences contributing to physicians' empathic understanding may be neglected." Further, he lists several publications in which empathic understanding has been treated as a humanistic add-on to the more hardcore scientific biomedical curriculum. He contests the claim that empathy is needed only in situations where it is necessary to understand the patient's illness or emotional reactions and argues that it is also necessary to adequately understand what is at stake for the patient, to adequately treat and diagnose patients, to not act against the patient's will and also illuminate that there are, in fact, two different horizons in the encounter, each with its own set of prejudices and opinions. It is mentioned in the article that there are some articles exploring between aspects of clinical understanding and empathy (e.g., one in which medical students' self-reported empathy scores have a positive correlation with assessments of their clinical competence (112)), but that the relation between the two concepts is treated only superficially and within a limited context. He concludes with the suggestion to open up for the clinician's situatedness and interpretations in clinical encounters and to acknowledge that there are framing effects in any medical understanding.

In the present thesis, I have applied Pedersen's definition of empathy as "the appropriate understanding and communication of the patient's experiences," which encompasses cognitive, affective, behavioral, and moral aspects (18, 81). The relational nature of the medical student/physician-patient relationship is highlighted by the use of the term "appropriate," which here emphasizes that it is first and foremost up to the patient to determine what is appropriate within a given context. To achieve an appropriate empathic understanding of her or his patient, the

student will therefore have to present, enter a dialogue and reflect on her or his own understanding and experiences during the clinical encounter.

In this definition, the term "appropriate" might at first glance appear a bit fuzzy and difficult to grasp. This term is first and foremost used to highlight that it is not only up to the medical practitioner to define the appropriateness of the student's expressed understanding of the patient's experiences, but also up to the patient to evaluate the appropriateness of this proposed understanding. This will of course require a rigorous investigation of the perspectives of both parties of the interaction, where we will have to gain insight into both parties' perspectives in the form of their expectations, perceptions, experiences, reflections, and knowledge. This view is heavily inspired by the core arguments of Gadamer's philosophical hermeneutics: interpretation and understanding will always be influenced by the subject's presuppositions and historic situatedness (e.g., perception, experience, practice, and knowledge). Because of this, empathic understanding will always be an attempt to merge two individual horizons of understanding and can therefore never be considered a morally neutral concept. This will also involve presenting preliminary and sometimes wrong assumptions about the patient's experiences, which can potentially put the medical practitioner in a vulnerable position. When attempting this in an actual clinical encounter and actually interacting with the patient, the medical practitioner (in our case, the medical student) will quickly be faced with her or his own insecurity and vulnerability.

Let us now finally review some of the empirical research into the communicative aspects of empathy in medical students performed after Pedersen's critical review, before addressing the knowledge gaps which this thesis is meant to fill.

2.4 EMPIRICAL RESEARCH ON MEDICAL STUDENTS' EMPATHIC COMMUNICATION

As with empathy, communication does not have one single, agreed-upon definition. However, most of them include information exchange between two or several people. Let us now first look at some of the key concepts employed in communication theory, and then shed light on how these approaches to analysis have been used to examine empathic communication in medical students from the perspectives of two different methodological traditions, interaction analysis (IA) and conversation analysis (CA).

2.4.1 Key concepts in research on health provider-patient communication

This thesis does not allow for an extensive presentation of research on health provider-patient communication in general but will rather aim to cover some of the key concepts within

communication theory. These key concepts will hopefully provide the necessary background information for understanding our study.

A prerequisite for interaction with others, whether in an interview or in an everyday conversation, is that we engage in turns at talk. A turn is *the* fundamental element within communication theory. A turn starts when someone initiates spoken communication with someone (or something) and ends when the next speaker engages in a next turn (or the communication comes to an end). While it takes at least 600 milliseconds to plan and execute even the shortest turn-at-talk, the average gap between turns is only 200 milliseconds (113). A turn may refer to whichever tiny bit of information within a communication; even withholding a response in the form of being silent may be defined as a turn, in that it implicitly communicates *disagreement* (114). Since every turn in a conversation is designed to perform a specific *act,* an *interaction* will therefore by necessity consist of an interplay of interconnected actions.

If we observe a typical everyday conversation, we will quickly see that a turn is almost always somehow related to the prior turn within the conversation (114). An everyday conversation may therefore also be understood as a sequence where speakers alternate at taking turns. Schegloff defined a sequence as it is conceptualized within CA, as "a course of action implemented through talk" (115). Schegloff further argues that sequences are made up of elementary sub-units called adjacency pairs. In an adjacency pair, a first-pair part (question, greeting, etc.) will typically suggest or project what the second-pair part in the next turn will be (answer to the question, greeting met with a greeting in return, etc.)**.** When identifying a turn within a conversation as a particular first-pair part (question, greeting), one can therefore also make more or less empirical claims about which action the next second-pair part will be (answer to the question, greeting in return). The existence of adjacency pairs also makes it possible to identify a first-pair part of an adjacency pair based on the identification of the second-pair part (finding an answer indicates that the preceding turn was a question, identifying a greeting suggests that the previous or next turn was also a greeting). In CA terminology, to make such predictions is defined as a speaker's *preference* for a particular response. Preference involves that any speaker will implicitly follow orderly principles across different interactional environments in terms of their further actions (116). Accordingly, one can also make predictions about what a *dispreferred* response to a particular action will be (*not* granting the requested information, initiating the conversation without offering a greeting in return) (117, 118). If an action is part of a larger sequence, the very character of the action is changed (119). Sometimes, as is also the case in clinical interaction, the conversation is restricted by the institutional conventions in which it takes place (120). The speaker will therefore have to bear in mind the

common knowledge, roles, and what information the recipient of the turn would not necessarily have access to before the conversation takes place (121).

Within clinical environments, research on communication has revealed that patients frequently convey their emotions through subtle indications of underlying feelings, commonly termed as "cues"(122-124) or "clues" (125). Emotions can also be more overtly articulated in clinical contexts, and they are sometimes specifically described in the literature as "concerns" (124) or "empathic opportunities" (126). Within the conceptual tradition of CA, displays of patients' emotional concerns have been described as personal "trouble" emerging within a storytelling sequence (also often referred to as "troubles tellings") (10, 127). These emotional events are, however, rare occurrences in clinical interaction, regardless of definition (124). Consultations without emotional expressions have been reported to be rather frequent, with 33-57% of all consultations within primary care and surgery containing none whatsoever. When present, they were reported to occur on average between one and seven times per consultation across all types of clinical encounters. The authors noted that these events were more frequent in consultations with female patients rather than male and that they were three times as likely to be patient-initiated rather than physician-initiated. Their frequency was also found to be related to the interview approach employed by the clinician (124). These emotional cues or concerns can contain information that could be relevant to both diagnosis and treatment, for example, past and present negative experiences with illness or treatment, difficulties coping with the present life situation, fears or uncertainty about their condition or recommended treatment, or even clues to underlying psychiatric disorders (84).

2.4.2   Interaction analysis (IA) and VR-CoDES

Interaction analysis is a relatively new method that entails direct observation, systematic coding, and quantitative analysis of clinical interactions (128). Generally, most interaction analysis systems (IAS) are based on Bales' distinction between socio-emotional and task-focused elements occurring in institutional interactions (129). The Roter Interaction Analysis System, commonly referred to as RIAS, is the IAS that has been most widely used to study provider-patient interaction in clinical settings (130). While task-focused physician behaviors in RIAS are directly related to the traditional roles of the physician (e.g., gathering medical information, conducting physical exams, educating and counseling patients), socio-emotional elements relate to behaviors aimed at constructing a sound and trustworthy relationship with the patient (e.g., building rapport, handling patient emotions, providing reassurance and empathy). However, based on the finding that there was a lack of consensus on how patients express their emotions in medical consultations (124), an international group of researchers sat down together in Verona, Italy, and developed a new IAS to aid in comparative research on emotional sequences of talk (131). Eventually, a separate system to code

healthcare providers' responses to these emotional sequences was developed – the Verona Coding Definitions of Emotional Sequences, abbreviated VR-CoDES. VR-CoDES is based on many of the same assumptions about communication as RIAS, but whereas RIAS codes all behaviors occurring within a consultation of both healthcare provider and patient from start to finish, VR-CoDES is used to selectively identify and code emotional talk taking place within clinical encounters (131). Due to the many complexities involved in emotional interaction, four methodological choices were made by the systems' developers (132):

> *[1] Emotional communication should be analysed in terms of ongoing sequences of talk-in-interaction, which includes a basic triad of an eliciting event, an emotional expression by the patient and the immediate response by the clinician*

> *[2] In assessment of emotional communication it is crucial to recognize that emotions are, more often than not, expressed as vague cues rather than explicit emotions. This requires a very specific and detailed definition of cues to feelings not explicitly expressed*

> *[3] The immediate or possibly the delayed response of the clinician should be assessed. A logical parallel to the explicitness of emotion in the patient's expression is the degree of explicitness of the clinician's response to the patient*

> *[4] In order to assess the function of the clinician's response for the continued dialogue about emotions, it is relevant to code whether or not the clinician's response provides room for further disclosure of the patient's expressed emotion.*

To perform a typical VR-CoDES coding, one makes use of video- or audio-recorded material, usually in the form of recorded clinical encounters, and applies different labels or codes (I will refer to these as categories) to each of the behaviors occurring within the encounter, so that one ends up with quantifiable data which can be further processed using computer software. The first step is to *unitize* the recorded material into smaller parcels that can be further categorized. There is no standard procedure in *unitizing* other than that it must be based on explicit decision rules (128). The next step is to categorize each of these units within a set of categories, which is usually the hallmark feature of the coding system. A necessary precondition for these categories is that they must be *mutually exclusive* in the sense that each unit can be placed in only one category, and *exhaustive* in the sense that every unit can be categorized.

One method for studying empathy in medical students is therefore to specifically focus on how students respond to patients' negative emotional expressions within clinical encounters. In an

attempt to explore the relationship between the JSE-S and patient-centered communication in 84 third-year medical students, LaNoue and Roter (133) asked students to complete the JSE-S before an objective structured clinical exam (OSCE). The OSCE exam simulated an encounter where the topic was colon cancer screening and was audio-recorded. The recordings of these encounters were then coded with RIAS. In RIAS, the cluster of students' responses, called Emotional Responsiveness (categories included empathy, legitimization, showing concern, partnership statements, and self-disclosure), was found to significantly correlate with self-reported scores of the JSE-S, while student behaviors coded as psychosocial data gathering and biomedical education and counseling were found to have a negative correlation with student scores. According to the authors, this suggests a possible correlation between the JSE-S and patient-centeredness.

Zhou and colleagues (134) investigated how 40 medical students handled simulated patients' negative emotions in an OSCE setting by coding the encounters with VR-CoDES. They found that the students' responses varied according to which cues they were represented with. Provide space responses were offered when emotional cues were presented in vague and unspecific wording (cue A – please see appendix for further detail on the further subdivision of cues and concerns) and reduce space responses were predominantly offered when cues emphasized physiological or cognitive correlates (cue C). They also found that as the consultation approached its end and when the patients' turn lasted longer, the students were less likely to explore patients' emotional concerns. Also, as the patient cumulatively offered more cues during the consultation, the student was more likely to reduce space for further exploration of the negative emotion. However, no significant correlation was found between the patient's rating of the student's performance and reduce space responses.

In a more recent study conducted by Klöckner and colleagues, the relationship between self-reported cognitive aspects of empathy measured by Hojat's JSE-S and behavioral aspects of empathy measured by student's responses using VR-CoDES (135) was examined in a dataset of video-recorded clinical consultations conducted by 14 students on a simulated patient playing the role of an actual patient. The 14 participating students were divided into *low* and *high* scorers based on their obtained scores on the JSE-S prior to the consultations. In this study, no significant difference in the expression of verbal empathy was found between the two groups.

In contrast to using IA as a method, the approach used in CA does not require the process of unitizing interactional events based on explicit decision rules and neither operates with exhaustive or mutually exclusive categories.

2.4.3 Conversation analysis (CA)

The method of CA studies social interaction in its naturally occurring context using detailed transcriptions of actual conversations. CA is primarily concerned with the "why that now" of conversation – by rigorously studying the organization of turn-taking in different conversational environments as situated social actions, inferences about the "rules" or norms of conversation can be made. One area of interest for conversation analysts has been institutional conversations. Beginning with the observation that patterns of turn-taking in institutional conversations differ from that of normal conversation, one has been able to identify how the organization of turns-at-talk in institutional conversations are constructed so as to realize particular institutional agendas.

In clinical encounters with patients, healthcare providers may display their understanding of the patients' actions as *alignment* with the ongoing activity of storytelling, defined by Stivers as "acknowledging the information provided and supporting the progress of the telling" (136). Healthcare providers may display alignment to these storytellings with continuers such as "mhm" or acknowledgment tokens such as "right" or "yes" (137), which suggest that the healthcare provider refrains from further interviewing and lets the patient complete her or his storytelling (138). While students' aligning actions will signal that the patient momentarily has "control" of the "floor" of the conversation until story completion, disaligning actions will compete for the floor and fail to treat the story as still in progress, for example, by interrupting with a new information request.

CA studies on empathy in clinical encounters (or the related, more technical term affiliation) have mainly focused on how healthcare professionals orient to patients' displays of affect while at the same time attending to their institutional task of recording the medical history (12, 13, 127, 139-144). The term affiliation designates a storyteller recipient's access to and/or understanding of the teller's emotional experience and is a useful concept to describe how actions designed for other purposes may also serve to empathize or affiliate with the reported experiences of the storyteller (136). Affiliative responses are at their most pro-social when they align with the prior speaker's evaluative position concerning the reported experience, demonstrate empathy with the reported experience, and/or collaborate with the stated preference of the preceding action (145). For example, information requests may prospectively introduce new topics to the interaction which in some way include the patient's experience (e.g., "How do you feel about the diagnosis?") or follow the patient's emotional expressions and include presuppositions or knowledge about the patient's experience (e.g., "it seems you were quite upset by the diagnosis?"). However, questions also define the range of possible answers, (e.g., answer yes/no, clarify, elaborate) which may discourage or exclude the patient's experience from being a further topic in the encounter (142, 146). Paraphrases or formulated understandings of a patient's information delivery (requests for clarification typically

prefaced by "so…" or "and…") selectively include or exclude the patient's experience from the further agenda and usually appear right before the topic change (12, 140). Additionally, interviewers may generally acknowledge the provision of information with a non-specific neutral acknowledgment ("right") or acknowledgment suggesting a non-specific understanding of the patient's experience ("exactly") which often precede topic change (12). Finally, assessments of the patient's emotional experience may claim knowledge of or access to the patient's experience which may suggest that the interviewer supports or agrees with the evaluative component of the patient's emotional experience (13, 121, 147). No studies have, to my knowledge, specifically examined how the intricate balance between attending to the patient's affective condition while at the same time recording the medical history is done in students' clinical encounters.

2.4.4   Knowledge gaps

Taking a brief look at the extensive review of relevant literature presented in the background section, it should now be clear that most communication between medical students and patients takes place while the student is recording the medical history of the patient during the clinical encounter, and that there are several knowledge gaps regarding empirical research on empathic communication in medical students.

Although there are several studies using IA to study medical students' responses to emotional issues in clinical settings (133-135), I have not been able to identify any previous studies which have examined medical students' responses in detail employing qualitative approaches. Additionally, two of these studies were conducted in an OSCE setting with the use of simulated patients (133, 134), making it more likely for students to make insincere empathic statements (105). The OSCE is an exam situation where students are under a lot of pressure, and medical students have previously argued that under such circumstances they would feel pressured to employ a "fake" form of empathy in order to achieve better marks (148). The third study made use of actors posing as real patients but rather had the aim of exploring the relationship between behavioral empathy as measured by the different VR-CoDES response categories and the self-report measure JSE-S discussed above. It would therefore be of interest to gain in-depth knowledge of how students respond to emotional issues within clinical encounters.

Secondly, we know, through Mishler's and subsequent studies (78, 80), how the patient's voice of the lifeworld struggles to gain the attention of the general practitioner's voice of medicine. I have also demonstrated how the concept of empathy is more often than not isolated and separated from other tasks or skills such as clinical reasoning (4) and is often treated as a separate affectively- or relationally-orientated skillset in guides on medical interviewing (6, 7). And although I have been able

to find publications on the interactional functions of empathy in clinical encounters, these have mainly addressed how graduated or qualified healthcare personnel manage to deal with the patient's health issues while simultaneously focusing on the affective dimension of the patient's experiences (12, 13, 127, 139-144). No studies have, to my knowledge, examined the specific interactional functions of empathy in medical students' clinical encounters.

Thirdly, in Pedersen's critical review, no studies were found that investigated the concrete experiences and interpretations of either physicians or students during clinical encounters (3). And although there have been many qualitative studies on how medical students view and experience their own empathy throughout medical school (95, 96), I have not been able to find any studies on students' perceptions, experiences, and reflections about their own empathic understanding in concrete clinical situations. We also know little about how students interpret patients' emotional issues in terms of how they would describe their own mental processing of the patient's emotional issues during clinical interaction with patients.

Fourthly, Pedersen found that only one-sixth of the studies included in his review on empathy in medicine included more than one perspective or method (3). No studies on medical students' empathy have, to my knowledge, combined observational methods to data collection, e.g., by exploring if and how medical students express empathy to patients during clinical encounters, with that of a phenomenological method of data collection by gaining the inner experiences of these same students while attempting to communicate their empathic experience to the patient.

3 AIMS AND RESEARCH QUESTIONS

The overarching aim of the study was to investigate empathy in detail during medical students' clinical encounters using multiple methodological approaches and perspectives on empathy.

In paper 1, the aim was to explore qualitatively how medical students verbally interacted with patients expressing emotional issues in a clinical encounter by employing the basic triad of VR-CoDES as a conceptual framework (*a potential eliciting event → patient's emotional expression → medical student's response*), and the research questions were to investigate:

1. to what extent the students more or less explicitly referred to the patient's emotions in their response,
2. whether they provided room for further disclosure of the patient's emotions, and
3. whether they acknowledged the patient's experience and their own perspective, or responded only with a factual, descriptive recognition of emotions.

In paper 2, the aim was to analyze the same clinical encounters using conversation analysis (CA) as an approach to analysis and thus to compare, supplement, and contrast insights gained from paper 1. The research question was, therefore, to examine whether the function of the students' utterances (in CA also understood as actions) could be perceived differently in the context of larger sequences of talk as in CA, and more specifically how emotional issues were handled.

In paper 3, the aim of the study was to explore students' perceptions, experiences, and reflections when trying to empathize with patients expressing emotional issues within these same clinical encounters in subsequent qualitative recall interviews. The research question was formulated as what characterizes students' perceptions, experiences, and reflections when empathizing with patients expressing emotional issues in a concrete medical interview.

4 MATERIALS AND METHODS

4.1 STUDY DESIGN

The present study employed multiple methodological approaches and perspectives on empathy to investigate medical students' clinical encounters in detail. Another term for such a multiple-method research design is triangulation, a term which I will return to when I present, discuss, and compare the different ways in which we analyzed our data (149-151). Papers 1 and 2 are both video-based observational studies, while paper 3 is a qualitative interview study. Papers 1 and 2 are qualitative analyses of the same video-recorded observations but studied in detail using two different approaches to analysis. These video recordings were of medical students' clinical encounters with simulated patients (SPs). Paper 3 is based on audio recordings of stimulated recall interviews with the same medical students taking place shortly after each clinical encounter was completed. In this phase of the data collection, selected video clips were shown to each student depicting themselves in the previous clinical encounter with the SP and presents the students' reported experiences during the video-recorded clinical encounters. To clearly distinguish between the two sources of data in the present thesis, I have made the choice to separate between two phases of data collection: the video-recorded clinical encounters together constitute *the clinical encounter phase* of the data collection, whereas the subsequent recall interviews together constitute the *recall interview phase* of the data collection. Each of the participating students completed both phases of data collection. Since the SPs were both participants in that they acted out the role of actual patients, and also contributed to the development of the patient's medical case, they will be described both under the participants and the procedures section. See Figure 1 below for an overview of the three studies with corresponding publications.

Figure 1. Overview of study with corresponding publications
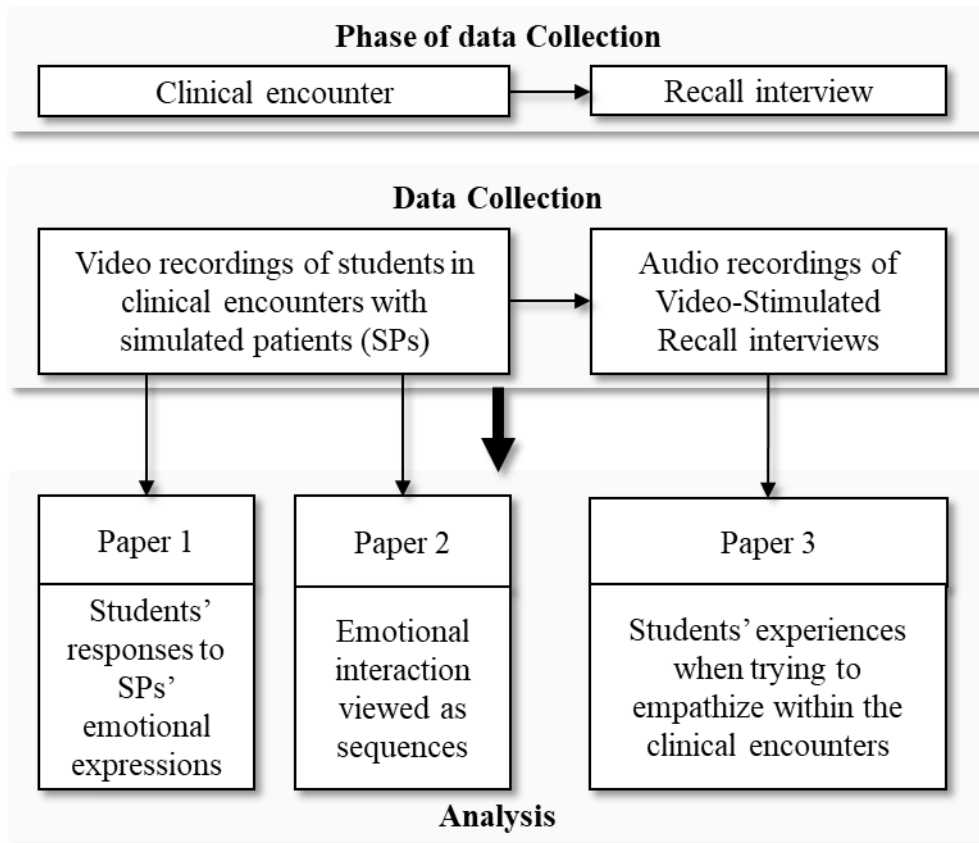
During the clinical encounter phase of the data collection, SPs were instructed to express emotional experiences to each of the 11 students, and papers 1 and 2 therefore present two contrasting and complementary insights into the students' responses or interactions with these emotional experiences. In the following recall interview phase, each of the 11 students was invited to share their perceptions, experiences, and reflections after having observed themselves responding to SPs' emotional experiences in a series of video clips and interviewed after each clip in a data collection strategy commonly referred to as stimulated recall interviewing (152).

The data was collected as part of a larger research design developed to study empathy in medical students by also employing neurobiological approaches to data collection. In addition to the data collection procedure described above, levels of electrodermal activity (EDA) were also collected from both student and SP during the clinical encounter. Additionally, individual in-depth qualitative interviews of all students on their experiences and perspectives on empathy as medical students were also conducted after the video-stimulated recall interviews were finished. The EDA part and the in-depth interview part were both the subjects of individual dissertations written and defended to complete the medical student research program and will be briefly accounted for below.

4.2 PARTICIPANTS

The study included 11 third-year medical students and four actors portraying the role of patients.

4.2.1 Medical students

The 11 medical students were in their first year of clinical practice (second semester of their third year) and therefore had some patient experience. This group was selected as our study population because they were in a phase of their study period previously described as crucial to students' empathy development (2, 102). We employed the sampling strategy of purposive/purposeful sampling (153-155) since we were interested in gaining new and thorough insights with a small number of participants rather than being able to generalize findings to a larger population (149).

4.2.1.1 Recruitment

Approval to recruit students was obtained in advance from the Norwegian Medical Student Association and the Dean of Studies at UiO. All students were recruited via an introductory plenary lecture in connection with a mandatory experiential clinical communication skills course. We were granted permission to approach the students directly by giving a short presentation of our study during this lecture. Shortly afterward, a list was sent out in the lecture hall where interested students could write down their names and contact information. Consent forms were also made available. Voluntary – written and oral – informed consent was obtained from all students prior to conducting the study.

To increase variation and decrease the probability of recruiting particular subgroups of students, students were recruited from two different semesters. A total of 19 students from the two semesters signed up. These were all subsequently contacted by telephone. However, only 11 students ended up participating due to considerations made by the research group that the richness of the data was sufficient to answer the research questions (156). In the first recruitment, 11 students signed up, and six of these students participated. The sessions were carried out partly after the end of their semester, and the students who did not participate did not have the opportunity to participate because of the summer holidays. In the second recruitment, eight students signed up and five of these participated.

4.2.1.2 Context of students

All 11 students had recently completed prior mandatory courses in communication skills as part of their medical training, including an experiential clinical communication skills course with real patients where they practiced "gaining the patient's perspective" while conducting a medical interview. The students had also all spent the last year learning and practicing clinical skills such as medical interviewing, physical examination of patients, differential diagnosing, and further patient follow-up

with the use of roleplay, simulated and real patients at a university hospital. One requirement for the 11 students was that during their third year, they were to independently conduct a minimum of 12 medical interviews and physical examinations of new admissions at a hospital. These were then to be approved by a faculty representative and documented as a standardized admission note in the patients' permanent medical records. During their preclinical years, all students had been given notice to familiarize themselves with the layout and wording of this standardized admission note. The admission note is a standardized written document that has a formal structure where there are slots for students to fill out, such as the reason for the patient's admittance, social status, and work history, hereditary diseases in the family, prior medical history, a description of the present complaint, recent changes in bodily functions, medications, drug, tobacco or alcohol use, whether the patient has any allergies, a detailed account of physical examination as well as a final summary (86, 157). An example of a typical admission note can be found in the appendix in the form of the patient's case description. They had also learned that if they already knew the disposition and normal descriptions of the standardized admission note by heart, there would be far less danger of forgetting important questions which should have been asked during the interview.

In the patient-centered guide to clinical interviewing which was on the students' curriculum (158), the authors employ Lazare and colleagues' three functions in the medical interview (159), and present these functions in three subsequent chapters: (1) to determine and monitor the problem; (2) develop, maintain, and conclude the therapeutic relationship; and (3) carry out patient education and implementation of treatment plans.

A brief summary of this guide is that it describes the difference between open and closed questions, the importance of non-verbal communication for both healthcare providers and patients, the asymmetric nature of the relationship between the two parties, the difference between task-oriented and emotionally-oriented aspects of the clinical encounter, the structure and phases of the typical consultation (e.g., how to establish contact, listen to what the patient has to say, establish a trustworthy relationship with the patient, mapping out the patient's current concern as well as the patient's medical history and common mistakes committed when conducting an interview), advice on focusing on what's important for the patient, making use of opportunities to show empathy, how to interview about emotional topics, how to account for a physical examination and further follow-up, how to provide information, basic health information and advice to patients as well as advice on how to end a consultation. In the section on making use of opportunities to show empathy, empathy is presented as putting oneself into how other people are feeling and describes empathy as having three aspects: (1) the ability to detect that the other individual is feeling something within a given situation as well as which feelings the other is experiencing, (2) the ability to be moved by this feeling

yourself, and (3) the ability to meet the other persons feeling with a reply, an acknowledgment that the message is received and understood. Additionally, it briefly describes the previously mentioned mnemonic NURS (Naming or labeling the emotion ("That seems sad for you"), Understanding or legitimizing ("I can imagine that must have been quite upsetting"), Respecting ("You've really dealt remarkably well with this"), Supporting or offering partnership ("Together, I think we can get on top of this") from Smith's patient-centered interviewing as a useful tool in stressful interview situations (6).

An overview of the medical curriculum at the time when the study was conducted can be found in the appendix.

4.2.2 Simulated patients

Four female actors were hired on an hourly basis from a pool of actors available to the department responsible for the study to play the role of actual patients. A simulated patient (alternative terms are standardized patient, sample patient, or patient instructor) is an actor trained to enact the role of an actual patient by simulating selected symptoms of illness (86). Simulated patients have previously been reported to portray patients accurately so that the healthcare provider is not able to tell the difference between the SP and a real patient (160). Women were chosen since they are known to present more cues to affect in clinical settings than men (124).

4.2.2.1 *Why did we not make use of real patients?*

This decision was made after several experiences from a pilot study in which we invited actual patients to participate in the study. During autumn 2010 we conducted a pilot where medical students conducted medical interviews in clinical encounters with real patients with chronic rheumatoid arthritis. These patients were also used during the previously mentioned course on "gaining the patient's perspective." However, coordination of these consultations proved difficult because the patients were often too sick to meet or would cancel the arranged appointment on short notice.

As a result of the pilot study, the research group considered the possibility of using actors playing the role of actual patients. Numerous discussions and considerations on how to implement the use of SPs were done within the research group. Please see further details about these considerations in the section on ethics below.

4.3 PROCEDURES AND STUDY SETTING

4.3.1 Study setting

The entire data collection procedure, including the clinical encounters and the subsequent recall interviews, was performed in a communication lab set up to resemble a general practitioner's office. The setting of general practice was selected since all students had previous experience with this setting from mandatory placements in general practice which lasted one week during their first year, and since this is the clinical setting (except for oncology and psychiatry) where emotional issues are most likely to be presented by patients (124). Each student was provided with a white coat to wear during the clinical encounter. During the encounter, the student was sitting at an approximately 90° angle from the SP which allowed for the camera to gain maximum visibility of both the SP's and the student's facial expressions and body silhouettes during the entire clinical encounter. This seating position is also the recommended sitting position in the guide on medical interviewing which was on the students' formal curriculum (158).

During the subsequent tape-recorded recall interviews, the student would sit in front of a computer screen and be shown pre-selected video clips from the recent clinical encounter. The computer screen would depict themselves responding to a selection of the patient's emotional concerns and they would be interviewed on each of these clips according to a semi-structured interview guide which is further described below. Picture 1 below is an edited and anonymized screenshot from one of these video clips.

Picture 1. Edited and anonymized screenshot from one of the clinical encounters.

4.3.2   Procedure for data collection

Prior to each of the 11 clinical encounters, the students received standardized written instructions on the assignment ("The goal of the consultation is to identify the most important features of the patient's health condition") as well as a fact sheet on the diagnosis of the patient. We purposely gave the students a task that was very similar to what they would have been given in a typical clinical training situation.

One of the researchers then waited outside the communication lab until the student gave an oral notification that she or he was ready to receive the patient. This researcher then entered the room together with the SP and another researcher.

Equipment for measuring the electrodermal activity (EDA), a continuous measure of the sympathetic nervous system, was fitted on the index and middle fingers of both the patient and the student.[5] The medical student was then instructed to begin the clinical interview of the patient which also marked the start of the clinical encounter phase of the data collection. During the clinical encounter, a minimum of two members of the research group supervised the procedure from another room through a video link. After a period of 18 minutes, a member of the research group entered the communication lab and gave an oral notification that the medical student had two minutes left to finish the medical interview. When the two minutes were up, both researchers entered the room which also marked the end of the clinical encounter phase of the data collection procedure. The student was then led to a nearby room whereas the SP remained seated.

Shortly after, a separate phase of the data collection started which I henceforth will refer to as the stimuli collection phase. During the stimuli collection phase, the SP reviewed the entire video recording of the encounter on a computer screen sitting beside the two researchers. The SP was

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[5] To test the hypothesis whether synchronicity between the two individuals could be observed. This part of the study will however not be described further since it was the subject of a medical student research dissertation defended in 2013 where results were found to be inconclusive (most likely due to individual differences such as innate physiological differences, personality types, differences in coping styles or previous experience). The title of this dissertation was "Empathy in medical students: An experimental study of the relationship between emotions and electrodermal activity in simulated clinical encounters" (can be provided upon request).

instructed to point out specific moments during the playback of the video where they expressed emotion towards the student and interviewed about each of these moments according to a semi-structured interview guide (see appendix). The two interviewers (HES and KØB) alternated on being the lead interviewer in each interview data collection session while the second interviewer made sure we did not miss any relevant information, and, if so, posed supplementary questions. The SP was asked to leave the room shortly after which then marked the end of the stimuli collection phase.

The medical student was then picked up from a nearby room and upon entering the lab the recall interview phase started. During this phase, the student was interviewed according to a technique commonly referred to as video elicitation (161) or stimulated recall interviewing (152) which is commonly applied in educational research to stimulate reflection on critical moments during video-recorded interactions (152, 161, 162). The student was asked to sit down in front of the same computer screen and was shown a selection of video sequences collected in the previous stimuli collection phase. The selection was made by the two researchers based on emotional concern (EC) moment evocativeness and considerations of the student's time restraints. These were used as stimuli for the student's recall of the events depicted in the videos and will hereon forth be referred to as EC sequences. These video-stimulated recall interviews were audio recorded.

Directly after the recall interview phase was over, a fourth in-depth interview phase was initiated without turning off the audio recorder. The data collected after this point in time is not the subject of this thesis and will only be briefly presented. The in-depth interview phase included individual qualitative interviews on the students' experiences and perspectives on empathy in medical school with the same 11 students. These in-depth qualitative interviews were the subject of a medical student research program dissertation as well as a subsequent publication by the other interviewer (HES), and are therefore not included as partaking in the present thesis (18). After the in-depth interview phase was finished, the medical student was informed that the patient was in fact an actor portraying the role of a real-life patient. The decision to not inform students beforehand that the encounter was with an actor is further discussed under separate sections on ethics and ethical considerations below.

4.3.3   Patient case

The case chosen was a patient case with polycystic kidney disease (PKD) from a standardized written case developed by KØB, HES, and RP in collaboration with the four actors (see appendix). All four actors participated in meetings with three members of the research group (KØB, HES, RP) where they were asked to give feedback on the patient case and given guidance on how to present the case. They were also handed a copy of the patient's case to take home to practice. The case was chosen

because the students possessed newly acquired knowledge about this disease after completion of their fifth semester where kidney diseases were on their curriculum. This disease was also a convenient choice because it did not alter or affect the patient's physical appearance, and thus made it credible with a healthy-looking patient. During ward rounds, students would also normally have to conduct a physical examination after a medical interview was recorded, but in this context, the student was instructed to record "parts" of the medical history without performing the subsequent physical examination.

The actors were instructed to display emotions related to two problematic situations in the patient's life during the clinical encounter: (1) emotional worry attributed to the patient's insecure future for her and her family, resulting in sleep disturbances, and (2) anger/frustration with the father's primary care physician due to a long delay in the diagnosis of polycystic kidney disease (autosomal dominant inheritance) making it impossible for the father to have transplant surgery because of his age and medical condition (and therefore dependent on dialysis for the rest of his life). The actors (henceforth "patients") could freely choose when they would express these emotional experiences but were instructed to do so several times at varying intensities and with verbal as well as non-verbal behavior (both in the form of emotional hints/cues and more explicit emotional concerns).

4.3.4 Semi-structured interview guides

The development of the interview guides was inspired by Pedersen's suggested questions and topics for future research (3, 4), and was discussed and revised in a series of meetings with all four researchers present (AF, RP, HES, KØB). The two interview guides (one used in the stimuli collection phase with SP and the other in the recall interview phase with the student) were mainly used to prepare and guide the interviewers through the interview process. It also made sure that the interviewers did not miss any important questions. Introductory questions (see appendix) were followed up by different types of interview questions and second questions (163). When deemed necessary by the interviewers, additional questions were asked to obtain more detailed responses.

Additionally, a third interview guide was also developed for use in the in-depth interview phase with the student, but this is not included in the appendix since data from this part of the data collection was not used in the present thesis.

4.3.4.1 Simulated patient (SP) edition

During the stimuli collection phase, the SP was shown the entire video recording of the clinical encounter and asked to stop the playback of the video at points in time where emotion was being exhibited (see appendix for further details). The SP was further asked to elaborate on which particular feeling was conveyed. Further, she was asked if she planned to exhibit emotion and if what

she experienced felt like she would experience her own private emotions. The SP was then asked about how the communication or mutual understanding between the two was in this particular part of the consultation. To clarify, it was further asked how she experienced the response of the student as well as how she would rate the chemistry or contact at this point. These interviews were audio recorded.

4.3.4.2 Selection of video material for the video-stimulated recall interviews

During the following recall interview phase, Noldus Observer XT 9 software was used to select and display the EC sequences intended to stimulate the recall of the students' previous experiences during the clinical encounter. The EC sequences started approximately 30 seconds before the EC moment indicated by the SP and ended approximately 30 seconds after. Some EC sequences included more than one EC moment since several EC moments could be registered within the one-minute EC sequence. Due to time constraints, not all EC moments were shown to students. Instead, the researchers (HES and KØB) would show as many ECs moments as possible and make sure all students viewed at least one EC sequence from each of the two problematic situations. The choice of which EC moments to show students was made by the researchers based on EC moment evocativeness and displayed chronologically in the order they appeared in the video. We made sure that all students were shown at least one EC moment from each of the patient's two problematic situations. The number of EC sequences shown to each student ranged from two (containing four EC moments with a total duration of 2 minutes and 43 seconds) to seven (containing eleven EC moments with a total duration of 7 minutes and 23 seconds).

4.3.4.3 Student edition

During the recall interview phase, the student was interviewed according to the questions formulated in the interview guide (see appendix). The stimulated recall interviews were initiated with a general introduction where all students were thoroughly given notice that this procedure was not an examination of any kind, merely an attempt to share thoughts and experiences about interviewing a patient about their health condition. In this general introduction, they were also told that "we (the researchers) also have a video recording of the encounter, but it is at least as important to hear your thoughts/try to understand what you think about the interview/conversation between you and the patient." Further, the student was instructed for each viewing of each sequence to try to remember what she thought or felt *during* the consultation, not what she thought or felt about it at the moment of the recall interview (see appendix for further details). After viewing each sequence, she was asked if she could remember what – in that particular situation – she thought or felt that the patient was trying to convey to them. It was further elaborated on whether the patients' expressions/emotions did something to the student and if they could remember what influenced

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their reaction or response towards the patient. The student was then asked how they found the communication or mutual understanding between them and the patient. Again, to clarify, it was further asked how the student experienced the chemistry or contact at this point. They were also asked about their thoughts on why they communicated as they did and what they thought about this particular sequence.

To demarcate the finish of the recall interview phase and as an introduction to the in-depth interview phase of the data collection mentioned above, the general interview phase was initiated with the introductory question: "How did you experience this/what do you think about this?" where "this" referred to the entire data collection process prior to the general interview phase.

4.3.5   Transcription of data

Shortly after all the interview data was collected, interviews from all phases of data collection were transcribed verbatim by HES and me. Additionally, I performed detailed transcriptions of the clinical encounter phase according to the methods specified below. All subsequent translations into English used in all three papers were performed by the main author under the supervision of both supervisors.

4.4   DATA COLLECTION METHODS

4.4.1   Video recording of clinical encounters

To minimize invasiveness during the clinical encounters, we decided to watch the interaction in real-time from another room via a video link and to video-record the interaction. In this way, we were able to intervene on short notice, without influencing the behavior of either patient or medical student. The camera was placed beforehand on a tripod in the room where the clinical encounters were effectuated.

4.4.2   Stimulated recall interviews

To collect data about the medical students' experiences during the EC sequences, we made the decision to make use of stimulated recall interviews. During these interviews, the medical students were invited to recall their experiences when prompted by video footage.

Henry writes, "Video elicitation interviews are most useful for investigating social or interactional components of physician-patient interactions that cannot be adequately understood by either direct observation (e.g., video recordings) or interviews alone" (161). Since we were interested in both cognitive and affective aspects of the students' empathic experiences *during* the clinical encounters, we interviewed the student about both their thoughts and feelings during the EC sequences. We paid

particular attention to the instruction given to students beforehand so that they would provide us with their accounts of their own experiences *during* the EC sequences depicted on the video, and not provide reconstructions or reflections on their thoughts and feelings at the moment the interview took place (152). To minimize the duration between the clinical encounter and the recall interviews, and thus to maximize the use of the medical student's short-term memory capacity, we spent a maximum of 45 minutes on the stimuli collection phase with the SPs needed to identify and select EC sequences. Unless mentioned by the student, the word "empathy" was intentionally not mentioned by the interviewers during the recall interview phase to avoid social desirability bias. Social desirability bias can be defined as the tendency for participants in a study to provide answers in a way that would make the participants be viewed favorably by the interviewers (164).

4.5 ANALYSES OF DATA

Papers 1 and 2 both made use of two different approaches to data analysis of the clinical encounter and will therefore be treated under the same sub-heading. Paper 3 was the result of qualitative content analysis of the subsequent recall interviews and will therefore also be treated under a separate sub-heading.

4.5.1 Analyses of the video-recorded clinical encounters

4.5.1.1 Paper 1: VR-CoDES and qualitative content analysis

The analysis in paper 1 consisted of two consecutive steps: (1) identification of emotional sequences within the clinical encounters with the use of the interaction analysis system VR-CoDES, and (2) qualitative content analysis of the student's utterances related to the patient's emotional expressions (EEs).

4.5.1.1.1 Procedure for identification of emotional sequences (VR-CoDES)

To answer the research questions posed in paper 1, we first identified the emotional sequences consisting of patients' emotional expressions and student utterances related to these expressions according to instructions from VR-CoDES within the 11 clinical encounters.

As noted in the background section, "Interaction analysis…entails the direct observation, systematic coding, and quantitative analysis of clinical interactions" (128). The VR-CoDES system is separated into two consecutive parts. The first is the coding of EEs uttered by patients (colloquially referred to as "cues and concerns") which may or may not be elicited by the healthcare provider (131, 132, 165). This can be used alone or in combination with the second part, which is the coding of the healthcare providers' turns of talk related to these EEs (131, 132, 165, 166). When applying both parts of VR-CoDES to a clinical encounter that contains EEs, one will end up with sequences consisting of *a triad*

of (1) an eliciting event, (2) an emotional expression uttered by the patient, and (3) the immediate response by the clinician. A set of VR-CoDES manuals provided us with consensus-based, detailed instructions on how to identify and categorize patients' emotional expressions in medical encounters, health providers' responses to these, as well as a rationale for dividing the 11 clinical encounters into units of analysis (manuals available online (165, 167, 168)). These manuals thus provided us with a framework or template for the further analysis of the interaction.

One of the methodological choices made when developing VR-CoDES was to base the analysis of emotional communication in terms of ongoing sequences of talk consisting of an eliciting event, an emotional expression (defined as a turn containing either a cue to underlying emotion or an emotional concern) uttered by the patient, and an immediate or delayed response by the healthcare provider (132). The healthcare providers' responses are coded according to two separate dimensions: whether or not the response (1) *explicitly* refers to the preceding cue or concern in terms of wording or key elements, and (2) has the function of either *reducing* or *providing* space for the patient to disclose the cue or concern further. Additionally, when coding responses in terms of explicitness, one must also determine whether the healthcare provider refers to the content or the affective component of the patient's EE. Based on study aims and research questions, researchers can also (if they wish) choose between 17 individual sub-codes of responses. Among these 17 sub-codes, one finds *implicit empathy,* which is defined as "any response which provides space for further disclosure through having an empathic function, without asking explicitly for further clarification or specifically mentioning the nature or the emotion of the cue or concern" (as in "I understand" or "that sounds hard"), as well as *empathic response* defined as "a health provider behaviour which empathises with the patient predicament. The provider legitimises or shares the patient's emotion, with or without reference to provider's own feelings." One example of an empathic response referred to in the manual is "I imagine that this must be really hard for you, especially as you are so scared about this operation. It must be difficult waiting…" Since only the framework or template of VR-CoDES was used to make sense of the emotional communication in the clinical encounter, none of these dimensions or sub-categories were employed in the further analysis in paper 1.

4.5.1.1.1.1   *Coding procedure*

For paper 1, the VR-CoDES were chosen as the first step in the analysis to identify EEs uttered by the simulated patients. VR-CoDES has been shown to capture important elements of emotional communication in clinical settings (131). This was primarily done to locate the parts of the clinical encounter where emotional issues were discussed and to then explore further how the medical

students responded to these EEs with the use of qualitative content analysis as specified in the research questions.

Subsequently, all patient utterances or turns were identified by the first author as EEs if they contained emotional cues or emotional concerns according to VR-CoDES instructions (165). In the VR-CoDES manual, a cue is defined as a: "verbal or non-verbal hint which suggests an underlying unpleasant emotion and would need a clarification from the health provider" whereas a concern is defined as a: "clear and unambiguous expression of an unpleasant current or recent emotion where the emotion is explicitly verbalized." The VR-CoDES manual lists a number of different cue types (a through g) which are described further in the appendix.

Examples of cues and concerns from the interviews are shown in Table 2.

Table 2. Examples of patients' emotional expressions (EEs) from the interviews

Concern: Clear verbalization of an unpleasant emotional state	It is pretty scary when you are this young and this suddenly happens
	I am very frightened that I'll be as tied up as he is
	Yes, it's very frustrating
	I can get so furious when I think about it that I
	And I became a bit worried because it was strange, you know
	It makes me really angry you know, he can make up excuses all he wants and I'm sure he means it, but
	I really hate that disease.
Cue: Expression in which the emotion is not clearly verbalized or might be present	And I am thinking like, what is going to happen now?
	And now there is nothing they can do about it.
	That's when it comes, when I go to bed at night.
	I think I've just shut it out a bit.
	It's very hard.
	Mhm, it's very uncertain.
	You imagine the worst you know

The next step in the analysis was to identify which of the two problematic patient situations the students' utterances were primarily associated with. Since the patient's case consisted of two qualitatively different emotional situations, one for the emotional worry situation and the other for the anger/frustration situation, each of the emotional sequences had to be categorized into one of the two situations. This categorization was done on the basis of the content of the EE in the transcriptions of the clinical encounters and could also be described as a quantitative form of content

analysis (169). As a result of this part of the analysis, one patient EE was omitted from the analysis because its content did not relate to any of the two situations. Further, if a patient EE was preceded by a soliciting, exploring, or facilitating student utterance, the patient EE was coded as a health provider elicited cue or concern according to the VR-CoDES manual (131, 165). Additionally, all student utterances directly following an EE were included in the analysis (167).

I identified and coded a total of 68 student-elicited EEs and 284 student responses in the 11 encounters related to the two problematic situations. Each student responded to between 22 and 32 EEs. This initial procedure for identifying emotional sequences within the 11 clinical encounters, therefore, provided us with a total of 352 student utterances related to patients' EEs which were eligible for further qualitative content analysis (see Table 4 in the section on additional findings under the summary of results). At this point in the analysis, due to the strict coding principles of the VR-CoDES systems defined in the VR-CoDES manuals (128, 165, 167), these were organized into mini-sequences or triads.

The 68 turns containing student elicitations and the 284 student responses were analyzed according to the principles of content analysis as specified below. The procedure for identifying emotional sequences according to VR-CoDES is summarized in Figure 2 below.

Figure 2. Procedure for identifying emotional sequences according to VR-CoDES

11 video recorded clinical encounters between 3rd year medical students and simulated patients

↓

Verbatim transcription of all 11 clinical encounters

↓

Identification of 285 patient EEs by analyzing both video-recordings and transcriptions according to VR-CoDES manual

↓

Exclusion of 1 EE found not be related to any of the two problematic situations

↓

Identification of 284 student responses to EEs using video recordings and transcriptions according to VR-CoDES manual

↓

Identification of 68 student-elicited EEs by analyzing both video-recordings and transcriptions according to VR-CoDES manual

↓

Qualitative content analysis of the content in all 68 student elicitations and 284 student responses using video recordings and transcriptions

4.5.1.1.1.2 *Inter-rater agreement analysis*

When analyzing observational data with an interaction analysis system such as VR-CoDES, it is common to report the level of agreement between coders (170). This measure is usually reported in the form of Cohen's kappa and can also be referred to as the inter-rater agreement or reliability of a specific coding procedure (170).

The VR-CoDES coding system has previously been reported to demonstrate satisfactory inter-rater reliability both in terms of patients' cues and concerns (131) and the health providers' responses (166). When tested on a group of patients suffering from a chronic pain condition, it has also demonstrated a high degree of validity in terms of picking up which concerns were experienced as real by the patients (171). To ensure the reliability of the VR-CoDES coding procedure, an inter-rater reliability analysis of cues, concerns, and responses was conducted in two steps. Before reliability coding was commenced, a fellow researcher (Live Korsvold) and I were trained in the application of VR-CoDES by AF, who was also one of the developers of the VR-CoDES. We each did a preliminary coding of a randomly selected clinical encounter using both video and detailed transcripts to analyze inter-rater reliability. Inter-rater agreement on the identification of EEs was moderate (Cohen's

kappa = 0.50, *p* > .01). However, for the responses to the nine emotional cues or concerns that both coders identified, there was perfect agreement between coders as to whether the student's response provided or reduced space (nine total, four coded as reduce space by both coders, five coded as provide space by both coders).

Disagreements in coding in this single encounter were discussed further in a meeting with AF. Disagreements revolved around two main issues which were later presented and discussed at the 2015 Verona Network on sequence analysis workshop:

(1) the high density of codes sometimes made it difficult to distinguish when a turn containing a new code started and when the former turn containing the previous code ended, and

(2) the minimal threshold for coding a student's utterance as an individual turn and therefore a response (for example when responses are short acknowledgments such as "OK").

4.5.1.1.2   Qualitative content analysis of the students' utterances

The next step in the analysis of paper 1 was the qualitative content analysis of the medical students' utterances related to the patients' EEs (154, 169)[6].

One of the pioneers within content analysis, Bernard Berelson, took a seemingly quantitative stance and wrote in 1952 that content analysis deals with "the objective, systematic and quantitative description of the manifest content of communication" (154, 172). Bearing in mind that content analysis was originally developed within a positivist paradigm, there has been some confusion concerning its epistemological and ontological origins. However, it is still regarded as an applicable method within various theories of knowledge construction (173). It is therefore left to the individual researcher to disclose their epistemological and ontological stance, something which I have attempted to do in the section on ontological and epistemic positions further down in this chapter.

Nowadays, qualitative approaches to content analysis are becoming more and more common in healthcare communication research. A basic underlying premise in qualitative content analysis is that reality relies on subjective interpretation and can thus be interpreted in a number of different ways (154). According to Malterud, qualitative content analysis is often applied in medical research in Scandinavian countries and likens the method to one of her preferred methods for conducting

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[6] Please note that although it was not explicitly stated in section 2.2.2. in paper 1 that the content analysis was *qualitative,* it is stated both in the headline, abstract, and elsewhere within the paper.

qualitative research (155). I concur with Malterud's statement that "I believe that qualitative research methods are founded on an understanding of research as a systematic and reflective process for the development of knowledge that can somehow be contested and shared, implying ambitions of transferability beyond the study setting."

An important distinction made within content analysis is that between *manifest content* and *latent content*. While manifest content refers to the analysis of the physical, countable, and easily identifiable elements within the dataset, latent content refers to the interpretation of the underlying meaning of the elements analyzed in the dataset. When conducting a qualitative content analysis, one normally analyzes both (169).

Although the 11 clinical encounters served as our original units of analysis, the identification of emotional sequences using the VR-CoDES system served as a first step of condensation into a content area on which to focus our analysis. These were the students' utterances or speech turns either eliciting or responding to each of the patient's 284 EEs, a total of 352 utterances or turns.

The qualitative content analysis was an iterative process consisting of (1) finding labels or codes for individual student utterances based on interpretations of the content of the utterance and how the content related to the patient's EE, (2) abstracting meaningful categories and subcategories that represented higher-order levels of organization of these utterances, (3) recoding all student utterances under these proposed higher-order categories, (4) discussing these proposed higher-order categories in meetings with my two supervisors (AF and RP), and (5) revising these categories and subcategories describing main types of student utterances multiple times by moving back and forth between steps 1-5. These categories may therefore also be interpreted as expressing the latent content of the analysis (154).

Finally, when we agreed on the categories that were the most representative of the 11 interviews, I categorized all utterances under their respective categories and subcategories.

4.5.1.2 Paper 2: Conversation analysis

To answer the research question in paper 2, we made use of the same video-recorded data material as in paper 1[7] but employed a different approach to analysis. During the analysis of paper 1, we made the observation that the analyzed mini-sequences or triads often took part in prolonged

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[7] Please note that in Table 1 in paper 2, the order of the last two subcategories of the qualitative content analysis has been switched around. If you compare this with paper 1, the category "Attempts at reassurance with medico-professional knowledge" comes first, not "Explicit recognition of emotions, but most often on a factual and descriptive level" as shown in the table.

sequences of talk, which subsequently led to the decision to analyze the same encounters using the better-suited method of CA to identify and describe the specific interactional functions of the students' utterances or actions. Since we had recently coded the material with the use of VR-CoDES, I already had some idea of where the emotionally-laden parts of the clinical encounters would be located. I began by transcribing all 11 interviews verbatim according to CA conventions (174). The specific method of analysis was CA as applied to institutional conversations (120) where the aim of the analysis is to study how the organization of turns-at-talk is constructed so as to realize particular agendas, where tasks and identities inherent to specific social institutions (in this case the medical institution) are embodied in specific practices of talk (120). Principles and concepts from CA, some of which were reviewed in the background section, were applied to the dataset/corpus to examine further the turn-by-turn sequential organization within the 11 medical interviews.

Upon initiating the analysis, I had already spent the previous year familiarizing myself with relevant concepts and principles from CA, with a special emphasis on books and articles focusing on physician-patient interaction. According to basic analytical procedures in CA, I approached the data inductively by observing the data material consisting of the video recordings of the 11 medical interviews. This was done to make sure that I did not miss or disregard important details which were not coded in the VR-CoDES analysis. Since we had already made the observation that some of the emotional issues were discussed in the form of prolonged sequences of talk, we had a particular focus on the interactional turns before and after the EEs identified by the VR-CoDES framework. I then continued my inductive approach by transcribing the entire corpus consisting of detailed transcriptions of the interactions taking place within the 11 clinical encounters in accordance with CA conventions originally developed by Jefferson (10). At this point in time, I was already familiar with Mishler's concept of the "unremarkable interview" consisting of a number of basic sequential events where the healthcare taker's "voice of medicine" exerts dominance over the patient's "voice of the lifeworld" (78). Although never formally acknowledged as falling within the category of CA, Mishler's work shows many parallels with the approaches used in CA. Our aim was therefore to explore how discussions of the patients' emotional issues could fit into Mishler's conceptual framework by employing concepts and principles from CA. Since we had already applied the VR-CoDES framework to organize the interactions into emotional triadic sequences and then analyzed the content of the students' utterances in these triadic sequences with qualitative content analysis, we used the results from paper 1 as a point of departure for our analysis. With the use of CA, we were, therefore, able to demonstrate some of the limitations in the applications of VR-CoDES and how the student, through her or his actions displayed throughout the encounter, was able to exercise control of the patient's initiative to talk about their emotional experiences by offering non-specific encouragement to

elaborate and then ultimately ending these initiatives with expressions of understanding and subsequent professional advice.

An attempt at comparing the two sequential frameworks to analysis is presented below in Figure 3.

Figure 3. Comparison of the two sequential frameworks to analysis. Patient in blue/student in grey.

VR-CoDES	Potential eliciting event/ event/delayed response	→ Potential emotional expression	→ Response/delayed response/re-eliciting event		
Mishler	(1) Information request	→ (2) information delivery	→ (3) elaboration/ clarification	→ (4) assessment	→ (5) new information request
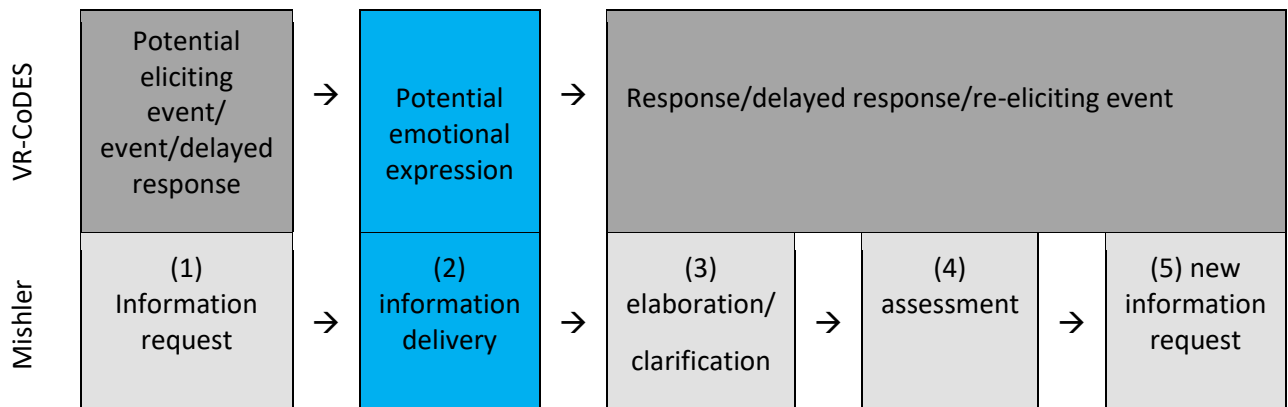
CA was performed on the original corpus in Norwegian, and I subsequently translated the selected excerpts presented in the paper under the supervision of my two supervisors. The translations were done so as to preserve some of the speakers' intended meanings from the original Norwegian version. Pauses and overlapping speech were not part of the translation process and are presented in the extracts in the way these were presented in the original Norwegian video recordings.

4.5.2   Paper 3: Qualitative content analyses of recall interviews

To answer the research question in paper 3, the data from the students' recall interviews were analyzed based on the principles of qualitative content analysis (154, 169), where the recall interviews represented the unit of analysis. Since each student was shown between two and seven EC moments in each recall interview, the specific timeframe for each EC sequence was spliced together with each student interview response commenting on that particular EC sequence with the use of NVivo 12 software. The content analysis was mainly conducted by the first author in an iterative process consisting of:

(1) finding labels or codes for individual student utterances based on interpretations of passages of text using NVivo 12 software,

 (2) abstracting meaningful themes that represented higher-order levels of organization of these passages,

(3) recoding all passages under these proposed higher-order themes,

(4) discussing these proposed higher-order themes in meetings with my main supervisor, RP, and

(5) revising these themes multiple times by moving back and forth between steps 1–5.

Finally, when we had reached an agreement on the themes that were the most representative of the 11 recall interviews, I categorized all passages under each respective theme. Passages pertaining to the various themes were then selected and condensed. The key themes were presented through sub-titles, while the pertaining content was presented through condensed text and illustrative quotes. Since the abstraction of themes was based on the interpretation of textual material, the analysis was mainly latent in nature (154). Additionally, each student was given a fictitious name (pseudonym) to preserve consistency as well as to add a level of personhood across the paper.

A list of each student's fictitious name can be found in Table 3 below.

TABLE 3. LIST OF STUDENT PARTICIPANTS

STUDENT	FICTITIOUS NAME/PSEUDONYM
1	Mary
2	Emma
3	Sarah
4	Anne
5	Hannah
6	Susan
7	John
8	Michael
9	Daniel
10	James
11	Jack

4.6 METHODOLOGICAL TRIANGULATION

In the present study, we used multiple methodological approaches to study empathy in medical students within a series of 11 clinical encounters. This study design may also be referred to as a multimethod research design or by the term *triangulation* (149-151). However, whereas these terms are normally used to designate studies that mix qualitative and quantitative methods within a single study (usually labeled in the literature as "mixed methods research" (151)), the present study primarily relied on qualitative methods only. By employing the strategy of triangulation, one approaches the object of study – in this case, medical students' empathic processes within a clinical encounter – from different *angles* or research methods. The term *triangulation* is borrowed from

land surveying and was originally coined to describe how one can locate one's own position by knowing the exact positions of two nearby landmarks (149). Patton identified four different forms of triangulation in research: methods triangulation, triangulation of sources, analyst triangulation, and theory/perspective triangulation. These four methods may all, in their own way, strengthen claims of validity when performing qualitative data analysis. We employed three of these in our study design: (1) *methods triangulation,* in which consistency of findings is ensured by the use of several data collection methods (e.g., video-recording of clinical encounters and stimulated recall interviews), (2) *triangulation of sources,* which involves evaluating and cross-checking data obtained at different times and by different means obtained from the same source (e.g., identifying specific emotional issues discussed within a clinical encounter and employing both data derived from the video-recording and the stimulated recall interview of the same student to analyze the student's behavior and empathic experience simultaneously), and (3) *theory/perspective triangulation,* in which multiple perspectives or theories are employed in the interpretation of data (e.g., two different perspectives on the emotional interaction in the clinical encounters in papers 1 and 2 and the phenomenological approach employed in the analysis of the students' perspectives on their own interactions during the recall interviews in paper 3, as well as using VR-CoDES as a theoretical framework for understanding the emotional sequences in paper 1 while employing concepts and principles from CA to make sense of the same emotional sequences as patients' troubles tellings in paper 2) (149).

Within health communication research, there are two advantages to this strategy; different methods might provide the same results which gives reason to trust the result even more, and it gives the possibility to explore different aspects of the same processes (150). Patton, however, argues that the main intention behind employing a multimethod design is *not* to display how the use of multiple methods, sources, or theories contribute to arriving at the same results, but rather to *test* whether this is the case and to make use of these identified inconsistencies to further illuminate how each of the methods of inquiry contributed in its own way. Still, he writes that triangulation is a strategy for researchers to avoid being accused of basing their study's results solely on one method, one source, or one person's biases (149).

4.7 ONTOLOGICAL AND EPISTEMOLOGICAL POSITIONS

To place oneself within research traditions is by no means an easy task. Within empathy research in medical education, one can generally distinguish between quantitative methods grounded in a realist ontology and qualitative methods grounded in a relativist ontology (102). Realism is the stance that sound objective knowledge can only be obtained using statistical methods. Within a relativist ontology, one does not accept things at face value but rather accepts that the significance of

phenomena as they appear before us is socially constructed. On one side, I consider the positivist stance taken by authors in most papers employing quantitative methods in empathy research as seemingly tailored to remove the author's influence on her or his own results; e.g., Hojat and colleagues' claim that empathy in medical students undergoes a significant decline as students turn towards more patient-centered activities during their studies (2). In my view, two issues were especially problematic with some of the assumptions made in this paper: (1) the use of *self-assessment questionnaires* to assess a phenomenon as complex and multi-faceted as empathy in medicine, and (2) the author's insistence that the faculty of empathy in medicine should be understood as predominantly *cognitive* rather than *affective* (which was rather contrary to my own experience as a medical student). On the other side, I consider my role as a researcher in my own research as an active participant and thus a co-creator of knowledge in that I participated in the development of the study, participated in the development of the interview guide, observed the clinical encounter via video-link, was present during data collection and performed the interviews, contributed to interpretations of the data by playing a large role in the analysis of the data, etc. (73, 173). I therefore acknowledge my position as belonging within a social constructionist epistemology and that many alternative interpretations of the data are therefore also possible.

4.7.1 Reflexivity

Since qualitative research methods relies heavily on the subjective interpretation of the researcher, Malterud writes in her guidelines for authors of qualitative studies that the motives, background, perspectives, and preliminary hypotheses of the researcher(s) should be presented and sufficiently dealt with (71). In unison, committing to such an activity may be termed reflexivity (71) or reactivity (151).

The present research was conceived all the way back in 2010 when Hanne-Lise Eikeland Storøy, Trond Mjaaland, Arnstein Finset and me were left empty handed with no noteworthy results from the positive reappraisal project (briefly described in the preface section). HES and I were both attending the medical student research program at the time, which consists of one-year compensated leave from medical school designated to do research as well as part time the next two years while attending medical school full-time. HES and I were both eager to make the most out of the year designated to fulltime research (2010) which had now mostly passed away in vain. AF had recently been given the role as the third opponent of Reidar Pedersen's Ph.D. thesis, which he defended in September 2010. As empathy in medical education was both the theme of Pedersen's thesis and central to both HES' and my own research interests, AF introduced us to Reidar Pedersen and his work. We eventually decided to develop a project which eventually ended up as the present thesis as well as a previously published article (18). We subsequently spent several preparatory

meetings and discussions prior to initiating the project as well as conducted a pilot study which made for interesting experiences and reflections on the use of actors, which is further described below in the section on the use of simulated patients.

My personal professional background is primarily as a medical degree graduate, but I also have an academic background in both psychology and English literature/language. Before applying for the medical student research program, I held a part-time position as a research assistant at the Department of Behavioral Sciences in Medicine where my assignment primarily consisted of being trained in and subsequently coding medical consultations with VR-CoDES. As a researcher, I would also say that my perspective is heavily influenced by the academic traditions of both behavioral sciences and philosophy as they are applied within medicine. The former was introduced to me by Arnstein Finset and my fellow colleagues at the Department of Behavioral Sciences in Medicine at the beginning of my research career. This tradition is more oriented towards quantifiable and comparative research within healthcare. From Reidar Pedersen and my fellow colleagues at the Center of Medical Ethics, I was inspired by philosophical traditions such as ethics of care where qualitative methods are more commonly applied, such as hermeneutical and phenomenological approaches to analysis.

Also, I have always been fascinated by how people can overcome the most difficult of experiences and originally wanted to specialize in the field of psychiatry. When I first started out as a student researcher, I must admit that I was fairly naïve as to my future role as a medical professional and to the final outcome of the research project in regard to preliminary research hypotheses. But I often reflect back on the course that got me into research, where the aim was for students to "gain the patient's perspective." During this course, we were instructed to first attempt to tease out the highly emotional experiences of patients with severe disabilities resulting from a lifetime of rheumatological disease. I was intrigued by how the clinical skills teacher then instructed the patient to leave the room, before wanting us to disclose our own emotional reactions to the patient's account sitting in a chair in front of the patient. I was a bit scared to do so at first but felt an immense feeling of relief when seeing the patient glow up while doing so. I was intrigued by the intricate balance in exposing my own private feelings in what I considered to be a highly professional setting. When I reflect back on the course now, I am pretty sure I remember reflecting on the following question: how far can I go in describing my inner experiences to the patient without stepping outside my own convictions of how a physician should interact with her or his patients?

4.8 ETHICS

4.8.1 Consent

4.8.1.1 Medical students

Written and voluntary informed consent was obtained from all students. Students were informed that participation would involve a clinical encounter with a patient and a subsequent interview session with the researchers after the clinical encounter. A copy of the consent form can be provided upon request.

Permission to recruit students was obtained from both faculty and student representatives (NMF = Norwegian Association for Medical Students). An application to the Norwegian Regional Ethics Committee for Medical and Health Research Ethics (REK) was submitted by the research group but was eventually received in return on the grounds that "the project does not intend to produce knowledge about health and illness, although improved communication skills among future doctors will be important for treating patients…On this basis, the committee has come to the conclusion that the project partly has an educational aim and partly must be regarded as basic research on communication and thus should not be dealt with by the committee." The study was therefore exempted from ethical approval according to regulations in the Norwegian Act on Medical and Health Research (the Health Research Act). However, the protocol for the research project was approved by the Norwegian Social Science Data Services, where aspects of privacy protection were assessed (project number 39888).

4.8.1.2 Simulated patients

All four actors were informed about the study and asked by the research group about participation in the study face-to-face. All actors were reimbursed for both attendance at meetings as well as participation in the study.

4.8.2 The use of simulated patients

We did not inform the students that the patient was a simulated patient until after each individual interview session was over. This information was withheld to prevent students from behaving differently if they were made aware that the patients were actors (which could ultimately compromise the validity of the results of the study in terms of altering students' empathic behaviors). Practices and opinions on not informing students were found to vary. The director at REK, Knut Ruyter, was consulted and he deemed it ethically responsible to inform the students after the session, on the condition that the student was then also given the possibility to withdraw from the study.

The issue of not informing students was also discussed with the actors portraying the role of patients. They had shared opinions on whether it would be possible to impersonate a real patient, but they all found it an interesting and potentially challenging task. To test a possible solution, a compromise was made: the first student who participated was informed that she would encounter an actor *or* a patient and that she would be informed of the real identity of the "patient" afterward. However, when the clinical encounter was over, the student participating in the pilot revealed that she more or less had been wondering whether the patient was real or not throughout the encounter. This encounter was therefore excluded from analyses in the present thesis since the student's reflections on this issue would compromise the internal validity of the results of the study. After this experience, it was decided that the rest of the students would be informed that the patient was recruited through a collaboration project with the Division of Nephrology at a local hospital. These are the 11 clinical encounters that were analyzed in the present thesis.

After the entire data collection procedure involving both the clinical encounter and subsequent individual interviews with each student was complete, the student was informed that the patient was in fact a professional actor. Students were also informed why we chose to withhold information from them. The students were then given the possibility to withdraw their consent. The students were also asked not to inform the other students in their class that the patient was in fact an actor until the data collection procedure with all students was completed.

5 SUMMARY OF RESULTS

5.1 PAPER 1

Objective: To examine how medical students verbally interact with patients expressing emotional issues in a clinical encounter by exploring (1) to what extent the students more or less explicitly referred to the patients' emotions in their response, (2) whether they provided room for further disclosure of the patients' emotions, and (3) whether they acknowledged the patients' experiences and their own perspectives, or responded only with factual, descriptive recognition of emotions.

Methods: 11 third-year students were instructed to conduct a clinical interview with a simulated chronically ill patient while being videotaped (but were led to believe that the patient was real). An interaction analysis system (VR-CoDES) was used to identify patient utterances containing emotional expressions (EEs) as well as student utterances eliciting or responding to these EEs. A qualitative content analysis of the students' utterances was then conducted.

Results: By the use of qualitative content analysis, we identified four categories that depicted student utterances. The first of these were questions focusing on a medico-professional agenda. In this category, students would either counter the patient's EE with a new checklist interview question completely unrelated to the EE or ask questions from the standardized admission note regarding psychosocial issues. The second category included utterances that allowed for the disclosure of emotions without explicit acknowledgment. In these utterances, students would allow the patient to disclose more about her emotional experiences with brief acknowledgment, such as "yes," "no," "ok," or "right," or ask more general questions about the patient's own reactions to her diagnosis. The third category included students' attempts at reassuring the patient. In these utterances, students would challenge the patient's emotional reaction to her situation by attempting to reassure the patient with advice or information gained from either their medical education or the students' own hypotheses of the underlying reason for the patient's emotional reaction. In the fourth and final category, students would offer explicit recognition of emotions, but most often on a factual and descriptive level. In this way, they would offer recognition of the patient's emotional experiences, but most often in a manner that neither permitted an exploration of the patient's experience nor a presentation of the student's own perspective.

Conclusion: Our analysis indicated that these students gave priority to medico-professional tasks and responsibilities. They demonstrated some interest in the patients' emotional experiences, whilst most often leaving out their own personal perspectives.

5.1.1 Quantitative data not published in paper 1

During the analysis of paper 1, we also obtained and analyzed quantitative data which was not included in paper 1, but included in the present thesis to provide the reader with a more comprehensive explanation as to why we considered using a different approach to analysis in paper 2.

In total, we identified 284 patient utterances containing EEs as well as 352 student utterances interacting with these (68 interactions eliciting EEs and 284 responses). In terms of their distribution across categories, we identified four categories of interactions, two of them with two sub-categories, which were found to describe students' interactions: (1) 151 questions with a medico-professional agenda divided between the two sub-categories: return to medical interview check-list questions (N=74) and responding to EEs by exploring psychosocial issues (N=77), (2) 84 interactions allowing disclosure of experiences without explicit acknowledgment of emotions divided between the two subcategories: brief acknowledgment and minimal encouragement (N=56) and more general questions about the patient's experience (N=28), (3) explicit recognition of emotions, but most often on a factual and descriptive level (N=72), and (4) attempts at reassurance with medico-professional knowledge (N=45). These results are summarized in Table 4 below together with the distributions of categorized interactions across both patients and students.

In the further analysis of the sequential organization of these EEs, we found that some student utterances coded as responses to one EE (first-order EE) also qualified as eliciting a new patient EE at the following patient turn (second-order EE). The 284 EEs were found to be organized into 116 sequences on an organizational level equal to or higher than the basic triad of the VR-CoDES system (*a potential eliciting event → patient's first-order EE → student's response).* Consequently, students' interactions were reorganized as either eliciting or responding to EEs within these longer emotional sequences and placed in the sequential order in which they appeared within the sequence. This resulted in 116 emotional sequences ranging from 51 basic triads to one extended emotional sequence consisting of 11 consecutive patient EEs (a potential eliciting event → patient's first-order EE → student's response *which also served to elicit a second-order EE → patient's second-order EE → second-order response → …11th-order response*). Most of these sequences were found to be student-elicited according to the VR-CoDES coding instructions (68 of in total 116 first-order EEs).

Table 4. Quantitative overview of patients' and students' interactions														
Type of interaction		**All interactions**	**Each participant's interactions**											
Patients		**All patients**	A	B	C	C	B	B	C	C	B	D	D
Emotional worry EEs	Concerns	205	47	6	3	4	5	3	2	5	6	4	6	3
	Cues		158	12	17	17	11	12	15	12	16	17	15	14
Anger/frustration EEs	Concerns	79	16	1	1	1	2	1	2	2	2	1	0	3
	Cues		63	5	6	7	5	6	10	4	8	6	4	2
Students		**All students**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
All student utterances	Student responses	352	284	24	27	29	23	22	29	23	32	28	25	22
	Student elicitations		68	3	5	7	8	10	11	5	4	10	4	1
(1) Questions focusing on a medico-professional agenda	Return to medical interview checklist questions	151	74	13	4	4	5	5	11	10	5	5	7	5
	Responding to EEs by exploring psychosocial issues		77	3	6	10	8	5	8	7	5	7	9	9
(2) Expressions allowing some disclosure of experience without explicit acknowledgment of emotions	Brief acknowledgement and minimal encouragement	84	56	2	7	6	7	13	4	2	6	5	2	2
	More general questions about the patient's experience		28	2	1	2	2	3	4	3	3	7	1	0
(3) Attempts at reassurance with medico-professional knowledge		45		4	3	6	3	2	4	2	6	10	2	3
(4) Expressions of explicit recognition of patient emotions, but most often on a factual and descriptive level		72		3	11	8	6	4	9	4	11	4	8	4
Student gender				Female						Male				

5.2 PAPER 2

Objective: The aim of paper 2 was to analyze the same clinical encounters as in paper 1, but instead use conversation analysis (CA) as an approach to analysis and thus to compare, contrast and supplement insights gained from the application of the VR-CoDES system versus CA. The research question is, therefore, to examine whether the function of the students' utterances can be interpreted and described differently in the context of larger sequences of talk as in CA, and more specifically how emotional issues are handled within the recurring sequences of the "unremarkable" interview as described by Mishler (78).

Methods: Concepts and principles from CA were used to examine the turn-by-turn sequential organization of student verbal actions in 11 videotaped clinical encounters. We used results from paper 1 as a point of reference.

Results: The emotional behaviors of both patients and students identified in the VR-CoDES analysis were in general found to be organized into longer and more detailed sequences when applying CA.

By using CA instead of VR-CoDES as our primary investigative method we first observed that student turns previously coded as eliciting behaviors to patients' expressions of emotion in VR-CoDES were often preceded by subtle patient initiatives. In these actions, many of the students' requests for information would be preceded by patients' actions which could indicate emotion but were not included according to VR-CoDES coding criteria turns (e.g., behaviors which were indicative of patient emotion such as quiet speech and pauses). In some cases, students' eliciting actions could also be understood as a response to previous patient emotional expressions. Additionally, some of the students' psychosocial questions found to elicit EEs in paper 1 could be interpreted as unintentionally eliciting the following EE in paper 2.

Secondly, we made the observation that students encouraged further elaboration by displaying their understanding of the emotional issue as a storytelling still in progress. The students' actions could therefore also be understood as the concept of alignment from CA, in which the student acts as a storyteller recipient and acknowledges the information they have only just received from the patient with the use of acknowledgment tokens such as "mhm" and "ok." This would normally result in a prolongation of the sequences where the patient was given the possibility to share her personal story, but without the student offering any acknowledgment of the emotional aspects of the patient's concern.

The third observation we made was that students' expressions of understanding gave little room for further elaboration from the patient. Instead, they would serve to acknowledge the emotional

component of the patient's concerns (in CA, this is described as serving an additional *affiliative* function) and thereby allow for the student to take back control in the further turn-taking procedure, and, e.g., to ask for partially or completely unrelated medical information.

The fourth observation was that students often addressed emotional issues as medical issues and offered professional advice. These actions would allow the student to integrate the emotional issue within the traditional question-answer format of the medical interview as described in Mishler's unremarkable interview sequence. This was done by either asking the patient to elaborate on health-related causes or consequences of the concern or by providing medico-professional assessments of the concern.

Conclusion: Contrary to the results from the previous VR-CoDES analysis showing that most patient EEs were student-elicited, we found that emotional issues were most often subtly introduced on the patient's own initiative. We found that the traditional question-answer format of the medical interview imposes several restrictions on students' interaction with patients which may impact the extent to which they express empathy towards patients. In this study, questions asking for specific information were reserved for information relevant to the completion of their assignment at hand, i.e., questions that limit the scope of the interview to biomedical aspects and further elaborations on personal aspects of the patients' lives only *when* and *if* brought up by the patient. Students' contributions were restricted to non-directive encouragement to disclose emotional concerns, relatively brief displays of empathy with little display on a personal level, and assessments offering medico-professional advice. This approach to interviewing may be described both as patient-centered in terms of containing most of the sought-after student behaviors of the typical patient-centered interview but at the same time as yet another attempt to handle the personal and emotional aspects of patients' lives in an effective and instrumental way without being perceived as impolite by the patient.

5.3 PAPER 3

Objective: There is some empirical evidence that empathy declines as medical students go through clinical training (2), but these findings have later been disputed (89, 90) and thoroughly investigated using both quantitative (92, 93) and qualitative methods (96). However, there are few in-depth studies investigating students' own experiences when trying to empathize in concrete clinical encounters. We therefore wanted to explore medical students' perceptions, experiences, and reflections when empathizing with patients expressing emotional issues.

Methods: A qualitative content analysis of semi-structured interviews with third-year medical students (N=11) was conducted using video-stimulated recall from their own clinical encounter with a simulated chronically ill patient. The simulated patients were instructed to display worry and anger/frustration related to two specific problematic situations in the patient's personal life. The worry was based on the patient's insecure future for her and her family resulting in the patient experiencing sleep disturbances. The anger/frustration was caused by a delay in the diagnosis set by the father's primary physician on her father suffering from the same inheritable chronic disease as the patient, making it impossible for the father to have transplant surgery because of his age and medical condition. Students were purposely led to believe that the simulated patient was an actual patient.

Results: In general, all students commented on the two emotional situations in the recall interviews, providing both factual details about the patient's situation and the patient's subsequent emotional reactions. However, the students often found it difficult to describe their own personal emotional reactions or experiences during the clinical encounter.

In the qualitative content analysis, we found five themes that may have influenced the students' empathic processes during the clinical encounter. The first theme was that students prioritized medical history taking over the patient's emotional concerns. The students described how their attention was primarily directed at remembering and completing the different tasks of the medical history taking. This resulted in them being disrupted or inattentive to the two emotional situations.

The second theme was that the students interpreted the patient's worry as a lack of medical information. They reported having interpreted the patient's emotional worry situation as a concern that could be handled by providing further medico-professional help or advice. This resulted in some students refraining from giving advice and others providing advice the way they would have liked to receive it themselves if they were the patient. The third theme was that most students mentioned how the anger/frustration situation placed them in a conflict between identifying with the patient's situation on one side, and the primary care physician on the other. Some thought it best to

acknowledge the patient's worry without taking sides either way. The fourth theme was based on the students' comments regarding their attempts to communicate understanding and interest aimed at the patient while watching themselves on video. They seemed to separate between two different forms of empathy – as a technical communication skill on one side as opposed to authentic and heartfelt on the other side. They further thought it was important to find ways in which the patient could vent her feelings and show the patient that they had indeed understood the severity of what had just been said. There were disagreements as to what extent you had to experience empathic feelings to act empathically towards patients, but there was generally an agreement that the empathic behavior should not turn "fake" either. In the fifth theme, the distant professional role, many students told of difficulties knowing what to say and how to act towards the distressed patient. They were self-critical and often said that they would have tried to show more empathy and understanding than they did while watching themselves on video. Some students mentioned that they entered a role that consisted in distancing themselves from both their own and the patient's emotions in order to be perceived as professional.

Conclusions: The students who took part in the study described situations where they faced conflicts between their medical training, norms for professional conduct, and their own personal judgments when trying to understand and relate to patients. This study is the first of its kind to explore how these experiences and reflections influence students' ability to empathize with patients in real-life situations. Now that we have a better understanding of the factors that can reduce empathy in students' interviews, it is important for educators to actively encourage group discussions and reflections among students in training. This will help prevent the negative impact of these conflicts on the way students gather medical information.

6 DISCUSSION OF METHODOLOGICAL APPROACHES AND ETHICAL CONSIDERATIONS

In the following chapter, I will discuss the strengths and weaknesses of the methodological approaches employed in the study and address some of the ethical considerations that were made concerning consent and the further follow-up of the participants.

6.1 METHODOLOGICAL APPROACHES – STRENGTHS AND WEAKNESSES

6.1.1 Review of concepts for ensuring credibility in research

Before I commence the discussion on the strengths and weaknesses of the methods of data analysis we applied in the present thesis, I must first make a few important delineations concerning the concepts which are used to ensure credibility in the two main research traditions, the *qualitative* and the *quantitative.* Common to both research traditions is the concept of validity. In both traditions, the term refers to how well the results of a study fits with reality (151). Within quantitative methods, the term *validity* is commonly applied when talking about the precision with which a method or an instrument measures what it is supposed to measure (151). Within the qualitative traditions, the usage of the term is somewhat controversial, and some prominent qualitative researchers have even argued that we should stop using the term due to its origin within a positivist paradigm (151). Nevertheless, the concept of validity is more commonly applied within qualitative research traditions in relation to the *context* of the inferences made in the study, rather than being a property inherent to the methods or instruments of analysis. Within this line of reasoning, Maxwell defines validity as "…the correctness or credibility of a description, conclusion, explanation interpretation, or other sort of account." Malterud makes a further distinction between *internal* and *external* validity and defines the former as what the study is actually about and the latter as what other settings the findings can be applied to (71). The latter concept of external validity concerns the degree to which one can generalize findings of qualitative studies which is usually referred to within qualitative research as the *transferability* of findings to other contexts. Malterud defines the term transferability as "The range and limitations for application of the study findings, beyond the context in which the study was done." Maxwell argues for approaching generalization ("…in research, refers to extending research results, conclusions or other accounts that are based on a study of particular institutions to other individuals, settings, times, or institutions than those directly studied") within qualitative research with caution. This warning is based on the fact that qualitative researchers generally limit themselves to the study of only a single setting comprising few participants recruited through non-randomized

sampling procedures, making the results of the study unsuitable for generalization to a larger population. Accordingly, Maxwell delineates two concepts within the larger concept of generalizability, making the concept more approachable and manageable for qualitative researchers. These are *internal* and *external* generalizability. While internal generalizability specifically refers to conclusions made *within* the case of study to cases that were not represented in the data material, external generalizability refers to generalizability *beyond* the particular case of study to other settings, persons, or times. In the case of our study, addressing issues of internal generalizability would, for example, be to pose questions of how the conclusions from our study are representative of medical students in situations similar to the one we attempted to simulate, while questions of external generalizability could, for example, be whether our conclusions regarding empathy in medical students are also applicable to other contexts (151). I therefore invite the reader to reflect on the following questions for a moment before I address them more in detail in the following discussion:

- Were the emotional issues presented by the simulated patients *credible*? Were they *transferable* to similar contexts in the real world?
- Was the application of VR-CoDES to the 11 clinical encounters a *valid* and *reliable* way of capturing the patient's emotional issues?
- How did the students meet and respond to the patient's emotional issues both in terms of the students' behaviors during the clinical encounters and the psychological experiences reported in the recall interviews? Are these responses to the patients' emotional issues *transferable* to similar clinical settings?

6.1.2   Study design

The study design employed in this study was a multimethod research design, also sometimes referred to as triangulation (149, 150).

A weakness of employing this study design is that it requires a lot of financial and material resources (149). It may also be considered a weakness of the study design that I, as the main author, was responsible for conducting the analysis of all three papers. This may have led to biased results and conclusions in that my own theoretical assumptions may have affected the interpretation of both the behaviors in the clinical encounters in papers 1 and 2 and the students' accounts provided through the student recall interviews in paper 3. In the process of this study, such undue influences were dealt with by knowledgeable and skilled supervision of scholars with previous experience with this kind of research. Both supervisors (AF and RP) have extensive prior experience with both conducting and/or supervising similar studies employing multiple methods. It also requires that I as a researcher

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regard myself as equally comfortable and have been given sufficient training in the approaches to both data gathering and analysis employed in the study. Additionally, an author's influence on the results of the study is generally accounted for within qualitative research by the author disclosing these possible influences in a detailed account of the reflective or reflexive process (71). Such an account was provided in the materials and methods chapter.

A strength of employing triangulation is that the two supervisors each represented two different research traditions in the analysis of empathy in medical students (behavioral sciences in medicine and medical ethics) and were also directly involved in the analysis of data in the individual papers in different ways. This may also have reduced the risk of bias during the analysis of both the data from the clinical encounters and the subsequent recall interviews. I will come back to some of the results yielded from the use of this strategy under the discussion on the results, where especially the findings from paper 3 could be substantiated and corroborated by the observed behaviors of the same students from papers 1 and 2.

6.1.3   Study setting

Some important remarks should be made concerning the setting of the study, which was an office set up to resemble a general practitioner (GP)'s office. Whereas a GP is likely to have a long-lasting relationship with her or his patients, seeing the patient multiple times, the students only met the patient once. A weakness of the study is therefore that the students were unable to follow up with the patient for a longer period, which may have affected their behavior during the clinical encounter. However, since students in their clinical years rarely meet patients more than once, it can be argued that this is normal for a student in clinical training. Similarly, it can be argued that since this was not an actual patient interview, what the students said or did would not have any consequences for the patient's health condition. Apart from the 12 mandatory medical interviews which were documented in the patients' permanent medical records at a nearby hospital, this would also be a normal context for students, which can be likened to other similar situations during their medical training (e.g., practicing conducting medical interviews on ward rounds or in communication skills training sessions).

6.1.4   Participants

6.1.4.1   Medical students

6.1.4.1.1   Sampling strategy, recruitment, and data saturation

We employed purposive/purposeful sampling since this sampling strategy permitted us to select participants who possessed both experience and knowledge about being medical students in the

process of starting the clinical part of their studies (153, 154). According to Malterud, the transferability of findings will not increase proportionally with the number of participants included in the study (155). Based on how students were recruited, we acknowledge the risk of a selection bias in that these 11 students were probably more than averagely interested in patient-centered aspects of communication and were likely to have been more prone to both experience and display empathy than the average medical student.

An advantage of employing this sampling technique is that it provided us with participants who provided us with insight into empathic processes in third-year medical students who had recently initiated medical training. Still, Patton warns of a general tendency in qualitative research to over-generalize findings and that qualitative results should always be interpreted with attention to the context in which data were gathered (149). Malterud also mentions how the sampling procedure to a large extent determines how one can apply the conclusions of a study to different contexts (71). Although this was never our intention behind the study, a weakness of this sampling strategy is therefore that the obtained results regarding the different response patterns of the medical students are not generalizable in the way that they apply to all medical students in a broader sense. However, this being a qualitative study, some of the general principles in our conclusions, for example, that medical students' responses reflected a biomedical focus, may be recognizable to any reader having had the experience of encountering healthcare providers at any level of healthcare. I will come back to this under the considerations of the different methods used in the data analysis.

Saunders distinguishes data saturation as a distinct form of saturation where one can identify redundancy in the data before formal analysis is initiated. The decision not to include the other eight students who had volunteered was therefore taken on the basis that the research group – based on information from both interviewers – considered that further data collection was unnecessary since data saturation had been reached (156). This decision was based on active interaction with the collected data during the data-gathering phase (e.g., watching interaction live through video-link, observing and taking notes on students' responses, interviewing the SPs, and selecting video stimuli for the recall interviews, being attentive to the answers of the students during the recall interviews, etc.) and by beginning transcription and preliminary analysis of recall interviews soon after they had taken place.

6.1.4.1.2   Students' feedback on results prior to publication

Tong and others recommend ensuring the internal validity of study results by providing the participants with the possibility to provide feedback on the interpretations made by the participants' perspectives, actions, and statements to make sure they are not exceedingly influenced by the

researchers' own objectives (71, 149, 151, 175). In hindsight, we should have obtained feedback on the reported results from the medical students prior to publication in order to ensure the credibility of the findings (175). The consent form had a separate heading on information about the dissemination of the results of the study, but no mention was made in the form about the research group making additional contact with the participants after data collection was finished. However, all papers are freely available online for the students to read and they are also welcome to contact me personally at any time.

6.1.4.2 *Simulated patients*

We decided on hiring professional actors in the role of patients instead of using actual patients due to unfortunate experiences made during the pilot study (described in detail in the materials and methods chapter). An extensive body of knowledge shows that medical practitioners are not able to tell the difference between well-trained simulated patients and real patients (86). There are several advantages to using simulated patients in the place of actual patients such as immediate availability, the possibility of standardization of the patient history, instructing them to portray specific cases, and that they allowed for easier and more efficient organization of the study (86). However, they had to be reimbursed for both time spent in meetings, preparation, and in the role during the study; it took us a considerable amount of time to develop the patient history which was enacted, and they required extensive training (86).

6.1.4.2.1   Were the emotional issues presented by the patients credible?

There are various perspectives on how actors should be trained in roles as actual patients (86). We paid particular attention to the credibility of actors' portrayals of emotional issues in terms of training, developing a trustworthy patient story, and providing the actors with the possibility to choose, at their own will, when to express the emotional issues. We would also argue that our decision to not inform students that the patient was in fact an actor also contributed to the external validity of the clinical encounter by making the setting resemble more an actual setting which they were used to from their medical training.

We chose not to emphasize a specific number of times to express emotion or detailed instructions on their portrayal during the development of the patient story since it was considered an advantage that the actors could tailor the specifics of the patient story according to how each clinical encounter developed and express them on locations where they themselves deemed appropriate (86). In paper 2, the patients' emotional issues were found to mostly be presented in a stepwise fashion within the same troubles tellings, from subtle hints to more explicitly verbalized emotional concerns. Although this has also been reported to be the case in other clinical settings (124, 126, 132), in our setting it

was most likely also due to the actors having been instructed to gradually introduce the emotional issues. This can be considered a strength since it allowed each of the actors to adapt to the patient's story and be flexible in terms of when and how to express the emotional issues, but can also be considered a weakness since it limited the possibility of standardizing the patient case.

However, the post hoc statistical analysis of how many EEs were expressed in each encounter (see Table 4) showed that this strategy allowed for some standardization (between 22 and 32 EEs were uttered by each SP). Additionally, on average, observational studies of clinical interactions with patients have reported that – if present – patients utter between one and seven emotional expressions across all clinical settings (124). In the most similar setting to the one our students found themselves in, that of general medicine, Zhou and colleagues found an average of 14 EEs per consultation in 107 Scottish general practice consultations coded with VR-CoDES which took place in deprived areas (176). However, our intent with this study was not to provide the students with the typical or average patient, but instead, to observe how students would interact with a patient who was instructed to exhibit many EEs intended to invoke empathic processes in the students. Zhou and colleagues (134) investigated how medical students handled simulated patients' EEs in an OSCE setting, and found that during the approximately five-minute period each examination lasted, on average nine EEs were identified. Since our students were given 20 minutes to conduct the interview, the number of EEs reported in Zhou's study would have to be multiplied by four, amounting to an average of 38 EEs per consultation. In our study, the patient who disclosed the highest number of EEs only uttered 32, which is less than what would have been the case if they were participating in Zhou's study. In Klöckner's study, they did not reveal that the patient was in fact an actor posing as a patient (they used the term *incognito patient*), which was also the strategy employed in our study. They found an average of 1.71 concerns and 6.57 cues presented to each student during the approximately ten-minute period the simulation lasted. This would amount to approximately 17 emotional expressions per consultation if our students had been participating in Klöckner's study.

Additionally, since these actors were instructed to enact a patient with several emotional issues, it can be argued that they were likely to have exaggerated or overplayed the part in terms of displaying such a high number of EEs. However, most of the students mentioned during the analyzed recall interviews that they found her openness as a sign of trust or good chemistry and that she was eager to share her emotional issues because of a need for emotional ventilation. It was our opinion that informing the students of the fact that the clinical encounter was with an actor would introduce yet another potential bias in our data collection procedure. As researchers, we found that students considered the truth a lot less provoking than we expected beforehand. None withdrew their consent, and none seemed angry at the fact that they had been purposely deceived by the

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employment of actors in the place of patients. Some of the students even found it funny and none reported having had any suspicion of this having been the case. Students' willingness to involve themselves in the emotions of a person if they knew they were an actor was considered to compromise the overall validity both in terms of the students' responses reflecting disingenuous empathy, and the potential that they would not experience empathic feelings for the patient during the encounter. Although the term "empathic dissonance" was not coined at the time (177), all members of the research group had previous experience with how empathic statements uttered towards SPs tend to turn disingenuous since they do not reflect actual empathic concern for the other individual. It was therefore considered that the students' experiences of this phenomenon might compromise the validity of the obtained data.

For a more thorough discussion on the ethical aspects of not informing students about the real identity of the patient, please see the section on the use of simulated patients in the materials and methods chapter.

6.1.5   Data collection methods

6.1.5.1   *Video-recording of clinical encounters*

There are several advantages to video-recording behavior as compared to other methods employed in communication research. Audio recordings, for example, would not provide the same level of fine-grained detail, and, contrary to video recordings, would not provide us with information on non-verbal behaviors such as hand gestures, touches, smiles, and eye gaze. Other methods such as direct observation would provide an opportunity to observe, take field notes and notice things that we were not able to capture on video, but would on the other hand influence the interaction in other ways such as making the student even more insecure about which questions to ask during the encounter. Other benefits to using video are the possibility to watch the same video multiple times in order to make sure one has not missed important details, focus on selected parts of the video, and move back and forth within the recording.

In a few clinical encounters, the presence of the camera was commented on by either the SP or the student, but this was done either at the very beginning or toward the end of the encounter. There is currently little empirical evidence to suggest that video recording in clinical environments alters participants' behaviors (178), but we cannot exclude the possibility that this was the case. On a similar note, we cannot exclude the possibility that students refrained from asking the patient particularly sensitive questions due to the presence of the camera.

6.1.5.2 *Stimulated recall interviews*

Henry mentions some limitations in the use of video elicitation interviews, some of which were addressed under the materials and methods section (i.e., how we carefully instructed each student before each interview was conducted to try to remember what they thought or felt *during* the clinical encounter and not presently at the time of the recall interview) (161). Additionally, one must have access to facilities that are suited for recording the interaction as well as access to a camera of professional quality which can be a considerable expense. We already had both at our disposal at the department where we were located at the time of the study. There are also many other imperfections to video elicitation interviews as a method, with both issues of imperfect memory recollection and interactional pressures exerted on the students during the interviews as factors that could have influenced the answers provided by the students.

A potential weakness in employing the strategy of recall interviewing is that neither of the two interviewers possessed much experience in conducting qualitative interviews at the time when the interviews were recorded. We were therefore given training, both by observing the two supervisors with extensive experience in carrying out interviews in a pilot of the study and by being provided extensive feedback on the first interviews which were included in the study. Additionally, I also completed two Ph.D. courses in qualitative methods after the stimulated recall interviews were conducted.

It can also be considered a strength in this context that the two head interviewers (KØB and HES),) at the time when the recall interviews took place, were fellow senior medical students with neither any relationship to nor position of authority vis à vis the students. By having recently gone through much of the same education and experiences as well as sharing a common vocabulary for expressing both our own and the students' reflections and perspectives, we were also more adept at teasing out the different nuances in the students' responses. If the interviewers were involved in, for example, communication skills training, the students might have felt pressured to provide "correct" answers which would result in social desirability bias. My fellow interviewer and I also brought with us our own perspectives and experiences into the interviews, which might have influenced both the process of interviewing and the subsequent interpretation of the interviews. Compared with an outsider conducting the interviews, one might argue that us being fellow medical students might make it easier to open up about sensitive experiences and to discuss relatively complex issues, but one might also argue that a researcher unfamiliar with the context might have entered the interviews with other perspectives and paid attention to different details.

6.1.6   Consideration of methods used in data analysis

6.1.6.1   Paper 1: VR-CoDES and qualitative content analysis

6.1.6.1.1   VR-CoDES

In scientific research, whether quantitative or qualitative, the concept of validity refers to the extent to which a method or instrument measures what it is supposed to measure (151). However, the validity of any method or instrument also depends on the method or instrument supplying trustworthy or *reliable* data. This can be referred to as the *reliability* of the method or instrument in question. If we use our study setting as an example, it would be of no use to apply VR-CoDES if it had not previously been demonstrated to be *valid* in terms of actually capturing patients' emotional expressions within medical consultations (132), nor would it be wise to use it if it had not been shown previously to be *reliable* in terms of providing consistent results across similar settings (134, 176). Eide and colleagues found that the VR-CoDES system displayed a high degree of validity in terms of actually representing patients' underlying negative emotions by first applying VR-CoDES on a series of videotaped consultations between nurses and patients with a chronic pain condition and later on in video-stimulated recall interviews asking the same patients to point out to the researchers where these emotional expressions were uttered during the consultation (171). The results showed that VR-CoDES reflected the actual emotional experiences of the patients successfully. But did the application of VR-CoDES in the case of the 11 clinical encounters analyzed in our study also capture an emotional patient's emotional experiences in a valid and reliable way?

6.1.6.1.1.1   Inter-rater agreement

In terms of the inter-rater reliability of the VR-CoDES coding procedure we obtained in our study, we were satisfied with the perfect agreement on the students' responses since the dimension of space provision is also considered an important element in empathic interaction (132). We were, however, not satisfied with the moderate level of inter-rater agreement on the coding of the EEs given that a summary of guidelines on how to interpret Cohen's kappa stated that a level of 0.75 should be aimed for as a lower limit (170).

Since VR-CoDES is a consensus-based coding tool, we attended the 2015 Verona Network on sequence analysis workshop to discuss the methodological difficulties in applying VR-CoDES to the 11 clinical encounters previously described in the materials and methods chapter. Some of the feedback we got from attending this workshop led to the methodological considerations presented in the discussion of results presented below and subsequently led to the decision to use the more appropriate method of qualitative content analysis for analyzing the students' responses in the 11 clinical encounters.

6.1.6.1.1.2 Why did we not distinguish between cues and concerns?

The original distinction made between cues and concerns was not maintained in this study since all patients' verbal and non-verbal behaviors were merged into the single category of *emotional expressions* (EEs). This decision was made on the grounds that our aim with this study was not to analyze the behaviors of the simulated patients but rather to examine the responses of the students in detail.

Even so, patient emotions have previously been described to be presented in clinical consultations in the form of a continuum ranging from very subtle hints or cues to underlying emotions (expressed for example as sighing, unusual description of symptoms, or in vague terms) to verbally expressed concerns (as in "I am sad") (124, 126, 132). This distinction was made to specify which patients' behaviors it would be advisable for healthcare providers to explore further (*cues* in VR-CoDES) and the patient behaviors which are assumed to not require further gathering of information (*concerns* in VR-CoDES) in terms of the patient's emotional state (131, 132). Given this distinction, it would perhaps be reasonable to expect that the students would respond with further exploration when patients provided emotional information in the form of subtle cues and support and empathy when patients uttered emotional information in the form of explicit concerns. It has also been reported in similar studies on student consultations in an OSCE setting that SPs provide more cues than concerns, and that these emotional expressions are most commonly responded to by providing space for further exploration at the beginning of the consultation (134, 135). We did however not investigate these aspects of the interaction in detail in the present thesis which can be considered a weakness of the study. Regardless, 11 students would not be a sufficiently large sample to gain enough power in terms of identifying statistically significant differences. However, in paper 2 we found some indications of students perceiving non-verbal patient emotional behaviors *before* they were coded in VR-CoDES, a finding which has been reported in previous studies in real clinical settings (127, 179).

6.1.6.1.1.3 Why did we include the students' elicitations in the qualitative content analysis?

We employed VR-CoDES for identifying the content area which would be subjected to qualitative content analysis. We included both student elicitations and student responses in this analysis but still chose to refer to the results as *responses* to the patients' emotional issues. The inclusion of student elicitations can be considered a weakness in the study. However, according to the VR-CoDES manual, cues and concerns are health provider-elicited if they are "coherently and logically connected with the previous health provider turn" or if they are coded "in a turn subsequent to an open-ended non focusing question" (165). One might therefore argue that the student elicitations "indicate interest in the patient's feelings and worries and hence in a more comprehensive understanding of patients"

and could therefore also be understood as responses to patients' emotional issues in more general terms as inviting the patient to discuss their emotional issues further (131). For this reason, they were also included in the further qualitative content analysis.

6.1.6.1.1.4   *Why did we not include the code of "delayed responses" as defined by VR-CoDES?*

According to the VR-CoDES manual and its corresponding publication, delayed responses by health providers should also be coded (166, 167). A weakness of the present study is that we only included the *immediate* response to the patients' EEs in the further qualitative content analysis. They were included in the further qualitative content analysis labeled instead as students' elicitations to patients' EEs and also considered in paper 2 under the first of the four analytical claims as student actions that would "re-elicit" previously discussed EEs. Regardless, I was not able to find any publications in which delayed responses had been included in further statistical analyses, and the VR-CoDES manual or publications provide no further instructions as to how one should make use of these delayed responses in the further analysis of data (166, 167). This provided us with yet another argument for why it was necessary to complement the application of the VR-CoDES framework and the subsequent qualitative content analysis of the resulting student behaviors with a qualitative method focusing specifically on the turn-by-turn sequential handling of the patients' EEs in extended sequences of talk.

6.1.6.1.1.5   *Why did we not apply the VR-CoDES sub-categories of responses?*

Although VR-CoDES is a convenient system when investigating emotional communication within short sequences of talk, its use in the exploration of longer sequences of talk has been debated (132, 180). Mishler argues that the problem of human judgment will interfere with any process of coding (78). By merely performing the act of coding, the coder becomes an instrument of interpretation. No matter how extensive and detailed the coding manual becomes, there will always be instances where the coder will rely on her or his own judgment or that of the research group working on that particular study he is currently coding for.

For example, in an attempt to apply the empathic and potential empathic opportunity (E-PE-O) method developed by Suchman and colleagues (126) on a sample of audio-recorded periodic health exams, Stone and colleagues encountered three particular challenges: (1) the patient's presentation of their emotional cue was found to be "fuzzy" and difficult to identify in a precise manner, (2) patients' expressions of illness could be expressed without the use of emotional words, and (3) the empathic opportunities were found to vary both in terms of length and intensity. Looking back at Bell's definition of interaction analysis, one can easily claim that the way in which Stone and colleagues applied the method – direct observation, coding of behaviors, and quantitative analysis –

fits with this description. In the first of the ambiguities they encountered during coding, they describe how they encountered difficulties in instances where patients use proxies of emotion words instead of the predefined "explicit emotional words" from the coding manual. Stone briefly mentions an example from a consultation where the coders observe an element of surprise in the tone of voice in the patient's response which is not defined as an empathic opportunity (EO) according to coding instruction:

> *To code this statement as an EO would be replacing a coding rule based on observation (explicit evidence of emotion in a patient statement) with one based on interpretation (the coder's assignment of an emotion based on inference). Assigning ''arbitrary'' thresholds for explicitness is one way to preserve methodological integrity and rely more heavily upon observations rather than interpretations. Following this route, we found that our inter-rater reliability improved but it might have come at the expense of underestimating some empathic opportunities.*

The group of researchers (KØB, RP, AF) therefore made the decision in unison that we would not use the 17 sub-categories of healthcare provider responses of the VR-CoDES system, which included both the sub-categories *implicit empathy* and *empathy.* These categories have previously been described in the materials and methods section. This decision was made on the grounds that these categories would not be able to distinguish and describe important nuances in the students' responses to the SP as well as the fact that our dataset did not include enough participants to be able to make statistically significant inferences. We therefore decided to employ a qualitative method that was better suited to capture and describe the fine-grained level of detail in the students' responses, namely that of qualitative content analysis.

To sum up, a strength of applying VR-CoDES to the 11 clinical encounters is that its framework has previously been found to capture patients' emotional expressions and students' responses to these which could otherwise be missed if applying other less objective methods (134). A weakness is, however, that it only analyzes the communication in terms of repeating basic triads and does not take into account the interactional turns taking place before or after each triad (132, 180).

6.1.6.1.2 Qualitative content analysis

To describe both the nuances in the way the students met and responded to the patients' emotional issues, we therefore resorted to the method of qualitative content analysis. This section, therefore, addresses the question of how the students met the patients' emotional issues within the 11 clinical encounters as well as the question of whether the conclusions made in paper 1 are transferable to other settings.

Both papers 1 and 3 made use of qualitative content analysis as their primary investigative methods. I therefore chose to consider the qualitatively-oriented concepts of credibility, dependability, and transferability as suggested by Graneheim (154, 173). Graneheim describes the concept of credibility as dealing "with the focus of the research and refers to confidence in how well data and processes of analysis address the intended focus", dependability as "the degree to which data change over time and alterations made in the researcher's decisions during the analysis process", and transferability as "'the extent to which the findings can be transferred to other settings or groups" (154, 181, 182)

Regarding credibility in the context of recruiting participants, Graneheim and colleagues write: "It is crucial to find participants who probably have experiences of the phenomenon under study and are able to tell about it" (173). We therefore recruited medical students who had recently begun the clinical part of their curriculum as participants. Graneheim does not make any specific recommendation regarding an ideal number of participants, since this is determined by the specific aims of the study and the data which is yet to be gathered (173). The two interviewers (HES and I) dealt with this issue by previously having received training in the application of VR-CoDES in connection with other communication studies, and by observing the interaction live through video-link. The results presented in paper 1 are probably influenced by my earlier training in VR-CoDES and of the application of VR-CoDES to the 11 clinical encounters to provide a content area for the qualitative content analysis. This can be considered both a strength in that it provided a detailed framework for understanding the emotional communication which took place and a weakness in that it might have caused us to overlook other important content areas which might also have contained data with emotional significance. It can also be considered a weakness that, by developing new categories in the qualitative content analysis, I committed many of the same mistakes as I have previously accused the developers of VR-CoDES of making, and thus ended up missing important nuances in the material.

Concerning dependability, when performing the qualitative content analysis in paper 1, I had regular guidance sessions with one of my supervisors (AF) who also participated in the analysis and had extensive experience with the application of qualitative methods within behavioral sciences in medicine. This may be viewed as achieving consensus or peer-checking (183), although the issue of achieving consensus in qualitative health research is somewhat disputed (173). From one side, consensus between two or more individuals might provide some justification in terms of agreement between two or more researchers regarding the application of specific categories, while from the other side, consensus will always be the result of this same research group's subjective interpretation (as can be argued to be the case in the consensus-based VR-CoDES system).

On the issue of trustworthiness, it's up to each reader to decide how much they trust the results in papers 1 and 3. To make that call, they must consider how well the authors explain the choices they made during the research, including when and why they made them (173, 183). A detailed description of the research protocol for the present study was presented in the materials and methods chapter.

Regarding the trustworthiness of the results presented in paper 1, qualitative content analysis has received much criticism concerning its origins within a positivist paradigm and the accusation that it does not represent a proper qualitative method in that it employs some degrees of quantification (173). Since our data was already quantified by the prior application of VR-CoDES to gain some level of understanding of where the emotional sequences were located (which, during the inter-rater agreement analysis described above, was found to display perfect inter-rater reliability in terms of space provision, but only a moderate level in terms of the coding of cues and concerns), we did not have to pay further attention to the quantitative aspects of the analysis. The quantitative data included in this thesis, but not in the papers (table 4) was included to provide the reader with an argument in support of the general impression that students' behaviors were relatively homogenous and standardized at this stage of their studies in terms of all students displaying at least one of the categories of behaviors (except for student #11/Jack who did not ask any "more general questions about the patient's experience"). In this way, the results provided some evidence for the transferability of the results in terms of the students having been taught either implicitly through the hidden curriculum or explicitly through the formal curriculum to perform a medical interview in this fashion.

The interpretive lens used in the analysis was influenced by my own academic and personal background as well as that of the co-authors and might therefore have appeared as judgmental in terms of interpreting the students' behaviors as biomedically oriented and leaving little space for the exploration of the patient's emotional issues. But in general, qualitative studies do not exclude the possibility of the authors influencing the results of their studies. Looking back at the section on reflexivity in the materials and methods chapter, I was honest about disclosing information about my own interpretive lens which might have influenced the interpretations in the analysis. Regardless, I stand by my critical stance towards the students' *observable behaviors,* while at the same time blaming this conduct on their medical education and their professional development (e.g., using the schematic approach generally taught in clinical skills courses) rather than being reflective of their personal perspectives and judgments (as turned out partly to be the case from the results of paper 3). I will come back to the issue of the students' own perspectives in the consideration of the methods employed in paper 3.

6.1.6.2 *Paper 2: Conversation analysis*

While the analysis conducted in paper 1 gave us an overview of the different categories of responses from the students, it did not provide us with insight into the specific functions of the students' verbal actions in terms of their *sequential* positions within longer discussions of emotional issues. For example, Stone and colleagues also described a similar problem we encountered in applying VR-CoDES to our student encounters; when the healthcare provider engages in a series of empathic continuers such as "mhmm" or "yeah" and thereby allows for the patient to empty herself void of emotion, what should be the minimal threshold for coding these continuers as separate responses? An observation that has often been made (both in Stone's, Mellblom's (127), and my own dataset) is that patients frequently engage in "troubles talk" (10) which is challenging to code within the deductive framework of an interaction analysis system. I therefore chose to refer to these longer discussions of emotional issues in the remainder of this thesis as troubles talk (10) or troubles tellings (11-13). To answer the research questions of paper 2, we therefore resorted to the method of CA which allows for an in-depth and more fine-grained perspective on these *troubles tellings* both inside and outside of the predefined units of analysis of the VR-CoDES system.

6.1.6.2.1 Validity of analytic claims

The conversation analyst Anssi Peräkylä writes that validity within CA concerns the question of whether the results inferred by the researcher are supported by the recorded observational data, and lists several methods to ensure validity when performing CA (184). On this list, we find the issue of transparency of analytic claims. Regarding the transparency of analytic claims, he mentions the concept of apparent validity[8], originally coined by Kirk and Miller (185). He writes: "The results of (good) conversation analytic research exhibit, in a positive manner, what Kirk and Miller called *apparent validity*: once you have read them, you are convinced that they are transparently true". The four analytic claims I made in paper 2 were: (1) students' elicitations were often preceded by patient initiatives, (2) students' alignment to the patient's storytelling was often limited to non-specific encouragement to elaborate, (3) students' expressions of understanding gave little room for elaboration, and (4) students often addressed emotional concerns as a medical issue and offered professional advice. To demonstrate the apparent validity of the analytic claims identified in paper 2, I will apply a different terminology from CA to the same corpus and extracts. This terminology describes the different resources that are available for responding to others' accounts of personal

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[8] The term "apparent validity" bears much resemblance to the term "face validity" which designates the similar concept of how one subjectively can assess validity through testing whether the claims *appear* to be valid.

experiences in everyday conversations (121).The five described resources, listed from offering the *least* to the *most* affiliative engagement with the storyteller's account, are (1) *ancillary questions* in which the recipient raises a somewhat related question and thereby displays resistance to the request for empathic engagement; (2) *parallel assessments* where the recipient describe a similar experience which does not attempt to enter into the other's experience; (3) *subjunctive assessments* in which the recipient suggest they would feel the same way if they were subject to the same experiences as the teller; (4) *observer responses* in which recipients claim imaginary access to what is described by positioning themselves as observers or would-be observers to the described events, and finally (5) *response cries* in which recipients display signs of emotional states which suggest empathic affiliation (121, 186). I therefore performed a secondary analysis of the corpus with the aim of identifying these types of responses within the corpus to further demonstrate the apparent validity of the analytical claims made in paper 2 (121, 184) and also to illustrate how these responses demonstrate the students' tendencies to display an impersonal and descriptive form of empathic behavior as argued in paper 1. Note that the second of my claims, 'Students' alignment to the patient's story telling was often limited to non-specific encouragement to elaborate', is not discussed below since the concept of alignment is not considered to be an affiliative response within CA.

6.1.6.2.1.1   *The role of ancillary questions in eliciting troubles tellings*

The first of my analytical claims addressed the finding that many of the students' turns of talk found to "elicit" troubles tellings, appeared to stumble upon them when exploring the psychosocial aspects of the patient's story. These psychosocial questions may be regarded as more or less *ancillary* to the biomedical agenda of the medical interview and can, therefore, also be termed *ancillary questions* in Heritage's sense of the term (121). For example, in paper 2, Excerpt #1, where we witnessed how the student's question about how well the patient sleeps at night led to the patient being able to disclose her troubles concerning sleep. This specific trouble was, however, related to a reason for sleeping poorly which did not fall within a biomedical frame of reference (20). The *consequence* of its presence, however, led to it being coded as 'exploration of psychosocial issues' in paper 1, since the mentioning of the trouble was preceded by a student's turn exploring the matter of sleep. Since this understanding of medicine involves a broader understanding of an individual's health condition (20), one may, therefore, also argue that some psychosocial questions can be regarded *as ancillary questions* in that they inadvertently include the trouble as content to be included in the medical interview, and thus made part of the students' medico-professional agendas.

There were also other categories of questions which could be said to represent ancillary questions. For example, when students asked the patient questions which were categorized in the VR-CoDES framework of paper 1 as general questions about the patient' experience. Some of these were found

to elicit EEs in paper 1, as illustrated in excerpt #3, where we see that the student question: "what was it like getting that message" was coded as an elicitation. However, by analyzing the same extract with CA, we observe that this code is preceded by both patient turns involving subtle patient hints (such as inhalation and long pauses) as well as a clarification by the student ("then you haven't known about it for very long"). It may, therefore, also be argued that the student has already picked up on the patient's underlying trouble since she posed the clarifying question in the first place and might therefore also *perceived* and *identified* the emotional importance of these subtle hints from the patient. In terms of displaying affiliation with the patient's reported problematic experience this may represent an ancillary question. But instead of *declining* the request for affiliation, it partly accepts the invitation to affiliate without explicit reference to the patient's emotion other than referring to it as "that message". Accordingly, the patients' troubles telling were more commonly found to be initiated by patients in the CA analysis rather than the students, and the reason for this was because psychosocial topics could also be understood as ancillary questions leading the direction of the interview towards emotional topics requiring students' empathic handling skills.

6.1.6.2.1.2   *The role of observer responses and subjunctive assessments in ending troubles tellings*

The third of my analytic claims, *'Students' expressions of understanding gave little room for further elaboration'*, concerns a frequent observation that was not picked up by the VR-CoDES framework. By subjecting the same troubles tellings to CA, I found that the student would often display understanding of the patient's difficult situation right before posing yet another unrelated interview checklist question or providing an assessment in the form of advice. Apart from the previously mentioned ancillary questions, I mainly identified two ways in which students affiliated with the patients' personal experiences: observer responses and subjunctive assessments. No parallel assessments[9] and only one response cry[10] was observed across all troubles tellings. Their respective roles as comprehending or assessing the patient's emotional issue contributed to the closing of further talk about underlying emotion unless followed by specific collaborative efforts to further extend the troubles telling.

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[9] Note that I only counted parallel assessments where students told of experiences from their *own* lives, and not those of for example previously encountered patients.
[10] The one example of a response cry was observed towards the end of S10/Hannah's clinical encounter where the patient has just disclosed how things turn very dark, heavy, and lonely when she wakes up at night. In response, the student utters "uff da!", which in English translates into something like "oh my!" or "oh dear!". However, the patient quickly rushes on, seemingly without noticing the student's response cry by saying "…but during the day everything works out pretty well for me – I have a lot of people around who provides me with support."

The students repeatedly attempted to formulate the patients' emotional experiences by displaying affiliation with the use of observer responses and subjunctive assessments. This was primarily done by engaging in what Beach refers to as a formulation cycle (140). Formulations have been described as "speakers attempts to describe, summarize, and in other ways 'furnish the gist' of ordinary conversational environments" (187) and are commonly employed in medical interviews to demonstrate understanding of the patient's complaint before changing topic and thereby serve as closing-devices to further talk about the patient's troubles (140). They perform this function by fulfilling a function as initiators in a three-part formulation cycle consisting of (1) the interviewer's formulated understandings, (2) the patient's confirmation, and (3) a topic shift by the interviewer (140).

Observer responses would claim imaginary access to the patient's experience by either explicitly claiming access (e.g., "yes I can imagine that") or by proposing mental experiences similar to those reported by the patient (e.g., "not completely present, no"). Their placement within the patient's information delivery part of Mishler's unremarkable interview sequence would therefore make the emotional experience an explicit topic for further interviewing. Paradoxically, they also contributed to ending the discussion about the topic by setting restrictions on the patient's range of answers: observer responses requested confirmations of the student's perception of the patient's mental experiences. When this confirmation was provided, the student was most likely to initiate a topic change by making a new topic-changing information request (12, 140).

Students would also offer subjunctive assessments in which they suggested they would feel the same way if they came to experience the same events as the patient. These suggestions were made by expressing agreement with the emotional reaction reported in the patient's emotional concern, either by displaying agreement with the patient's emotional stance in displays of understanding (e.g., "I understand that well") or by assessing the patient's reaction as a normal or correct reaction (e.g., "it is tough" or "one gets angry"). To contribute to further extension, some students offered minimal encouragement directly following the assessment. These minimal encouragements would however also contribute to ending these sequences and would often mark a transition into more professional assessments/appear right before a topic change (12, 140).

6.1.6.2.1.3   *Psychosocial questions and medico-professional interpretations and solutions*
The fourth and last of my analytic claims concerned the observation that in many troubles tellings, students were found to respond to the patient's troubles tellings by either exploring psychosocial issues or attempting to reassure the patient with medico-professional knowledge. However, the patient case included two emotional situations: one depicting emotional worry and the other

depicting frustration or anger. As noted in paper 1, these two emotional scenarios seem to have led to different response patterns in students. Concerning the first emotion, emotional worry, I found that it was mostly treated as a medical problem or task and would often lead to the students attempting to reassure the patient with medico-professional knowledge (as described below) while most of the responses to the patients' frustration or anger situation would seek to clarify facts surrounding the father's diagnosis. The ways in which the students handled the frustration or anger situation were not analyzed in detail in paper 2 and will therefore not be discussed further in this thesis.

Let me first present my arguments concerning the first part of this claim: that students often pursued the patients' troubles tellings as medico-professional issues. In excerpt #1, the student encourages the patient to elaborate further on her worries concerning bad sleep by displaying alignment with the patient's storytelling. At one point (L19), the student asks a clarifying "psychosocial" question concerning how the bad sleep affects her work. This question also qualifies as another ancillary question, but leaves the patient in bewilderment as to what the student is really after – does it represent acceptance or resistance to the request for affiliation in the patient's EE? The preceding pause in the interview at L18 leaves space for the student to talk further and the fact that the student's question is initiated by the contrastive conjunction "but" suggests a change of topic, increasing the likelihood of this question displaying resistance. This question also serves to illustrate the student's focus on the health-related consequences of the patient's having trouble sleeping, which is also part of the student's medico-professional agenda/standardized admission note (157, 158). At the same time, we see how this question marks a change in the interview from a relational, lifeworld focus to a more task-focused way of communication (78, 127). This is also demonstrated by the following hesitance and micropauses in the patient's response, which indicate that this question might have come a bit abruptly and unexpectedly (which might also have been a consequence of the patient being an actor in the role of a patient). The patient's subsequent rise in intonation towards the end of her answer and the student's subsequent minimal acknowledgment and two-second break suggests that the student provides room for the patient to disclose how her trouble with sleeping affects her work. The student then echoes the patient's words in the form of an observer response ("[not comple]tely present [no,]"), which has the primary function of displaying affiliation with the patient's experience. Shortly after having received a confirmation of her observation and subsequently providing a brief pause, the student interrupts the troubles telling with a topic-changing information request which is also an example of the three-part formulation cycle (140).

Regarding the second part of the claim, that the students would often "offer professional advice" in response to the patient's troubles talk, this is illustrated in excerpt #5. The excerpt starts with the

student's attempt to return to her interview agenda with a question asking what information the patient received regarding the nature of the cysts from the hospital, which again serves as an argument in support of the claim. Shortly after, the patient engages in her troubles telling with subsequent student aligning actions, and by the student repeatedly refraining from taking over the floor (at L10, L13 and L15). The student's observer response at L7 ("[it was a lot,]"), was not coded in VR-CoDES since the patient was still holding the floor when it was uttered. The quiet speech at L16 adds to the emotionality of the patient's troubles telling. After a long pause of three seconds – allowing for the patient to further elaborate on her trouble – the student formulates the patient's stance with a subjunctive assessment ("Yes it's a very tough message to get"). By specifically referring to the patient's affective stance, the student affirms that she has gotten the gist of the patient's affective state. She also displays agreement with the patient's stance; it *is* a very tough message to get. The patient then shortly after confirms the student's interpretation and after a long pause of 2.5 seconds, the student initiates her next turn with the conjunction "but" suggesting a topic shift. The student then proposes an assessment and a solution to the patient's trouble, suggesting that the patient's trouble is related to the lack of information and that it can be solved with further information from her primary care physician She formulates the patient's trouble as having to do with the patient's emotional condition at the moment of diagnosis – her emotional reaction to receiving the diagnosis might have impeded the uptake of the provided information. Addressing the patient's emotional situation instead of her specific condition also makes it possible for the student to provide advice – one of the primary tasks in the medical consultation (6, 7, 158). While she does not have the epistemic status of the medical profession to provide this information herself, she does have privileged knowledge as a medical student to see that the patient's trouble can be solved with further information. The patient then acknowledges the student's advice by stating "No right." The patient's next statement ("No, it can be a little too much at a time") is, however, ambiguous; was she given too much information, or was the experience of getting the diagnosis too much for the patient? The student subsequently provides two pauses of more than one second, which may be interpreted as providing space for the patient to continue in terms of the VR-CoDES framework employed in paper 1, but in the CA of paper 2, we see that the same response can also be interpreted as the student engaging in a formulation cycle initiated by the formulation "I have full understanding of that," which is confirmed by the patient and ended by a subsequent topic shift. Furthermore, this latter interpretation is corroborated by the student's willingness to hold on to the floor of the conversation, as demonstrated by the elongation of the turn at L31 ("yes thate::::"), the continuation marker after the formulation at L33 ("I have full understanding of that,") and the in-breath initiating the subsequent topic-change at L36 (".hhh I wo::nder have you-have you been sick before?").

Yet another example can be found in excerpt #4, where the student formulates his understanding of the patient's display of emotional worry from earlier on in the interview. As such, it proposes affiliation by raising the patient's trouble as a separate topic for discussion. Note, however, that the formulation is also a positively framed yes/no question with the preferred response of a confirmation (188). The patient's acknowledgment is followed by a slight rise in intonation, which might indicate that she is going to elaborate on her answer. The student quickly adds that this is his impression. The patient is interrupted at L8 while initiating a turn at L7 where she expresses uncertainty – "I don't know." The student interrupts with a "left-push," by quickly taking the floor of the interview with rushed talk at the start of his turn (indicated with an <) (174). By stating that he should have been the one to inform her about that and adding that "that's the way we really should have done it," he confirms both his lack of epistemic status (he is not a physician, but posing as one), and also exposes his own normative expectations of his role – he (as a yet-to-be physician) would have liked to be the one to inform her. They both end up laughing, the patient first, then the student at line 10 ("hnhn"). Once again, the student's assessment of the patient's trouble involves a medico-professional interpretation of it – but as a student he does not have the necessary knowledge or skill to fulfill the task.

Only one response cry and no parallel assessments were identified when applying Heritage's framework of possible general affiliative responses to the corpus (121). Empathic response cries generally seek to affiliate with the storyteller by not stating clearly whether the response cry refers specifically to the report of the event (in this case the patient waking up and feeling lonely) or the affective component of the troubles telling. Rather, it communicates an unspecific emotional reaction in the storyteller recipient and therefore also bears testimony to the student's emotional arousal (121). There were also other examples of utterances that could have been said to represent response cries, in that they conveyed the students' emotional reactions (see paper 1 under *brief acknowledgment and minimal encouragement*), but this was the only example which did not also contain repetitions of the same words in the previous patient utterance (referred to in paper 1 as echoing or reverberations).

To sum up, this secondary analysis of the more general ways that students displayed their empathic orientation towards the patient's emotional stance further strengthens the validity of the analytical claims made in paper 2. The students' use of ancillary questions shows that students, inadvertently or not, controls the further trajectory of the interview in terms of displaying resistance or acceptance to the patient's request for affiliation. Further, observer responses and subjunctive assessments were mainly observed towards the end of troubles tellings, emphasizing their role as initiatives to end patients' troubles tellings in a respectful manner, and to proceed the interview by performing

other medically relevant tasks such as providing advice or posing a topic-changing question. The general lack of empathic response cries and parallel assessments shows that students display a resistance to engage with patients on a more personal and emotional level during medical interviews. I will discuss these supplementary findings more thoroughly in the discussion part of this thesis.

6.1.6.2.2 Transferability of analytic claims

However, the transferability of these claims to actual clinical settings is another matter for consideration. Since CA operates inductively in terms of first identifying the relevant actions which one wishes to study further, and then working from the bottom up in order to arrive at relevant conclusions, I had to reconsider my preconceived conceptions of how patients present and talk about their emotional issues (which were already heavily influenced by my time as both a research assistant and subsequently as a student researcher at the department of behavioral sciences in medicine where I had learned a lot about the many ways in which patients may express their underlying negative emotions). Since the main purpose of paper 2 was to identify the patterns in which students oriented to the patient's emotional experience and the semi-quantified results from paper 1 were used as a point of reference, one may argue that paper 2 has a dual function of providing a critique of the VR-CoDES system while at the same time bringing new perspectives to the understanding of emotional communication in students' medical encounters. Since these claims were also based on the previous semi-quantified results of paper 1, one can also argue that this provides some level of argument for their validity.

Further, the transferability of the results will depend on the representativeness of the selected excerpts for the entire corpus or dataset and whether the terminology applied in the article is consistent with how similar terminology is used elsewhere within CA, e.g., whether I have understood the term *alignment* in the same way as Stivers defined it ("acknowledging the information provided and supporting the progress of the telling") (136). On the issue of representativeness of the excerpts from the 11 clinical encounters selected and analyzed in paper 2, the excerpts were selected based on discussions with AF who was the main supervisor on paper 2.

6.1.6.3 *Paper 3: Qualitative content analysis*

On the issue of dependability, during the qualitative content analysis of paper 3, I was also provided with assistance and guidance through regular guidance sessions with my main supervisor (RP) who has extensive experience with conducting qualitative research within the field of medical ethics. Thus, many of the same arguments apply here as for paper 1. This can be considered a strength in much the same way AF provided assistance in the qualitative content analysis in paper 1.

As for the consideration of the credibility of the findings presented in paper 3, HES and I dealt with this issue by interacting actively with the collected data (e.g., watching interaction live through video-link, interviewing the simulated patients, and selecting video stimuli for the recall interviews, being attentive to the reactions of the students during the recall interviews, etc.) and by beginning transcription of the clinical encounters and preliminary analysis of recall interviews soon after they had taken place.

Regarding the transferability of the presented results, Graneheim writes that the selection of participants as well as a precise description of the context of the study are elements that should be considered (173). We were aware that our recruitment process would probably result in a selection of students more prone to engage in empathic processes than the average medical student, but since generalizability is not the aim of qualitative research, it was not given further consideration. Rather, the aim was for the readers of the paper, supposedly mostly scholars working within the field of medical education and medical students, to be provided with a screenshot of the students' reflections and experiences made during the clinical encounters. Detailed descriptions of the context of the study can be found in each paper as well as in the materials and methods section of this thesis.

However, I argue for the transferability of the more general findings beyond the context of medical education. The descriptions of general tendencies in paper 3, e.g., making priorities or interpretations while performing a given task, experiencing conflicts or issues with saying something in a strategic manner which is experienced within as inauthentic, entering a role while performing one of the primary functions of your future profession, should be transferable to any reader having had the same experiences.

6.2 ETHICAL CONSIDERATIONS

6.2.1 Consent of participants

6.2.1.1 Medical students
None of the students withdrew their consent after being informed about the patient being an actor impersonating a patient.

6.2.1.2 Simulated patients
As a rule, voluntary informed consent in the form of both oral and written consent should be obtained from all participants. We only received verbal consent from the actors since they were considered as both participants as well as collaborators in the study. If this study was conducted

today, we would also have obtained written and voluntary informed consent from all four actors in accordance with more recent privacy regulations.

6.2.2   The use of simulated patients

The decision to not inform students about the encounter being with a *simulated* patient and not an actual patient was one of the most challenging ethical considerations we had to make during the study. All students had provided written and voluntary consent to record a medical interview on a *patient,* but not on an actor. They therefore consented to participate in a slightly different study than what they ended up participating in due to the research group intentionally misleading the students into believing that they were doing the interview on an actual patient. The research group would therefore put the students at risk of harm when revealing to them that they had intentionally been misled. Being aware of the dangers of the phenomenon of groupthink within our research group, and of our responsibility as role models both in terms of representing research in general, and especially the field of medical ethics, we consulted the director at REK (Knut Ruyter) beforehand to get an external assessment of the ethical implications of this decision. He deemed it ethically acceptable if we did inform the students after each individual interview session was finished, and that the student was then also given the possibility to withdraw from the study to reduce the harm in not having been provided with the information beforehand. When provided with this information, it was our experience that none of the students reacted negatively. Some even found it surprising or funny.

7 DISCUSSION OF RESULTS

In the following discussion, I will first present and discuss the findings of each individual paper in light of similar studies, before arriving at a more general discussion of all three papers. Papers 1 and 2 both represent observational approaches to data collection and are qualitative analyses of video-recorded clinical encounters, while paper 3 represents a phenomenological approach to data collection and is a qualitative analysis of students' stimulated recall interviews based on simulated patients' selection of emotional video sequences. Paper 1 presents a qualitative content analysis with a semi-quantitative component (see Table 4 under summary of results) which gives us an overview of the different ways in which students respond to patients' emotional issues. Paper 2 provides us with additional insight into shortcomings in the method used to understand the interactions in paper 1, and also gives important insights into how empathy or affiliation is employed strategically during interviews to manage students' orientations toward the patients' emotional issues. Paper 3 provides us with students' own accounts of their perceptions, experiences, and reflections made during the clinical encounter. Together, these three papers give a triadic perspective on empathic communication in medical students in that they represent the students' own perspectives on their communication in paper 3, the researcher's perspective on the communication in papers 1 and 2, and the patients' perspectives indirectly presented through a simulated patient in all three papers.

First, I will make a few relevant remarks about the definition of empathy employed in the present thesis to remind the reader of what we are trying to investigate by using three different methodological approaches to analysis. The broad definition of empathy employed in this thesis implies that empathic understanding and communication in students' clinical encounters occur not only as psychological phenomena within the individual student (51) but can also be achieved as a result of the *interaction* taking place between the student and the patient (81). The relational and moral nature of the medical student/physician-patient relationship was highlighted by the use of the term "appropriate,", which emphasizes that it is first and foremost up to the patient to evaluate what is an appropriate understanding of her or his emotional experience. To achieve an appropriate empathic understanding of her or his patient; the student will therefore have to present, enter into a dialogue about, and reflect on her or his own understanding of the patient's experiences during the clinical encounter. We may therefore refer to both students' and patients' behaviors or actions as either contributing to or limiting the student's empathic understanding of the patient's experiences within the clinical encounter (13, 126, 189). Since we employed actors in the role of real patients (due to reasons accounted for in the materials and methods chapter), the patient's emotional

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experience was limited to and operationalized as SPs' emotional expressions concerning two emotional situations and the SP's subsequent identification of these during the stimuli collection interviews.

7.1 PAPER 1: A BIRDS-EYE VIEW ON STUDENTS' RESPONSES TO PATIENTS' EMOTIONAL ISSUES

For paper 1, the aim was to explore how medical students verbally interacted with patients expressing emotional issues in terms of investigating if and how the students presented the patients' emotional issues back to the patient, to what extent the students provided space for the emotional issue, and to identify to what extent their responses reflected their own perspectives on the issue rather than just paraphrasing the patient's words. Since our focus for paper 1 was limited specifically to the empathic processes occurring within the students and how these mental processes were communicated in the clinical encounters, we employed a process approach to the definition of empathy by distinguishing three different *steps* within the broader definition above. The first was to *perceive, identify* and *understand* the patient's feelings and thoughts, the second to be *emotionally engaged* on a personal level, and the third to verbally or non-verbally *acknowledge the feelings* of the patient and respond in a way that *explicitly recognizes the patient's emotional state* (60, 81). By employing this definition, we were therefore provided with additional nuances to the students' responses, such as their level of emotional engagement.

7.1.1 Questions focusing on a medico-professional agenda

In the first main category in paper 1, we observed that students would most commonly respond to patients' EEs with questions limiting the scope of the interview to a medico-professional agenda (157, 158). Within this main category, we identified two sub-categories. In the first sub-category of responses, we found that the students' questions were primarily initiated with a brief, non-specific remark which signaled the student's reception of the information without any acknowledgment or mentioning of the emotional issue, before returning to medical interview checklist questions. This implies that none of the conditions for empathy were met since this way of responding did not provide any indication as to whether the student had perceived any aspects of the patient's EE. Consider for example S6/Susan's response from paper 1 where she seems to hastily and directly counter the patient's EE with a medical interview checklist question:

P:- he got the diagnosis a few years ago [S: yes] Uhm, but he has probably had this

way too long [S: yes] so now he has to have dialysis three times a week.[11]

S: Yes, do you have any other heritable diseases in your family -you mentioned your

father?

With her response, the student seems not to have picked up on the patient's emphasis on the patient's father having had the medical condition for way too long. Instead, she seems to have been reminded of how she was supposed to ask about hereditary diseases in the family during the medical interview, thus using the former question as a stepping-stone into the further biomedical aspects of the patient's lifeworld. (78). By not paying proper attention to the patient's *emotional* cues, the student thus missed relevant medico-professional information as well as an important chance to learn about how she as a physician-to-be could avoid making similar mistakes in the future. The patient's father might for example have had atypical symptoms or the primary care physician might have lacked necessary competence. The unnecessary long delay in the father's diagnosis could for example have been filed by the patient's family as a formal complaint against her and her father's physician and the student could for example have elaborated further about the details of the father's condition which made him ineligible for transplant surgery in the first place. Besides, by prematurely switching the direction of the interview to concern the patient's own disease, the student also fails in perceiving the important role dialysis plays in her father's and thus indirectly in the patient's life. The student thus misses a chance to discuss the existential and moral aspects of the impact of dialysis on human life in general, e.g., whether her father finds a life where he must find himself going in dialysis three times a week, lasting up to three hours each time, a worthy life. The student also missed important aspects of the patient's lifeworld, such as the fact that she accompanies her father to dialysis each Wednesday for three hours and that she is afraid of ending up in the same situation herself.

The tendency for medical practitioners to "miss" or fail to pick up on emotional cues or hints to underlying emotion in medical encounters is by no means a newly described phenomenon (124). For example, Levinson and colleagues found that 21% of patients' clues (defined as "direct or indirect comments about personal aspects of their lives or their emotions") were missed in primary care consultations, of which a majority were due to inadequate acknowledgment of the clue (125). In a similar study of consultations taking place in a hospital environment, Mjaaland and colleagues (190)

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[11] The added emphasis of *"he has probably had this way to long"* qualifies this statement as a cue B according to the VR-CoDES manual (see appendix).

found that the most commonly occurring way for physicians to respond was to reduce space for further exploration of the EE.

In only a few of these responses within this first sub-category, some aspects of the process definition of empathy in paper 1 were fulfilled. For example, in S3/Sarah's response where she replied: "Yeah, no –I understand well that it's extra scary for you too, when you've seen how it's been with your father -mhm -do you know if there are others in your family who has had anything similar?", seemingly all three criteria in the definition are covered by the student. In her response she provides a clear indication of the student recognizing and verbally acknowledging the patient's emotional state in a way which also indicates some level of emotional engagement on a personal level. However, in terms of the broader definition of empathy employed in this thesis, the response does not provide any space for the patient to disclose her EE further and therefore did not represent an attempt at entering into dialogue with the patient.

Contrary to our findings, the few studies investigating students' responses to patients' EEs have concluded in the opposite direction, that students mostly tended to *provide space* rather than to reduce space for further disclosure of the EE (134, 135). For one of these studies, it is probable that the reason for this was that the studied interaction took place in a five-minute OSCE setting which has probably made the students more self-conscious about their communicative behavior (134). Zhou and colleagues also found that Scottish GPs mostly responded to patients' EEs by *providing* (>80%) rather than reducing space for further disclosure of the emotion (176). Almost all of these provide space responses were found to lack an explicit reference to the emotional aspect of the EE identified in the preceding turn of talk (99.50%). One possible explanation for this surprisingly high number of non-explicit responses providing space for further talk about the emotion is that these Scottish GPs displayed a remarkable attentiveness towards patients' underlying emotional issues. However, a more likely explanation for the discrepancies in the results between these two studies (as well as accounting for the differences observed in our study and Zhou's study) are issues related to the VR-CoDES division of speech turns into units of analysis (167, 168). In our study, we were inevitably bound to the underlying framework of VR-CoDES since it was used to make sense of how the students responded to the patients' EEs. Inaccurate instructions as to how behaviors should be coded will therefore affect a coder's ability to discriminate and separate between different behaviors, and will subsequently leave room for subjective interpretation on behalf of individual coders or research groups (78). More specifically, the VR-CoDES coding instructions lack a precise definition of how long the time gap after a particular type of response (the back-channel response) must be to be coded as a separate turn of talk and therefore as a separate response. In the VR-CoDES manual, it is stated explicitly that "if the back-channel is followed by other expressions of the health

provider within the same turn, only these expressions have to be coded." In our study, we identified many instances of checklist questions from the medical history which were received with brief acknowledgment in paper 1 (like in Susan's example above), but the time or space between the brief receptive remark and the subsequent question was perceived as too short to indicate any acknowledgment of the EE in the preceding patient turn. In the following qualitative content analysis in paper 1, Susan's utterance ("Yes**,** do you have any other heritable diseases in your family -you mentioned your father?") was thus categorized as one single unit of analysis and treated as such in the further analysis. In the specific case of the example above, it is likely that the coders in Zhou and colleagues' study would have split Susan's response into two separate speech turns and coded the first as a back-channel response and the other would be excluded from further analysis. We raised this specific topic at the 2015 Verona Network on sequence analysis workshop but received no further guidance as to how long this time gap had to be in order to be defined as a separate response (topic 2 from the materials and methods section). On the other hand, the further analysis of the interaction in the clinical encounters consisted of qualitative content analysis in paper 1 and CA in paper 2, which are both qualitative approaches to analysis. Within qualitative traditions, it is generally accepted that the researcher presents her or his own subjective interpretations as long as the researcher discloses her or his theoretical standpoint, motives, preliminary hypotheses, and background (71). Had this not been the case, I would inevitably have become "an instrument of interpretation" as argued by Mishler (78).

In the second sub-category of the first main category, "Responding to EEs by exploring psychosocial issues," students would respond by posing questions partly overlapping with the EE which clarified or elaborated on psychosocial aspects. The exploration of psychosocial aspects of patients' life stories is generally advised in contemporary models of patient-centered medical interviewing (6, 7). From one perspective, the students had been taught – and were thus also encouraged and expected – to retrieve these aspects while conducting the medical interview (such as the availability of social support and effects of illness on daily functioning) (6, 7, 84, 158). Accordingly, it can be argued that these questions contributed to defining the patients' emotional issues as separate issues worthy of further medical interviewing (e.g., as a depressive episode). The inclusion of these questions on the students' interview agenda thus also included an orientation towards the patient's voice of the lifeworld (78). At the same time, they also decontextualized the emotional issue and turned it into a potential solvable medico-professional problem (78). In this way, they made it clear to the patient that they had indeed *perceived* and *identified* the importance of the emotional message but instead steered the interview away from the existential dimensions of the EEs and instead in the direction of interpreting the EE within a medico-professional frame of reference. It is worth noting that had we

also used VR-CoDES to categorize the students' responses rather than just the framework, these questions would most likely be categorized as *providing* space for further exploration of either the content aspect or the affective aspect of the patient's EE. The tendency for health practitioners to explore further the content aspect rather than the affective aspect has been described in previous studies where VR-CoDES has been employed to investigate student-patient interaction (135) and physician-patient interaction both in a hospital setting (190) and a general practitioner setting (176). A pertinent question in this context is therefore whether these questions present an *empathic understanding* of the patient's emotional issue which would necessitate both emotional attunement and empathic curiosity on behalf of the student (24, 25, 191). I take Halpern's concept of empathic curiosity to correspond to much of what Mishler refers to in his description of a physician's attentiveness toward a patient's lifeworld: "This physician acknowledges the patient's particular circumstances, minimizes the role distance between them, responds to the patient's feelings, and expresses his own feelings." Mishler made two caveats regarding the "voice of medicine's" role in medical discourse, which are both applicable in this situation (78). The first caveat was that "attention to the affective dimensions of patients' life stories in more psychiatrically oriented interviews must not be mistaken for attention to the voice of the lifeworld," while the second was that "physicians' friendliness/politeness towards patients should not be misinterpreted as orienting to patients' lifeworlds since friendliness does not imply recognition of the individual uniqueness of patients' life stories." In previous studies, one has however not had access to the reflections and interpretations of individual students in specific clinical encounters. But because we employed triangulation as an overarching methodological approach, we were able to make conclusions we would not otherwise be able to make. We will come back to a more thorough discussion on the characteristics of this particular form of curiosity in the general discussion.

7.1.2   Allowing disclosure of experiences without explicit acknowledgment of emotions

In the second main category of responses, "Allowing disclosure of experiences without explicit acknowledgment of emotions," we found that students would commonly provide space for the patient to disclose her emotional experience without being specific as to which information was requested. For the first sub-category, "Brief acknowledgment and minimal encouragement", these responses were exemplified in paper 1 by utterances such as "yes," "no," "ok," "right," short reverberations ("[P: ...but that I'm not quite present] S3/Sarah: Not quite present, no") or interjections which expressed surprise ([P: "...he's dependent on dialysis three times a week] S4/Anna: Oh, he is"). These behaviors resemble what Smith and Hoppe referred to as *open-ended interviewing responses* in a paper that describes how to integrate a patient-centered approach to interviewing with a physician-centered approach to interviewing (84). These open-ended

interviewing responses are exemplified as providing moments of silence, offering non-verbal responses which encourage talking (for example by nodding or hand gestures), neutral utterances or continuers (such as "Uh-huh"; "mhm"), reflection or echoing of the patient's words by repeating the patient's last words, open-ended questions or requests such as "go on," and short summaries or paraphrasing. These responses take part in an initial non-directive dimension of the medical interview where the facilitation of a free flow of information from and about the patient helps establish that the interviewer is interested and will listen. In other words, they function primarily to establish the healthcare provider's *unspecific* or *general attentiveness* to what the patient is telling them. In light of Halpern's concept of empathic curiosity, it can therefore be argued that the students' general attentiveness implies a certain level of emotional engagement. At the same time, this also resonates with the second of the caveats mentioned by Mishler, "that physician's friendliness/politeness should not be misinterpreted as orienting to patients' lifeworlds…" in that the students were found to display much of the same behaviors in paper 2 throughout the encounters, and at times during the medical interview where emotional issues were not presented. These behaviors therefore clearly have a function in the students' communication of their understanding of the patients' experiences but are too generic to qualify the students' understanding as empathic according to our definition of the term.

The second sub-category of the second main category, "More general questions about the patient's experience," was identified as showing students' initiative for patients to elaborate on their troubling experiences. Most of these consisted of questions about the patients' reactions or thoughts when receiving the diagnosis such as "What was it like getting that message?" These were perhaps the initiative taken by students which communicated the most curiosity from the students in terms of displaying a specific and direct interest in the patients' experiences. These provided space for the patient to disclose more information about her troubling situation on the patient's own terms and resemble what Smith and Hoppe refer to as "open-ended inquiry about affect" (84) (exemplified with the question "How was that for you?"). However, instructions to ask these types of questions were also on the students' formal curriculum (158) and therefore we cannot tell whether these were asked as a consequence of the student's curiosity in the patient's present situation or simply because they were implicitly instructed to do so. Additionally, in paper 2, we observed how these questions tended to be posed as a result of the preceding speech turns being perceived by the student as troublesome to the patient and were treated further as a topic at the periphery of their interview agenda.

7.1.3 Attempts at reassurance

In the third main category, "Attempts at reassurance," students would try to alleviate or reassure the patient's worry for the patient's further life with the disease by countering the patient's EEs with knowledge obtained either through the medical interview or through their medical education. By responding in this way, only limited or no further space was provided for the patient to disclose her emotional issue. Although framing the patients' emotional issues within a medico-professional context could be perceived as a natural way to approach the patients' predicaments in medical interviews, none of the students asked explicitly during the encounters whether this was what the patient actually needed or wanted from the student. This was noted as one of the main criteria for arriving at an "appropriate" understanding of patients – to not make premature assumptions based on your own subjective experiences, but rather to present your assumptions during the interview so that they can be discussed with the patient, before arriving at the closest thing possible to a mutual understanding of the patient's experience. Only one of the students (Daniel/S9) talked about his own perception of his role in the encounter by disclosing that he was not yet an actual physician and providing some context to the information which was provided to the patient.

If we compare our findings with the actual setting we were trying to impersonate or simulate, that of general practice consultations, Zhou and colleagues found that almost 10% of all responses to patients' EEs were categorized under the sub-categories of "information advice" according to VR-CoDES (defined as any response where "the health provider informs, gives advice or offers reassurance") (176). However, had we employed VR-CoDES to categorize the students' responses rather than qualitative content analysis, some of the third-category responses in our study would be categorized under other VR-CoDES response sub-categories since the students either tried to reassure the patient's worry by trying to reappraise the EE (in which case the response would have been categorized as "switching") or by stating that this would probably be the topic of the next consultation with the patient's physician (which would be categorized as "postponement"). Regardless, the provision of information to patients is regarded as one of the main tasks which *should* take place within a medical interview (6, 7, 84), while interpreting emotional issues as wishes for more information is not.

7.1.4 Expressions of explicit acknowledgement and understanding

In the last category of responses, "Expressions of explicit acknowledgement and understanding," we found that although the students did provide room for further disclosure of the patient's emotions and referred explicitly to the EE, they did so in a manner that placed them as an outside observer to the emotional events described by the patient. By paraphrasing the patient's words or acknowledging the patient's emotional stance, students would place themselves in a position where

the patient could further elaborate on her emotional issues without being interrupted. As mentioned in the background section, some authors (like for example Hojat) define empathy as appropriate within a medico-professional context based on arguments that empathy allows for emotional detachment and necessary distance for physicians to make clinically objective decisions. Sympathy, on the other hand, is considered unsuitable since sympathy sets the stage for merging of the patient's and the physician's experiences and does not allow for a separation between them, thereby increasing the likelihood of biased clinical decision-making (51, 81). In many ways, these explicit responses, for example "that must feel tough," could be interpreted as attempts to present the student's own perspective on the emotional matter. Some declarative questions were also slightly rephrased, like for example S10/James who met the patient's EE concerning uncertainty for the future by responding, "So it's sort of like in a limbo?", which certainly reflected a degree of cognitive empathy on behalf of the student, but provided no indication of whether the affective aspect of the patient's emotional issue found any resonance in the student's own empathic experience. In light of the still ongoing debate on whether physicians' professional behaviors should include sympathy or empathy towards their patients (51, 81), we added the second step in the empathic process: (2) to be emotionally engaged on a *personal* level. Only one of the students (S4/Michael) gave any indication of his personal opinion on the matter by stating that the delay in the father's diagnosis was "the sort of thing that shouldn't happen.". This was also the only response in the material where the student provided any indication of his own moral conviction other than provisions of emotional support and paraphrases of the patient's emotional condition. As such, these expressions bear some resemblance to Smith and Hoppe's four emotion-handling skills summarized in the mnemonic NURS: Naming ("That seems sad for you"), Understanding ("I can imagine that must have been quite upsetting"), Respecting ("You've really dealt remarkably well with this") and Supporting ("Together, I think we can get on top of this") (84). Judging from the way they expressed their understanding in the clinical encounters, it seemed like they had already adapted to a professional way of communicating with patients which did not allow for their own personal perspectives or judgments to be disclosed.

In our study, we only operationalized empathy through either emotional expressions (VR-CoDES) or troubles tellings (CA). Therefore, we might have missed other important aspects of the students' understanding of the patient which also partake in empathy, such as the students' interpretations of concerns which were more oriented toward biomedical issues (3). A different approach to studying interactional empathy is to directly identify sequences with consultations where the healthcare provider expresses empathy. Wynn found that within a sample of 77 British general practice consultations, only 16 expressions of empathy could be identified (189). As many as nine of these could be characterized as cognitive empathy (GP expressing recognition of the patient's feelings) and

only one was characterized as affective empathy (GP expressing partaking in the patient's feelings) (189). The rest of the empathic expressions were distributed between four instances of sharing empathy (GP expressing that they have something in common with the patient) and two instances of nurturant empathy (GP expressing support to the patient). These results are consistent with the findings in our study in that the students demonstrated distance and objectiveness in their expression of empathy, which in Wynn's study would have been characterized as cognitive empathy, whereas they rarely displayed any sharing of the emotional experience reported by the patient, which would be characterized as affective empathy in Wynn's study. We also see that the two remaining categories of sharing and nurturant empathy were also represented in our study as either "normalizing" or "legitimizing/supporting" expressions of understanding. Sharing empathy was exemplified in paper 1 by S10/James's response, "Yeah that's the thing -when one gets that kind of a message many things go through one's head at once and one forgets a lot," and nurturant empathy was exemplified by S8/Michael's response: "No, that must feel tough," when presented with the patient's emotional worry situation, and S9/Daniel's response, "Yes, that's pretty-dialysis is pretty heavy stuff, yes," when presented with the emotional worry situation. Despite the many similarities between these two studies, there are also several important differences regarding their contexts which may account for the difference in the frequency of empathic expressions, for example, that we employed a different method for identifying empathic expressions in our study (based on identifying *emotional expressions* rather than *empathic expressions*) and that we made use of simulated patients rather than actual patients as in Wynn's study.

A more recent publication by Tietbohl and colleagues investigated how a particular communication strategy for conveying empathy – empathic validation – was used in a series of video recordings of primary care visits with older adults (192). Empathic validation was in this case defined broadly as "any phrase that positions the speaker (…) as validating or reaffirming the recipient's feelings or experiences (e.g., that is frustrating)." She discovered that in order for an empathic validation to be effective for the patient, the primary care physician must pay close attention to the specific design of the empathic validation as well as to the context in which it is uttered. For the empathic validation to be effective, it had to (a) demonstrate a shared understanding of the matter at hand, and (b) support the patient's position in this matter. She further showed that physicians would resort to empathic validation when there was no available medical solution. Physicians' empathic validation was provided for three different reasons: (1) normalizing changes in health, (2) acknowledging individual difficulty, and (3) recognizing actions or choices. Interestingly, in this publication, "simple repeats of what was already said or overly general responses (e.g., yeah, I understand) demonstrate only acknowledgment and not shared understanding" and were therefore not defined as empathic

validation, whereas in paper 1 similar responses were categorized under the sub-category of "Brief acknowledgment and minimal encouragement," which allowed for the disclosure of the patient's experiences, but without explicit acknowledgment of emotions.

There are also other similarities between these two studies. The fact that there was no medical solution to either of the two problematic situations the students encountered in paper 1 makes the context comparable in many respects to that of the physicians with elderly patients in the abovementioned publication. If we take a closer look at reason (1) for providing empathic validations in Tietbohl's study, normalizing changes in health, we saw that the students in our study also demonstrated "support for patient's experiences by providing evidence that they are shared with others." S10/Hannah, for example, even used a general reference term ("one") when she stated to the patient "Yeah, that's the thing – when one gets that kind of message many things go through one's head at once and one forgets a lot." Compare this statement with the example from Tietbohl's study where the physician states "Yeah, falling is distressing, right? It's not something we do when we're younger and we get worried about when we do it when we're older," we see that they bear a striking resemblance.

To conclude the discussion of the findings of paper 1, one may say that overall, the students displayed similar patterns in their responses to patients' emotional issues within this semi-standardized clinical encounter. At the time of the encounter, the students were at a point in their medical education where they were expected to acquire new skills and knowledge as well as apply recently acquired skills to actively lead the interview. It was also expected of them to understand the patient experience *and* the medical problem at the same time. The behavioral patterns are therefore likely to have been influenced by clinical skills teaching on how to record a medical history which generally allows for some curiosity or personal engagement in the patient's emotional experiences when perceived by the student. However, the way students involved themselves with the patients' experiences reflected cognitive rather than affective aspects of empathic understanding and closely resembled ways in which professional physicians have previously been reported to conduct themselves (70, 189).

7.2 PAPER 2: EMPATHIC COMMUNICATION AS A STRATEGY TO HANDLE EMOTIONAL ISSUES

For paper 2, the aim was to analyze the same 11 encounters but use CA as an approach to analysis which would make it possible to compare, contrast and supplement insights gained from paper 1. While VR-CoDES defines emotional sequences in terms of repeating triads consisting of an eliciting event, a patient's cue or concern, and a health provider's response (132), one of the main findings of paper 2 was that the emotional sequences in the students' encounters consisted of numerous repeating triads chained together in longer sequences referred to earlier as troubles tellings (127, 180). By employing CA rather than VR-CoDES as an underlying framework for analysis, it was now possible to analyze how the students handled the patients' troubles tellings in the form of sequences and to make claims about the distinct function of each student's response within the troubles telling. This was also pointed out by the developers of VR-CoDES to be one of the main limitations of the coding system: "…in the system only responses, and not the preceding remarks to cues and concerns, are coded. In this case, no parsimonious solution was found to solve the problem of responses that at the same time were elicitors" (166). On a similar note, I argued in paper 2 that some of the students' behaviors coded as eliciting patients' EEs in the VR-CoDES framework in paper 1 could also be understood as raising (to "re-elicit") a previously discussed emotional topic. In VR-CoDES terminology, this type of behavior represents a "delayed response" which, according to coding instructions, should be coded if they explicitly refer to a previously discussed cue or concern (166, 167). Whether an observed behavior represents a re-elicitation or a delayed response to an EE does not make much of a difference as to whether it qualifies as empathic or not according to our conceptualization of empathy. Why we did not code delayed responses in the clinical encounters was previously discussed in the section on the methodological strengths and weaknesses of VR-CoDES.

We applied Mishler's "unremarkable" interview sequence as a template to structure the analysis (78-80). This led to the identification of four basic patterns of how the students would orient themselves towards the patients' emotional experiences: (1) students' elicitations were often preceded by patient initiatives, (2) students' alignment to the patient's storytelling was often limited to non-specific encouragement to elaborate, (3) students' expressions of understanding gave little room for elaboration, and (4) students often addressed emotional concerns as a medical issue and offered professional advice. By offering an alternative interpretation of the insights gained in paper 1, paper 2 may also be regarded as theory or perspective triangulation in that it employed a different analytical framework for understanding the interaction analyzed in paper 1 (149). Since these findings were reported as the main results in paper 2, they will therefore be presented here rather

than in the general discussion on the results of the methodological triangulation approach employed in our study.

In everyday conversations, the emotional stance or position recipients hear tellers to be taking within a troubles telling may depend on contextual factors of the particular conversation, such as the troubles telling being told within a medical interview (136). Generally, patients may prefer different styles or techniques of interviewing on behalf of their healthcare providers, for example for the healthcare provider to provide varying degrees of support (166). Whereas an empathic or affiliative response to troubles tellings in normal conversation can be for example agreement or support, the patient's trouble in these medical interviews is filtered through the lens of the medical student who is also a yet-to-be physician. The students' *interpretations* of the patient's troubles tellings are therefore of relevance in this context. As these students were given the task of conducting a medical interview within a concrete setting or situation, it should therefore be of no surprise that they would conduct the interview with a medico-professional agenda in mind and would occasionally display behaviors that at moments resisted talk about emotional topics (11). What came as a surprise to us, however, was the extent to which the very format of the medical interview, consisting primarily of questions and answers, was used to exercise control of the patient's voice of the lifeworld, and how students employed affiliation strategically to end further talk about the patient's emotional troubles.

In the discussion of methodological approaches, I accounted for the apparent validity of the findings presented in paper 2 by identifying other resources employed in CA to answer patients' requests for affiliation. The first of my claims in paper 2 was that students' turns identified and coded within the VR-CoDES framework as being health provider or student elicited in paper 1 were found to commonly be *preceded* by patients' initiatives when employing the method of CA on the same data. One of the reasons for this was because some of the students' psychosocial questions could also be understood as ancillary questions (121). These ancillary questions showed a varying likelihood of reflecting the students' affiliative intentions and therefore also reflected varying degrees of empathic curiosity towards the patients' lifeworld. Important nuances in the student's empathic curiosity displayed towards the patient's lifeworld may therefore have been missed in paper 1 due to the thresholds of VR-CoDES for defining communication as emotional or not. We can only speculate as to the reasons for this, but one of them might be that in order to arrive at a consensus – between both the developers of VR-CoDES and/or in coding sessions aimed at ascertaining inter-rater agreement or reliability between individual coders – one must establish a minimal threshold to maintain a satisfactory level or consensus or agreement regarding which behaviors should be considered as emotional or not. Similar tendencies for VR-CoDES or other interaction analysis systems to "miss" subtle expressions of emotions because they have been considered sub-threshold by coders have

been reported in previous studies (132, 179). Kale and colleagues also observed how some of the sub-threshold cues could potentially "fit" in the VR-CoDES system's sub-codes for cues (see appendix for further details) if coding instructions were more specific.

Regarding the second of my analytic claims, that students' alignment to the patient's storytelling was often limited to non-specific encouragement to elaborate, we found that the VR-CoDES framework tended to underestimate the role of the student in supporting the patients' troubles telling. Also, several essential nuances in the troubles tellings would be missed due to the VR-CoDES rationale for separating talk into units of analysis. Instead, the entire stretch of talk was coded as one single EE when employing VR-CoDES due to the systems' thresholds for separating turns of talk into separate units of analysis. However, these were picked up when applying CA to the same sequences of talk. At the most basic level, the student would align to the role as the recipient of the patient's storytelling by responding to the unfolding story with minimal encouragers or acknowledgment tokens which did not display any form of affiliation but rather allowed for the patient's further elaboration of the story. For example, in excerpt #3, we observed numerous minimal encouragers ("mhm") uttered by the student which served to provide subtle signals to the patient that the student listened. However, we also observed that students displayed similar behaviors or actions at other points during the medical interview which were not related to troubles talk. This was expected since the main agenda in any interview is to gain information from the interviewee, and the student therefore, by necessity, must provide signals to the interviewee that he or she is in fact paying attention by taking on the role of the listener (136-138). Similar findings have been described previously in the literature on empathic interaction in other settings (127), for example, as lasso effects by Suchman and colleagues (126) (who reported that one of the physicians allowed for several opportunities to respond empathically to pass with the use of continuers, for then to respond to them all with one final empathic response), or defined by Ruusuvuori as minimal non-affiliative "neutral acknowledgments" (12). Ruusuvuori distinguished between two types of professional responses to troubles tellings in her study of Finnish healthcare encounters: minimal and extended. The minimal responses included both non-affiliative and affiliative ones. While the non-affiliative consisted of neutral acknowledgments as described above, affiliative ones claim affiliation by understanding that the situation is troublesome but does not exhibit what their specific understanding is. I will come back to these extended affiliative responses shortly.

Regarding the third of my analytical claims, that 'students' expressions of understanding gave little room for further elaboration', I showed in the discussion of methodological approaches that most expressions of understanding could be understood as either observer responses or subjunctive assessments. In terms of representing an *appropriate* understanding of the patient, these

expressions represented the student's own perspective or understanding of the patient's emotional experience but did not encourage any further discussion of the relevance of the specific trouble to the patient's life world. Instead, we saw that the students did not make use of the opportunity to ask more in-depth questions about the patient's life world and had seemingly adopted a medico-scientific clinical gaze through their medical education which prevented them from expressing empathic curiosity towards the patient's life world (4, 78). At the same time, the very placement of these expressions towards the very end of the patients' trouble tellings demonstrated a shift in the student's attention in the interview from a focus on the patient's life world to a medico-professional task focus (78, 127).

We also observed a general tendency of these expressions of understanding to close down further talk of emotion. Similar findings have also been reported in Ruusuvuori's consultations, but here in the form of extended affiliative responses (12). These are described as taking the form of evaluations or descriptions of possible consequences of the situation in the form of requests for confirmation. Ruusuvuori depicts these as "proposals of affiliation" and adds two functions of these responses in addition to affiliation: (1) they appeared towards the end of the trouble sequence thus also functioning as closing devices, and (2) the trouble was included in the problem-solving task and thus treated as clinically relevant (although the second was only seen in homeopathy consultations, and not in general practice). In a different paper, Ruusuvuori distinguished between empathy and sympathy by referring to empathy as displaying an orientation to understanding or knowing the other person's experience and to sympathy as sharing the experience (13). She found that particular institutional restrictions within clinical consultations made both participants orient to the patient's role as the only participant in the conversation whose experience should be attended to, thus making empathy a relevant conversational activity and not sympathy. These restrictions were embodied in certain ways of displaying affiliation with the patient's troubles telling which involve requesting confirmation of their own understanding and suggesting the patient's experiences as shareable, but still owned by the patient.

In my final analytic claim, that 'Students often addressed emotional concerns as a medical issue and offered professional advice', I showed in the discussion on methodological approaches how the exploration of psychosocial issues was mostly performed by employing ancillary questions during the interview. These questions tended to lean the interview towards "the voice of medicine" and lead to the students providing the patient with professional advice (78).

Additionally, the lack of response cries and parallel assessments in the clinical encounter suggest that students tend to limit their conduct or behavior to more cognitive and objective displays of empathy.

On a general basis, these responses are considered to be unprofessional within the medical profession based on largely outdated societal norms and expectations of physicians' empathic conduct reflecting an ideal of emotional neutrality (193, 194) and cognitive rather than affective empathy (2, 51). The one example of an empathic response cry focused uniquely on the patient's affective response and could therefore be said to represent an exception where the student communicates sympathy or affective empathy towards the patient (51). Neither did we identify any parallel assessments. Disclosure of one's own personal experiences is generally also considered unprofessional conduct based on the very nature of professional relationships being of a "non-personable" character that requires a certain social distance between the patient and the physician (194) . A central aspect of a medical interview is that the patient's experience should remain the main focus of the interview and that disclosing information about one's own experience in the situation may involve a confusion of roles as respective interviewer and interviewee (13, 102). This may be due to earlier personal experiences as lay people or patients in institutional encounters with physicians. Experiences made during their medical education where they have implicitly learned through role modeling or the hidden curriculum (94), or explicitly through the formal curriculum that these behaviors should be avoided in order to be perceived as a professional physician may also have contributed to these normative expectations of how a physician should conduct her or himself (18). Heritage argues that when faced with potential empathic moments, the recipient of the request for affiliation is confronted with a collision between two moral systems; on one side, they will have to respect the storyteller's personal experiences in terms of not taking an overwhelmingly large epistemic position in the storytelling, while on the other side acknowledging the request for affiliation as an outreach for bonding and human connection (121). This moral dilemma is also an essential problem in medical interviewing that should be given closer attention and consideration within communication skills teaching.

To sum up the discussion of the results of paper 2, we revealed that when conceptualizing the patients' emotional issues as troubles tellings in the CA, the VR-CoDES framework employed in paper 1 would miss important nuances in the interaction. The framework employed for making sense of the emotional communication was therefore essential to our interpretation of the interaction in the 11 clinical encounters which to some degree influenced the interpretation of the results and to our understanding of empathy as a relational phenomenon. The students were found to continuously balance between a biomedical focus on the one hand, while occasionally engaging with the patient's lifeworld on the other. When the trouble was introduced in the interview by the patient, most student questions were ambiguous as to the nature of the requested information, and a delicate balancing act between displaying a relational empathic curiosity towards the patient's lifeworld and

clinical interpretations of the presented trouble was identified. Perhaps most notably, the affiliative or empathic expressions were generally placed towards the end of troubles tellings, suggesting that they were strategically employed to shut down further talk about the patient's trouble.

7.3   PAPER 3: STUDENTS' AWARENESS AND INTERPRETATIONS OF PATIENTS' EMOTIONAL ISSUES IN MEDICAL INTERVIEWS

In paper 3, we explored the possible reasons for the lack of attention towards patients' emotional issues and were also provided with some of the reasons as to why the students did not attempt to pursue the patients' emotional experiences further. We were provided with students' accounts suggesting that the students' focus on their medico-professional tasks influenced the students' awareness and interpretation of the patients' emotional issues in a number of ways.

Firstly, students ended up disregarding the patients' emotional issues because of the cognitive overload involved in remembering the structure and all the different questions to be asked in the medical interview. If we try to fit this into our definition of empathy above, the students thus failed to *perceive* the patients' lifeworld issues since too much mental capacity was spent on the *content skills* of the medical interview. One may argue that these are relatively inexperienced students *in training* to become physicians, and that they were therefore met with unreasonable expectations as to how much attention should be aimed at the patients' emotional condition. They were in a stressful situation where they were expected to identify the most relevant aspects of a patient's medical condition within a limited timeframe of 20 only minutes. Additionally, in the aforementioned paper based on the in-depth interviews of the same 11 students taking place after the recall interviews where finished, the same students reported that, in general, biomedical information gathering was prioritized higher than relational and emotional aspects of the consultation (18).

In terms of the students' attentiveness towards the patients' personal storylines, we argue that most of the students could and should have disclosed more information about their own personal reflections and perspectives. During the following "behind the scenes" recall interviews, important information regarding the students' internal perspectives and reflections during the clinical encounters were presented. Had the students been more open with the patient regarding their perspectives and reflections, the patient would have been provided with an opportunity to correct, adjust, or add relevant information to the students' interpretations of the patient's emotional issues, rather than students interpreting them as wishes for additional information or requests to be solved within a medico-professional frame of reference. This communicative strategy can also be described as communicating about the communication or as meta-communication (195). Communicating

explicitly about the participants' role expectations is essential to uncover implicit assumptions and presuppositions in any institutional setting, but especially important in a setting such as this one where neither of the two parties are expected to have fixed preconceptions about the role of the other participant (196). In this way, they would have communicated in a way which would be more consistent with the definition of empathy employed in this thesis.

The second finding was that students also told us in the recall interviews that they thought the patient's worry situation could be alleviated with more medical information. One of the students employed a more "meta-communicative" approach in his response despite making this assumption. S9/Daniel replied to the patient:

> *Mhm. I can't sort **of reassure you without being a real physician**, but **I sort of think** that-that if you haven't felt-if it's only now recently that you've felt something, and you haven't been bothered by it, then I wouldn't think that anything's too late sort of, [P: Mhm.] It doesn't sound like that, because you will-yeah, I'm a bit on thin ice here because I'm not sort of finished [with the medical education].*

By disclosing his own perspective about the role expectations in the situation, the patient is therefore put in a position where she was given the possibility to correct the provided information. This corresponds well with our broad definition of empathy, where it is up to the patient to determine the appropriateness of the student's understanding. At a later point in the encounter, Daniel once again mentioned "his impression" that the patient missed information, admitted to his lack of medical knowledge and revealed his assumptions about the role he should have had in the situation – he should have been able to reassure the patient's worries about a future life with severe kidney disease with reassuring information.

The third theme reflected how the students interpreted themselves as being placed in a conflict between the patient's and the primary physician's roles in the emotional issue and ultimately asked themselves questions like "do I really need to know the truth to agree with her?" During the recall interviews, Emma/S2 even reported having reflected on experiences from her own life with a sick father but chose not to disclose this information to the patient. She also added that she would have asked more about how the experience with her father affected her trust in the healthcare system if she was her actual physician. Had she not added this last clarification, she would have risked projecting her own emotional experiences on to the patient, which potentially could have prevented her from exploring the patient's frustration further since she would already assume to know how the patient felt (102). Michael/S8, however, showed more courage when he disclosed his own personal view to the patient that "That's the sort of thing that shouldn't happen," and therefore ended up

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taking the patient's perspective in the matter. Taking on too much of the patient's emotional perspectives may, however, prove counterproductive, as it may lead to personal distress and burnout further down the career path (197). Jeffrey found that the students in his longitudinal study would struggle to find a balance between attending to the patients' needs on one hand and not becoming overwhelmed on the other (102). This resorted in them establishing a psychological boundary between themselves and the patient. He refers to this as the "self-other boundary," which serves to strike a balance between emotional detachment on one side, and emotional connection with patients on the other. This boundary would allow for the student to not become too emotionally involved with patients while at the same time allowing them to experience some degree of empathy with the patient.

Jeffrey's study was, however, longitudinal and found that medical students in their pre-clinical years tended to view empathy as a static attribute occurring within the individual and first had to find out how professional physicians conduct themselves in clinical situations with patients. They therefore attempted to impersonate the behaviors of more experienced physicians and thus ended up engaging in "fake" empathy or mere surface acting (46, 102). As they approached their clinical years, they eventually found out that the clinical encounter is not about their own emotional state, it is mainly about the patient's. As such, they gradually realized and accepted that empathy depends on the patient's wishes and preferences within each individual clinical encounter, and that it was their professional responsibility to adapt thereto each time they encountered a new patient. Resultingly, they developed a more relational view of empathy during their clinical years. This relational view involved processes of humility, mutual approachability, taking time to listen, being attentive to both the patient's and your own emotions, exposing some of your own vulnerability to emphasize your common humanity, and facing each patient with a non-judgmental attitude. It is possible that our students, having had some experience with patients, but not quite as much as the clinical students in Jeffrey's study, found themselves somewhere in the middle of these two situations. Indeed, the students in our study spoke of much of the same self-focused insecurities concerning their own displays of empathy and made many of the same considerations regarding the use of "fake" empathy as the students in Jeffrey's study. At the same, they had not quite arrived at the stage of their professional development where they had established a proper self-other boundary and would be able to more confidently talk about more personal issues with the patient without engaging in self-criticism.

When the students in our study attempted to describe their own reactions to the patient's emotional concerns, they reported difficulties in remembering or articulating how they felt. When they did report their recollections to us, they tended to employ unspecific terms such as "recognizable" or

"understandable," and only occasionally reported having shared the emotions or experiencing emotional concern. This mainly reflects a cognitive form of empathy in which the importance of emotional resonance or the vicarious experience of the patient's feelings is downplayed (51). It also represents an understanding of empathy where the students neglect the importance of themselves as interpreting subjects and thus forget to account for their own contribution in potentially biased clinical perceptions and decision-making (81). However, with a cross-sectional design such as the one employed in our study, it is not possible to conclude if this finding reflects a stage within their professional development in positive terms as eventually succeeding in establishing a self-other boundary (18, 102, 198), or negatively as reflecting previously reported ideals and notions of detached concern (24) or cognitive empathy (2) reported to be prevalent within medical education.

Regarding the fourth theme, some of the students like Emma/S2 reported having experienced what has later been defined as empathic dissonance (177, 199) during the clinical encounter – a "mental discomfort created by the act of making expressions of empathy that are not sincerely felt.". Laughey and colleagues (199) suspects that this dissonance is due to the hidden curriculum and specifically points to two problems with these "fake" empathic remarks: (1) patients may notice that their usage was not sincere on the students part, and (2) students may experience that they suffice and that there is no further need of emotional involvement with the patient. One of the students (Emma/S2) even reported that initiating her medical education and being taught techniques to convey empathy made her realize that empathy could be employed instrumentally to artificially invoke the feeling of being understood in patients. To my knowledge, there is no empirical evidence to support his first problem or claim, but some of the students in our study also alluded to the same issue of patients "catching onto" fake empathy. Contrary to this claim, in the stimuli collection phase of this study, where the simulated patients were asked to judge the communication or chemistry between themselves and the medical students when disclosing the EEs, most reported that they felt understood and the students' communication was generally rated by the simulated patients as good. This information was, however, not included in any of the papers since they were simulated rather than actual patients and they therefore did not face the same existential or moral fears by disclosing emotional issues compared to real patients.

Regarding the second of Laughey's claims, there is empirical evidence from observational studies that empathic remarks are employed strategically to end discussions on emotional topics in medical consultations (12, 140). This should not come as a surprise to anyone, since the main task or goal of any medical interview is usually to obtain medically relevant information to diagnose and treat the patient and is only occasionally related to the personal aspects of the patient's life (191). We also observed the same tendency in our clinical encounters, where the interview fluctuated between the

student providing the patient with a possibility to express her lifeworld experience and the student's medico-professional task focus. Emotional issues will therefore disrupt or distract the student from performing their main agenda (87).

Regarding the usage of "fake" empathic remarks, Larson and Yao also address these behaviors which are meant to convey understanding and empathy. But instead of highlighting the negative aspects of them, they refer to them in positive terms as part of the previously mentioned concept of surface acting, which serves as an entry point into an empathic relationship with patients (46, 111). In paper 3, we argued, in line with Vinson and Underman's claims (104), that to intentionally employ "fake" empathic remarks in order to convince patients that you in fact experience concern for them is a form of deception that is not morally acceptable. A more recent publication argues that producing fake empathic displays is even more likely to lead to burnout because of the emotional labor required in the continuous suppression of innate emotional mechanisms (9). In situations where empathic remarks are used as instruments – a means to an end, without reflecting the actual experience of the physician – they would represent an act of paternalism, since one in the act in doing so willingly deceives patients without the patients' knowledge and thus claims a right to infringe on patient autonomy without the patient's knowledge.

Gewirth (200) makes a convincing argument against special moral privileges solely on the grounds of taking place within a professional context. His argument goes as follows: Some philosophers claim that even though actions of professionals infringe the moral right of the client, the action can be justified because they are means to a desirable end which is part of the institutional activity. Such actions would therefore take precedence over "normal ethics." Consequently, acts which would be considered morally wrong outside of an institutional context would be accepted as morally justified exactly because it takes place within an institutional context. But can moral infringement solely be justified on the grounds of rules residing within a particular institution, separated from what Gewirth refers to as rational morality? To answer this question, Gewirth separates internal from external instrumentalism. In external instrumentalism, the means do not necessarily have anything to do with the end, whilst in internal instrumentalism, instrumentalism "serves as an instrument to the end by enforcing, reinstating, or in some other way bringing about a certain result while at the same time it embodies distinctive characteristics of the result." The employment of empathic remarks as the means to provide care could therefore be understood as internal instrumentalism in that the means are closely linked to the end. However, if the intention of the physician is not guided directly at the patient, but merely meant as an act of professionalism – simply to abide by institutional rules – it would be external. Such external instrumentalism, Gewirth claims, does not conform to the general principle of rational morality, in that the generic rights of all persons are not respected.

Sissela Bok claims that "The moral question of whether you are lying or not is not settled by establishing the truth or falsity of what you say. In order to settle this question, we must know whether you intend your statement to mislead..." (201). She further defines a lie as "any intentionally deceptive message which is stated." Using the communication of empathy instrumentally is intended to mislead and is indeed stated – it is intended to provide the patient with the message that the physician indeed does understand the patient's suffering. Because the patient is left with this impression, when in fact it is perfectly possible that the physician does not see the vulnerability in the patient's situation and is not emotionally affected, the patient is left with a distorted view of the nature of their relationship and the patient may be left with the impression that the physician will go to further lengths for the patient than is the case.

In the fifth and final of the themes, the students expressed self-criticism, uncertainty, and a general insecurity in how to express understanding towards the patient. This generally resulted in the students leaving it to the patient to do the talking since they were afraid of saying something inappropriate or wrong. Despite some authors claiming that this is not the way institutional roles should be interpreted (202), it appears that the students erroneously applied the same principles which apply to natural sciences, such as biomedicine, to institutional communication: that there are absolute laws as to what can be said and what cannot be said that apply to all clinical situations. If students are not encouraged to reflect on their own perceptions and interpretations of patients, there is a danger that students' emotional reactions to patients' lifeworld stories may gradually fade out and eventually be extinguished. In the more general student interviews following the recall interviews (which resulted in another paper not included in this thesis), some of the students told us how they considered control of one's own emotions in front of patients a vital step in their professional development. They therefore resorted to emotional distancing as a strategy to handle emotions – by for example deliberately avoiding thoughts like "what if it was me or my sister?" – and postponing or even suppressing their emotional reactions to their patients' predicaments (18). They also reported finding it difficult to combine the humane and professional aspects of patient care at the same time and that their lack of reconciliation often resulted in them becoming cynical or indifferent in their relations with their patients. Some even considered this development an accepted mechanism for dealing with unwanted emotions on their way to become professional physicians.

Despite numerous efforts to implement courses on different emotion regulation strategies within the medical curriculum, such as mindfulness courses (203), medical institutions demonstrate a remarkable resilience to reform or change when it comes to introducing courses that also involve the students' personal experiences (194). Reflecting back on my own medical education, the only training I was given in a formal clinical context that involved disclosure of my own emotions and

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perspectives was the course on "gaining the patient's perspective," briefly mentioned in the preface, which got me into this line of research.

To conclude this discussion of paper 3, we may therefore say that the students' display of empathy in this specific clinical encounter was limited by students prioritizing the gathering of the correct medical information rather than focusing on relational aspects. This made the students miss or fail to perceive the emotional significance in the patients' accounts of their illness. Second, the students tended to interpret the patients' expressions of emotional worry as wishes for more information without further justification. This again provides an argument for students' *appropriate* empathic understanding of the patient's experience relevance in clinical diagnosing and decision-making. Third, the patient's portrayal of the anger/frustration situation placed the students in a conflict between identifying with the patient's experience of being angry with the patient's family physician for diagnosing her father too late for him to receive a transplant kidney on one side, and the perspective of the busy, overworked family physician on the other. Within this conflict, we discussed how the students probably tried to establish a self-other boundary between themselves and the patient (102) and were more likely to be drawn towards recognizing and acknowledging the family physician's perspective, since this could potentially be a future professional scenario for the students. Fourthly, the students had now, in their third year, finally realized how empathy could not only reflect an emotional, heart-felt psychological experience, but also be employed instrumentally and strategically to induce a feeling of being understood in patients. Here, I discussed some of the different views and moral implications of this taking place in clinical practice. In the fifth and final theme, I discussed how students seemed to have taken on the role as a distant observer to the patient's situation rather than engaging on an emotional and personal level. This was partly because they had mistakenly mixed the "right-and-wrong answer" logic associated with biomedical science with the more relativist logic employed within communication skills training. This view impeded the students from exploring how their own emotions influence the interpretations and information obtained through the medical interview and made for a less dynamic interview situation.

7.4 General discussion: Results of methodological triangulation

Let me start this general discussion by stressing the complexities involved in performing a medical interview. Students were faced with competing expectations from different subject traditions, where some tasks were perceived as contradictory, difficulties in finding which role and position one should take were found, and obligations towards the medical profession vis à vis the patient were also identified.[12]

7.4.1 Discussion of previous studies employing triangulation

There have been previous publications on empirical research on empathic communication in medical students where methodological triangulation has been employed (4, 95, 104, 133-135). Some of these were briefly accounted for in the background chapter and will be further discussed here (133-135). Zhou and colleagues' study on medical students in an OSCE found no correlation between the students' VR-CoDES responses in terms of providing or reducing space for further disclosure and the patient's rating of the same student's ability to listen (134). Two have attempted to establish a statistically significant relationship between students' JSE-S scores and students' behaviors coded within interaction analysis systems. In the study by Klöckner and colleagues, they investigated the relationship between the self-assessment empathy questionnaire JSE-S and student empathy, defined in the study as a selection of VR-CoDES sub-categories of empathic responses in 14 clinical encounters (135). No correlation between the JSE-S and VR-CoDES was found, although it was reported that students more often provided than reduced space and tended to explore the content of the EE rather than the emotional aspects of it.

In the study by Lanoue and Roter, a statistically significant positive correlation was found between RIAS behaviors which reflected students' empathic behaviors (the cluster *emotional responsiveness,* which includes the students' turns of talk defined as empathy, legitimization, showing concern, partnership statements and self-disclosure) and a negative correlation between psychosocial data gathering and biomedical education and counseling and that of JSE-S (133). In paper 1, we found that the students' behaviors reflected notions of a cognitive and detached form of empathy rather than an emotional and relational form of empathy (2, 24, 204), and Hojat, the author of the JSE-S, argues for a more cognitive perspective on clinical empathy (2, 205). The results of Lanoue and Roter's study

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[12] The findings of the theory/perspective triangulation in using CA rather than VR-CoDES as a framework for understanding the interaction taking place in the clinical encounters was accounted for in the separate discussion of paper 2.

were therefore largely consistent with the findings reported in our study. This was because the scores on this cognitively-oriented self-assessment questionnaire were found to *positively* correlate with the cluster emotional responsiveness. The cluster of emotional responsiveness included many of the same behaviors which in our study would be categorized as "expressions of explicit recognition of patient emotion, but most often on a factual and descriptive level," and negatively correlated with students' behaviors categorized as "biomedical education and counseling," which were likely to include many of the same behaviors categorized under "attempts at reassurance" in our study. The difference between these two studies is that in our study we went one step further in separating how the expressions of explicit understanding also tended to lack the students' personal perspectives and feelings. In our study, these behaviors were therefore interpreted as reflecting a step in a negative direction in the students' professional development, while in Lanoue and Roter's study, these were interpreted as desirable medico-professional behaviors (206).

7.4.2   Empathic or clinical curiosity?

A pertinent question that was asked repeatedly in the previous discussion of the three papers was how we can discern a student's authentic curiosity from a disingenuous and instrumental curiosity as a result of taught interviewing behavior acquired through communication skills courses and training? In paper 1, for example, one of the students (Daniel/student 9) repeatedly resorted to questions categorized as "more general questions about the patient's experience" in response to the patient's EEs and therefore appeared to be especially curious about the patient's situation. In the subsequent recall interview, which was the subject of paper 3, Daniel mentioned that at a point in this clinical encounter, he decided that he was going to respond in a more "natural" way and mentioned that he was very much aware of his own interpretations as the interview proceeded. This was reflected in his way of "meta-communicating" with the patient which was represented in both papers 1 and 2. He thus seemed to have realized at a point during the interview that the setting in which he found himself called for a more informal and less institutional style of interviewing (127). According to Wahlqvist and colleagues, flexibility in adapting to the patient's needs was found to be lacking in his qualitative exploration of students' communication skills towards the end of the medical curriculum (198). Instead, they adopted a standardized and uniform pattern of communication involving an initial willingness to listen at the beginning of consultations while switching to a more instrumental strategy where medical history checklist questions were generally checked off one by one, thereby loosing their initial attentiveness to patients' life experiences and emotional circumstances. He also suggested that, as medical students graduate and continue their professional careers as physicians, there is a likelihood of students developing farther away from this style of communicating into more

personalized communication styles. However, empirical evidence from a Norwegian hospital suggests that this is not the case (70, 190).

In paper 1, we also found that a common way for students to respond to patients' emotional utterances was to respond with questions with a medico-professional agenda. Some of these questions were found to selectively focus on the psychosocial aspects of the EE and were therefore treated as hints to the patient suffering from an underlying medical condition. In paper 1, James/S10 responded to the patient during the clinical encounter: "Not sort of a lacking ability to like find joy in what you've found enjoyment in previously or some of those a little [P: no] dejection related things?" In the following recall interviews, which were analyzed in paper 3, James told us how he thought, while conducting the interview, that maybe the patient's emotional worry was an expression of underlying depression. He therefore tried to map the patient's worry according to a scale for measuring the severity of depressional episodes (MADRS). He also remarked on becoming aware of a switch in the level of awareness from an open and empathic state of consciousness to a schematic and rational state of consciousness when attempting to map the patient's condition as a symptom of underlying depression. This "switch" in James' level of awareness may also be described in terms of the constructs "being mode" and "doing mode" in mindfulness, where "being mode" represents the open and empathic state where the student remains receptive to the patient's emotional message, and ultimately switches to the more schematic and rational "doing mode" in his further attempt to "figure out the medical puzzle" (194, 207). We were therefore able to trace James' perception of the patient's worry and able to determine that he had in fact interpreted the emotional issue as a matter to be explored within a biomedical frame of reference. The simulated patient, however, did not report noticing this shift in James in the stimuli collection phase of the interviews, and reported the student's communication and understanding as attentive, listening, and empathetic, and that the contact between the two was very good at all times. In this way, we were able to conclude that the students' interpretations of the patients' emotional issues affected their empathic behavior toward patients.

7.4.3   Entering the professional role

Through triangulation of the findings, we also found no indication of students' disclosure of own personal experiences in the clinical encounters, while in paper 3, Emma told of her experiences with a sick father affecting her understanding of the patient. This is also, to our knowledge, the first empirical observational evidence of a lack of self-disclosure on behalf of medical students. These findings resonate well with the interviews of students of Jeffrey, who reported that students tended to be more skeptical about sharing their own personal experiences of illness with patients when initiating the clinical part of their training (102). This is important since not disclosing their subjective

experiences makes students more vulnerable to using their own undisclosed experiences to guide further questioning and thereby make important decisions based on their own assumptions instead of discussing them first with the patient. This may also lead to them turning blind to their own biomedical interview agenda, as they are not able to see their own positions or agenda while interacting with the patient (4).

7.4.4 Limited by lack of clinical knowledge and experience

In our study, we also found that the students' lack of clinical knowledge and experience was reflected in both the responses made by the students during the clinical encounters analyzed in the first two papers, as well as in the following stimulated recall interviews analyzed in paper 3. This would place them in an awkward position vis à vis the patient, as acting out an institutional role somewhere between a normal layperson and a graduated physician. Students disclosing their lack of medical knowledge in clinical conversations has previously been described by Wynn (79). In an interview study on first-year medical students' own perceptions of their roles in encounters with patients (196), Vågan reported that according to themselves, the students lacked sufficient clinical skills and medical knowledge to be perceived as professional physicians. Instead, they reported feeling uncomfortable sitting opposite patients and were left to enact other alternative interactional identities than they were in fact training for. They described their own identities in these conversations as either a different kind of professional identity than that of the professional physician, in that they were given access to rather privileged and sensitive patient information but were still unable to prescribe medications, just another conversational partner engaging in everyday conversation, and finally, from a third perspective as a curious listener to which the patient could disclose sensitive information about her illness. When asked to describe how they thought they were perceived by the patient, they generally reported a mismatch between their own and the patient's perceptions of their roles, in that they were generally taken as having more clinical experience and knowledge than they actually had, that there was a surprising level of trust between the two, and that sometimes the student would be viewed as just another conversation partner in the eyes of patients. Vågan suggested that these findings reflected the limited potential of communication skills training in the first year due to the encountered difficulties.

To sum up the results of the general discussion, we found that students were rather consistent in their behavioral responses toward the patients' emotional issues within the clinical encounter. These patterns reflected a more cognitive view of empathy, which is generally called for within medical education (2). Through triangulation of the results, we found concrete examples of students being genuinely curious about the patients' lifeworlds rather than reflecting an objective and distanced form of empathy. We also found attentional shifts occurring within students, from an open and

relational interviewing style to a more closed and schematical approach. Additionally, we found that students would not disclose relevant personal experiences which might lead to biased decision-making, and that the students' responses to patients' EEs were influenced by the students' lack of clinical knowledge and experience.

The current situation in health care – both in Norway and abroad – demands a lot from its employees. In order to develop a patient-centered health care service In Norway, requires that medical education in general – both the basic education taught in educational institutions and the specialization process carried out in hospitals – enables medical trainees to perform their professional duties with adequate levels of both confidence and competence. Even though it is likely that the medical education at the University of Oslo has changed since the data were collected, there is still a need for further development and research to make sure that this goal is accomplished.

8 CONCLUSIONS AND IMPLICATIONS

8.1 CONCLUSIONS

In the background chapter, four knowledge gaps were presented. To conclude this thesis, I would like to fill these knowledge gaps with the newly acquired empirical knowledge provided in the three papers included in the present thesis.

Regarding the first knowledge gap (*to gain in-depth knowledge of how students respond to emotional issues within clinical encounters*), we investigated qualitatively how 11 medical students responded to patients' emotional issues within a clinical encounter. More specifically, we wanted to find out if, and to what degree, the students provided space to talk more about the issue and explicitly referred to emotion, and how they provided acknowledgment to the patient. The clinical encounter was modified in the way that actors were instructed to play out a patient case without the students being aware of the patient being an actor. By both observing the encounters in real-time and subsequently analyzing video recordings of these encounters in paper 1, we found that:

1. Students would commonly respond to patients' emotional expressions by posing yet another question. These questions would either fail to explore the emotion further by changing the topic of the interview by posing a new partly or completely unrelated biomedical question, or to some extent explore the emotion further by clarifying or elaborating on the psychosocial aspects of the emotion. The psychosocial questions would generally explore the emotional content as a problem or task which could be handled within the scope of clinical medicine.

2. Students would also sometimes provide space for the patient to disclose more information about her emotional experience without being specific as to what particular information they requested. These would either be expressed in the form of brief acknowledgment ("yeah," "right," "ok"), offer the patient minimal encouragement to continue further (by, for example, echoing the patient's words), or ask more generally about the patient's situation ("What was it like getting that message?"). These responses reflected an unspecific interest in the patient's emotional issue, which did not qualify as an empathic understanding of the patient's emotional issues (4).

3. Less commonly, students would make attempts to reassure the patient in response to the patient raising emotional issues. This was done by providing the patient with information obtained either during the course of their medical education, medical interview, or more generally as positive reappraisals which challenged the patient's interpretation of the

emotional issue. These responses demonstrated the students' tendency to interpret the patient's emotional issues as problems that could be solved with more medical information.

4. Finally, students were found to sometimes acknowledge the patient's emotional issue explicitly, but only by offering a descriptive factual recognition in which they slightly rephrased the issue as statements for the patient to confirm or by offering a general understanding of it. This way of responding did not explore the patient's emotional issue any further, nor did it present the student's own perspective regarding the patient's problem. These responses reflected notions of a cognitive rather than affective form of empathy (2, 51).

This analysis thus showed that students for the most part would attend to their perceived medico-professional obligations, and only occasionally display interest in the patients' emotional experiences. When demonstrating an interest in the patient's emotional issue, the students' responses would either treat the issue as a medical problem that could be solved by more information or reassurance, or with expressions of understanding which reflected cognitive aspects of empathy only.

To address the second knowledge gap (*the specific interactional functions of empathy in medical students' clinical encounters*), we specifically looked at the sequential placements of the students' responses within longer sequences of talk. By analyzing the same clinical encounters as in paper 1, but with a method better suited to study how the interviews developed turn-by-turn and how each turn of talk related to the previous turn, we ended up with longer but fewer emotional sequences eligible for further analysis. This was because some of the responses from the analysis conducted in paper 1 would also serve to "link" several patient emotional expressions together, forming extended sequences of emotional talk referred to as troubles tellings. With a special focus on the sequential placement of the students' actions or behaviors within these troubles tellings, we observed that:

5. Some of the students' behaviors previously interpreted in paper 1 as indicating students' initiative to talk about the patients' emotional issues were found to be preceded by patients' turns containing behaviors that could indicate emotion (such as quiet speech and pauses). These patient behaviors which were indicative of emotion were, however, not coded in paper 1 due to insufficient thresholds in the coding system employed for identifying emotional sequences. Additionally, some of these student initiatives were found to raise previously talked about emotional topics. This resulted in the students appearing to display more curiosity towards the patients' lifeworlds in paper 1 than in paper 2.

6. Students displayed many behaviors which invited the patient to develop her emotional issue further, but without acknowledging the emotionality involved in the issue. These would serve to elongate the emotional sequences but without any indication as to what information they wanted from the patient. The vague and unspecific nature of these actions did, however, not qualify as empathic curiosity on behalf of the students due to the same actions also indicating the student taking the role of a listener at other non-emotional parts of the interview.

7. When expressing understanding of the patient's emotional issue, these would tend to be located towards the end of the troubles tellings. Expressions of understanding would usually rephrase the patient's condition in paraphrases indicating some mental processing or express agreement with the patient's interpretation of the emotional issue and would be phrased in a way that displayed a preference for confirmation on behalf of the patient before the student continued the interview with a new information request. The acknowledgment of the patient's emotional issue would thereby serve as an indication of the student returning to their interview agenda soon after.

8. When addressing the emotional issue directly, the students would usually explore it further within a medico-professional frame of reference and tend to offer advice or information in return.

In this analysis, we were therefore given some insight into how the students employed specific strategies to deal with patients' emotional issues within the format of a medical interview, and how much of the initiative to talk about the patients' emotional experiences related to their illness was left to the patient. Once again, we observed how the students met the patients' troubles tellings in ways which reflected a cognitive medico-professional style of empathy.

The third knowledge gap (*students' perceptions, experiences, and reflections about their own empathic understanding in concrete clinical situations*) was addressed in paper 3. By interviewing each student shortly after the clinical encounter was completed using stimulated recall interviews, we found that:

9. The students as a group described the events and the subsequent emotional reactions of the patient in surprising levels of detail.

10. Students generally found it difficult to remember or articulate their own emotional reactions at the time of the clinical encounter. When reporting their recollection, they employed vague and general terms to describe their own emotional reactions (as being, for example, recognizable or understandable) and rarely reported having shared the patient's emotions

(such as being touched or moved by them) or experienced empathic concern for the patient (such as feeling sorry for or experiencing compassion).

11. The students reported that they were momentarily focused on the details to be covered within a medical interview (such as asking the appropriate questions and covering all aspects) and would therefore miss clues to the patient's underlying emotional condition. The students thus seemed to prioritize obtaining a complete medical history over the patients' emotional issues.

12. The students interpreted one of the patient's emotional issues as an indication of the patient not having received enough information regarding her diagnosis and therefore perceived their role in clinical encounters as providing expert advice or information. Some consequently tried to alleviate her worries concerning the future with advice or information obtained either while conducting the medical interview or from their medical education, some attempted to provide information like they would have liked to have been given it themselves, and some refrained from providing any at all.

13. The other emotional issue seemed to have placed the students in a conflict between identifying themselves with the perspective of the patient's primary care physician and that of the patient. Consequently, the students reflected on how much they really needed to know to take sides. Most students ended up providing support by taking the patient's perspective in the interview since this was largely interpreted as what was called for in the situation. There were, however, exceptions: One of the students asked the patient whether she had lost trust in the primary care physician, and another reported that he was affected by the patient's story and stated to the patient in the clinical encounter: "That's the kind of thing that shouldn't happen."

14. In the students' answers during the recall interviews, both an explicit and implicit distinction between two forms of "empathies" was described. On one side, there was the "layman's" understanding of empathy, where you do not employ empathic behaviors unless you have the corresponding mental experience, and on the other, there was the revelation (to many of the students) that empathy could also be employed strategically and instrumentally as a means to induce the feeling of being understood in patients. There were disagreements as to whether it would be acceptable to employ empathy strategically or not.

15. The students reported difficulties striking a correct balance between emotional involvement and distance, making them self-conscious, critical, and unsecure about their own behavior towards the patient. Most reported a wish to be more understanding towards the patient but felt restricted by their role as medical students.

These results, therefore, suggest that although the students did perceive the patient's emotional distress, they did not notice much of a change in themselves in terms of experiencing empathic concern for the patient. In this way, the reported experiences of the students were more compatible with previously described notions of cognitive empathy in medical students (2, 51). Additionally, we were provided with empirical evidence that medical students interpret patients' emotional issues within a concrete medical interview in light of their newly acquired roles as medical professionals.

To address the fourth and final knowledge gap (*lack of studies combining observational methods to data collection with phenomenological approaches to data collection*), we compared the results of papers 1 and 2 with the results of paper 3. We found that:

16. There were indications of "shifts" in students' awareness both in terms of switching from a more open-minded and relational style to a more schematic and focused style of interviewing going in both directions in all three papers. The simulated patient, however, did not report noticing these shifts.

17. The students' responses described as trying to reassure the patient in papers 1 and 2 largely corresponded to the moments during the clinical encounters where the students reported having interpreted the patient's emotional concern as a lack of medical information. This thus indicates that students already at an early stage in their professional careers start to interpret emotional issues in terms of their future institutional roles.

18. The students told of relevant personal experiences in the subsequent recall which were not disclosed during the clinical encounters. This may have caused a bias in the students' empathic understanding of the patient, in that these emotional experiences may inadvertently have been projected onto the patient's experience.

19. The students' lack of medical competence made them unable to fulfill their perceived roles as professional helpers in both the clinical encounters and the recall interviews.

These findings, therefore, suggest that many of the students' psychological processes were in fact reflected in the students' behaviors, such as switching between modes of consciousness, interpretations of emotional issues as issues to be handled clinically, and students' lack of clinical knowledge and skills. However, information pertinent to the student obtaining an appropriate understanding of the patient, such as their own experiences with illness, was not disclosed to patients.

8.2 IMPLICATIONS

Since this thesis is qualitative, we should be especially careful when drawing implications, since findings should not be considered facts in the sense of a quantitative study but rather as concepts or accounts transferable to specified settings (71).

8.2.1 Implications for medical education

8.2.1.1 *The role of emotion in clinical understanding*

This study shows that the role of emotions and empathy in the clinical understanding of patients should not be underestimated in medical education. Since human understanding necessarily implies an interpretation of some kind, the very essence of the medical interview can be summarized as achieving an *appropriate* understanding of the patient's medical condition through a mutual exchange of hypotheses, perspectives, and interpretations concerning the patient's lived experiences (4). Educators should inform students at the very beginning of their education that any understanding is based on the student's own subjective interpretation of the patient's symptoms (4). Additionally, they should be made aware that the information they obtain through a medical interview is filtered and colored through the student's own lived experiences and will therefore not represent objective knowledge in a traditional sense (194).

Authors and educators in medical education, and perhaps especially communication skills teachers, should also actively engage in teaching students about how conducting a medical interview has the main agenda of obtaining an exhaustive medical history but also revolves around engaging in the patient's personal history of their illness. Resultingly, students should also be taught ways in which to include their own personae when disclosing their own empathic understanding, and in this way attempt to enter into *dialogue* and consequently arrive at a mutual understanding of the patient's lifeworld in clinical encounters.

8.2.1.2 *Emotional awareness training*

Educators should also make students aware – either in didactic teaching, communication skills workshops or group reflection – of how their medical education affects students' interpretations of patients' emotional issues in the way that students are more likely to perceive them as expressing a wish for medico-professional assistance rather than as a need for being received with a humane and caring attitude. During the study, we were also made aware of how the present study made some of the students more aware of how they could actively engage in and work on their own empathic handling of patients through their participation. One implication is therefore to implement similar studies as this one, but rather designed as an intervention with the aim of making students more aware of how their own interview agenda influences their empathic communication with patients.

This study also highlighted the need for medical students to engage in emotional awareness training as a part of the formal curriculum, for example, in the form of mindfulness training (203). One could also, for example, implement targeted training regarding students' emotion-handling skills, such as the Situational Judgment test (208). Educators should also make more use of longitudinal integrated clerkships, where students follow patients through the entire stay from admission to discharge from hospital in order to gain insights into the patients' lifeworlds (105).

8.2.1.3   *Acknowledge empathy as an emotion-handling skill*

It should also be acknowledged rather than suppressed that there *is* a strategic and instrumental element to encountering patients' emotional issues with understanding and empathy. During medical education, there is a constant pressure to apply an objectifying biomechanical understanding of the human body which must be counteracted by a willingness and a curiosity to accept and understand the uniqueness of every human being. Educators should therefore communicate to students at an early stage that there are more or less effective ways to convey empathy, but that this always depends on the context and your present relationship with the patient.

8.2.2   Implications for further research

An implication for further research is more use of innovative research designs to investigate the development of student empathy throughout the entire medical education. Although the results of the study indicate that students experienced something similar to the concept of cognitive empathy (which has been reported to decrease in the course of medical education) (2, 51), Jeffrey found that the students participating in his qualitative longitudinal study of empathy across the course of their medical education developed a more nuanced view of empathy as a relational concept occurring not in the individual student, but instead acted as a bond between the student and the patient (102). Since our study was cross-sectional and only involved third-year medical students, it would be interesting to investigate how students develop their relational empathy by conducting a similar study as ours with a longitudinal design (i.e., conducting a similar study in the first and final year of medical school). It would also be interesting to see similar studies as this one conducted at other sites and in other countries to see if similar results are obtained.

8.2.3   Clinical implications

In terms of clinical implications, it is important for students to constantly be reminded of the significance of the patient's lifeworld perspective. This could be achieved by, for example, implementing mandatory sessions, e.g., each year, where students and practitioners in healthcare professions should sit down and *listen* to patients' accounts of their illnesses.

9 APPENDIX

9.1 OVERVIEW OF THE MEDICAL CURRICULUM AT THE UNIVERSITY OF OSLO

Year	Themes
1st	Human and cell anatomy, physiology and biology, basic communication skills, health, and society
2nd	Circulatory system, respiratory system, nephrology, nutrition, hematology, dermatology
3rd	Organ systems, nutrition, musculoskeletal system
4th	Neurology, ear-nose-throat, ophthalmology, psychiatry
5th	Reproductive system, obstetrics, gynecology, pediatrics, general practice, health and society
6th	Clinical medicine (including repetition of all the themes from 1st through 5th year)

9.2 CASE DESCRIPTION HANDED OUT TO THE ACTORS

GP: Male physician at Ullevål Hageby Medical Centre

Patient: Female, approximately 30 years old

Present illness: Hereditary cyst kidneys. Cysts = fluid-filled bladders

Social history: This part can be improvised by the actor. She lives with her husband.

Family history: The patient's father has serious kidney disease. *The disease was diagnosed very late, and his condition was at one point very critical. She is angry that her father wasn't diagnosed earlier; her father is now 77 years old and too sick to receive a kidney transplant. The father has been taking pills to lower his blood pressure for the last 15 years. He was diagnosed with polycystic kidney disease only two years ago even though the father repeatedly complained about a feeling of heaviness on both sides of the stomach to his GP. He functions relatively well in his daily life but is dependent on dialysis three times a week at Ullevål University Hospital (UUH). She follows her father to the dialysis Wednesday evenings; it lasts approximately three hours each time. Her only brother is 40 years old and does not suffer from the disease.* Her mother died of a stroke two years ago, she was 72 years old. There are no known diseases on the mother's side of the family. There is no other known serious illness in the family.

Past medical history: She had a couple of urinary tract infections over the last couple of years. The first one in 2007 and the second one in 2003, both during winter. During both infections, she had burning pain when urinating. She did not have a fever or other pains. She received treatment with antibiotics from her GP (the same GP that her father uses). She has seen this doctor for the last ten years. She is otherwise healthy. Her births (if any) were uncomplicated.

Chief concern: Two months ago, she experienced a pain/discomfort in the left side of the stomach/abdominal region. The pain was not very strong but present at all times. She did not reflect too much on it at first and did not seek any medical attention. When the pain did not go away, she worried about what it could be and ordered an appointment with her GP. She had never felt anything like this before.

Her GP found that her blood pressure was high (160/100). A urine sample showed blood in the urine, something she had not noticed herself. The GP made a referral for an ultrasound and further examinations based on the fact that her father suffered from hereditary kidney disease. She got an appointment at the kidney department at UUH one month ago. Cysts were found at both kidneys, and she was diagnosed with polycystic kidney disease. On this occasion, she was invited to participate in a study where she was asked to talk to medical students. She wanted to participate

because she thinks it is important that the students meet patients at an early stage of their careers. It was convenient for her to participate since she resides nearby. She reacted very strongly when she got the diagnosis. She was immediately reminded of her father's disease and has been worried and not sleeping well since she was diagnosed. Kari is seeing her GP again next week. They are going to make a plan on how to lower her blood pressure and talk more about the consequences of the disease.

Review of systems: She might have observed that her urine has been a bit darker. She has not noticed any change in bowel movements or menstrual cycle as of late. She is currently on a birth control pill of the type "Loette." She usually sleeps well. The last weeks she has had trouble sleeping. Her thoughts quickly wander toward the disease and towards the insecurity about how it will affect her life. She has not thought about whether she eats more or less than before. She usually does not weigh herself but does not feel that her weight has changed.

Drug history: She does not smoke now. She used to smoke around 20 cigarettes a week, but mostly at parties. She loves red wine, and usually drinks one glass every day. She feels that her relationship with alcohol is unproblematic. She tried hashish one time at a party when she was 19.

Medicines taken: Birth control pills of the type "Loette."

Allergies: No known allergies

Emotions associated with the patient's history:

WORRY for the situation and for the future.

ANGER since the father's diagnosis was made too late for him to have transplant surgery.

9.3 INTERVIEW GUIDE

INTERVIEW GUIDE, patient edition

Video about 20-25 minutes

PC with observer. Set a time marker for which parts of the consultation the actor is speaking about.

Stop the playback of the movie in parts where you express feelings towards medical students, either by the use words or body language. The expression does not have to have been conscious on your part. We are particularly interested in the feelings of emotional worry and anger, but we would also like you to stop if there are other situations you think are important that we get on video.
Ved stopp:

1.   **WORRY** for the situation and for the future

       ANGER since the father's diagnosis was made too late for him to have transplant surgery

   - What happened here?
       o   What were you trying to convey? Which emotion were you trying to exhibit?
       o   Did you plan to exhibit emotion?
       o   Did you experience the emotion as if it were your own emotion?
   - How was the communication or the mutual understanding here?
       o   E.g., how did you experience the student's response?
       o   How did you experience the chemistry or contact here?

2.   What were you trying to convey?

INTERVIEW GUIDE, Student edition

Plan for the interviews
Simulated patient is interviewed first. Sound recording on continuously. About 40 minutes.

General information:
There are no right or wrong answers, this is not about doing a test or examination of any kind – but rather share thoughts and experiences about interviewing/talking to a patient about their health condition while being a medical student in your 6th semester. We also have a video recording of the encounter, but it is just as important to hear your thoughts/try to understand what you think about the interview/conversation between you and the patient. The information which you provide us here will be treated confidentially and anonymized.
   - Feedback from (name 1) or (name 2) will be provided afterwards if desired.

Part 1:
Display the parts of the video recording which the SP marked. Review episode together with student. Begin by saying: "We want to know what you thought or felt during the consultation in the places where we stop the film" (i.e., NOT what you think about it in retrospect)

1.
   - Do you remember what you – in this situation – thought or felt that the patient was trying to express?
        o Did the patient's expression/feelings do anything to you here? (emotionally)
        o If you try to imagine what it was like during the consultation: what influenced your reaction or response to the patient?
   - How was the communication or the mutual understanding here?
        o How did you experience the chemistry or the contact here?

   - There are many ways to respond and communicate in most situations and often this happens almost automatically; but do you have any thoughts on what made you communicate the way you did in this situation?
   - How did you experience this/what do you think about this?

2.   Do you remember what you – in this situation – thought or felt that the patient was trying to express?

9.4 DEFINITIONS OF CUES AND CONCERNS FROM THE VR-CODES MANUAL (165)

Cue: A verbal or non-verbal hint which suggests an underlying unpleasant emotion and would need a clarification from the health provider. Instances include:

a. Words or phrases in which the patient uses vague or unspecified words to describe his/her emotions.

b. Verbal hints to hidden concerns (emphasizing, unusual words, unusual description of symptoms, profanities, exclamations, metaphors, ambiguous words, double negations, expressions of uncertainties and hope).

c. Words or phrases which emphasise (verbally or non-verbally) physiological or cognitive correlates (regarding sleep, appetite, physical energy, excitement or motor slowing down, sexual desire, concentration) of unpleasant emotional states. Physiological correlates may be described by words such as weak, dizzy, tense, restless, low or by reports of crying whereas cognitive correlates may be described by words such as poor concentration or poor memory.

d. Neutral expressions that mention issues of potential emotional importance which stand out from the narrative background and refer to stressful life events and conditions.

e. A patient elicited repetition of a previous neutral expression (repetitions, reverberations, or echo of a neutral expression within the same turn are not included).

f. Non-verbal cue:

- clear expressions of negative or unpleasant emotions (crying), or

- hint to hidden emotions (sighing, silence after provider question, frowning, etc.)

g. A clear and unambiguous expression of an unpleasant emotion which is in the past (more than one month ago) or is referred to an unclear period of life ("I was worried about…"; "I was terrified…").

Concern: A clear and unambiguous expression of an unpleasant current or recent emotion where the emotion is explicitly verbalized ("I worry about …"; "I am upset"), with a stated issue of importance for the patient ("*I am so worried* about my husband's illness"; "Since the illness of my husband I feel very helpless") or without ("I am so anxious"; "I am nervous"). Included are patient expressions confirming the health provider's explicit assumption or question about an unpleasant current or recent emotion (Health Provider: "are you anxious?" or "you must have been shocked!" Patient: "Yes").

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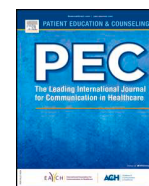
Medical students' expressions of empathy: A qualitative study of verbal interactions with patients expressing emotional issues in a medical interview

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ABSTRACT

Objective: Explore medical students' verbal responses to patients expressing emotional issues in a medical interview.
Methods: Eleven third-year students were instructed to conduct a medical interview with a simulated chronically ill patient while being videotaped (but were led to believe that the patient was real). An interaction analysis system (VR-CoDES) was used to identify patient utterances containing emotional expressions as well as student utterances responding to these emotional expressions. A qualitative content analysis of student utterances was then conducted.
Results: Four categories that depicted student responses were identified: (1) questions focusing on a medico-professional agenda, (2) allowing disclosure of emotions without explicit acknowledgment of emotions, (3) attempts at reassurance, and (4) explicit recognition of emotions, but most often on a factual and descriptive level.
Conclusions: Our analysis indicate that these students gave priority to medico-professional tasks and responsibilities in their responses. They demonstrated some interest in the patient's emotional experiences whilst most often leaving out their own personal perspectives.
Practice implications: Communication skills curricula should address how the medical interview affects empathy and interaction with patients and encourage discussion and reflection on how to retrieve medical information while paying adequate attention to the patient's and own emotions, experiences, and perspectives.

1. Background

Empathy has been reported to decline when medical students initiate their clinical training, and this has spawned debates on the validity, reliability, causes, and consequences of these findings [1–3]. However, little attention has been devoted to how students interact with patients in their clinical training [3]. The main activity that puts medical students in a position to show empathy toward patients is the medical interview [4], where students for the first time find themselves attempting to understand, interact, and relate to other people as patients [5,6]. At present, medical students are taught to pay attention to relational and affective dimensions of patients'

experiences as part of an increasingly patient-centered style of interviewing [4,7]. Although empathy is internationally recognized as a key clinical skill in medical education [4,7] and professionalism [8,9], controversies still remain as to how empathy is to be defined and understood – both in general, in medical education and the medical profession [10–12].

In this study, we have taken a broad hermeneutical perspective on empathy in medicine, which can be defined as "the appropriate understanding and communication of the patient's experiences" [13]. Within the framework of this definition, three different aspects of the clinician's empathy may be described: first, to perceive, identify and understand the other person's feelings, and thoughts and second, to be emotionally engaged on a personal level [14–16]. The third aspect of empathy is to verbally or nonverbally acknowledge the feelings of the patient and respond in a way which explicitly recognizes the patient's emotional state [15]. The response may be limited to a factual descriptive recognition, or also include

the clinician's personal acknowledgment of the patient's experience and his or her own perspective, in a more or less explicit way. The response may reflect the clinician's own feelings, and will be influenced by his or her knowledge, expectations, values, norms, and goals within the specific context of the medical consultation and the clinical understanding that is needed to diagnose and treat the patient. Empathy thus includes cognitive, emotional, interpretive, and moral aspects [3, 11, 13].

The favored method of teaching students medical interviewing is by learning and practicing behaviorally defined skills [4, 7, 17], often as part of a checklist of empathic behaviors that should be demonstrated within an interview. In examples of empathy in manuals and text-books empathy often appears constructed, in the sense that they are not taken from real-life consultations (e.g. "I can appreciate how difficult it is for you to talk about this." [4]) and is portrayed as separate from other clinical skills, making it difficult to see how empathy relates to other agendas such as retrieval of information relevant to diagnosis.

Studies have shown that patient emotion is often expressed as an indirect hint about underlying emotions, often referred to as cues [18–20] or clues [21]. Feelings may also be expressed more explicitly, labeled in the literature for instance as concerns [20] or empathic opportunities [22]. These emotional cues or concerns can contain information which could be relevant to both diagnosis and treatment, for example past and present negative experiences, fears or uncertainties related to their illness or treatment, difficulties coping with the present life situation, or even clues to underlying psychiatric disorders [23]. Opening up patient emotions and providing empathic responses in medical encounters may have positive impact on indirect measures of health outcomes in terms of reduced distress [24,25], and patient adherence [26,27]. Expression of empathy may also contribute to increased diagnostic accuracy, more meaningful work, an increased sense of well-being, and reduced symptoms of burnout for the physician [28–34]. Still, health-providers often miss out on opportunities to explore emotional aspects by responding with biomedical questioning, information giving, non-specific acknowledgement or premature reassurance [35–41].

In summary, empathic handling of patient emotions is currently emphasized in medical education and may have a positive impact on health outcomes for both physicians and patients, and is likely to be influenced, for good and bad, through clinical training and exposed in medical interviews. Still, there is a lack of in-depth studies on how medical students during clinical training handle patient emotions and provide empathy in clinical interviews [11]. Thus, we performed a qualitative study of how medical students verbally interacted with patients expressing emotional issues in a medical interview. We explored (1) to which extent the students more or less explicitly referred to the patient's emotions in their response, (2) whether they provided room for further disclosure of the patient's emotions and (3) whether they acknowledged the patient's experience and their own perspective, or responded only with a factual, descriptive recognition of emotions.

2. Methods

Data were collected as part of a larger study in which multiple methods were used to study empathy in medical students in their first year of clinical practice. Approval of the study was obtained from the Norwegian center for research data.

To ensure at least some degree of variation among the participants, we recruited student of both genders, and from two different classes - in total six female and five male students were included. Furthermore, four trained female actors participated in the role of a simulated patient. Another eight students volunteered to join the study, but these were not included since the richness of the data was sufficient to answer the research questions [42].

Written and voluntary informed consent was obtained from all participants. Students were informed that participation would involve an interview with a patient and a subsequent interview with the researchers. We did not inform the students that the patient was a simulated patient until after each individual interview session was over. For each of the 11 medical interviews, the student first received standardized written instructions on the assignment at hand ("The goal of the consultation is to identify the most important features of the patient's health condition") as well as a fact sheet on the patient's diagnosis. We purposely gave the students a task which was very similar to what they would have been given in a typical clinical training situation. The students were given a time limit of 20 min, and the mean consultation time was 19 min and 20 s

The actors simulated a patient case with polycystic kidney disease from a standardized script developed by KØB, HES, and RP in collaboration with the four simulated patients. The actors were instructed to display emotions related to two problematic situations in the patient's life: (1) worry attributed to the patient's insecure future for her and her family, resulting in sleep disturbances, and (2) anger/frustration with the father's primary care physician due to a long delay in the diagnosis of polycystic kidney disease (autosomal dominant inheritance) making it impossible for the father to have transplant surgery because of his age and medical condition (and therefore dependent on dialysis for the rest of his life). The actors (henceforth "patient") could freely choose when they would express these emotional experiences but were instructed to do so several times at varying intensities and with verbal as well as nonverbal behavior.

2.1. Context

The study was conducted in spring and autumn 2011 in a communication lab set up to resemble a general practitioner's office. The students were recruited from the medical school at the University of Oslo (six-year curriculum) via an introductory plenary lecture in connection with a mandatory experiential clinical communication skills course. In their third year, these students learn and practice clinical skills on patients at a university hospital, such as medical interviewing, physical examination of patients, differential diagnosing, and further patient follow-up. All of the students had completed prior mandatory courses in communication skills as part of their medical training, including an experiential clinical communication skills course with patients where they practiced "gaining the patient's perspective."

2.2. Analysis

The first author (KØB) transcribed the video recordings of all 11 medical interviews verbatim. The further analysis was then conducted in two steps; (1) first we identified patients' emotional expressions and student utterances related to these expressions according to instructions from an interaction analysis system (The Verona coding definitions of emotional sequences (VR-CoDES)) [43,44] and then (2) we did a qualitative content analysis of these student utterances.

2.2.1. VR-CoDES
VR-CoDES consists of a set of manuals with consensus-based, detailed instructions on how to identify and categorize patients' emotional expressions (EEs) in medical encounters as well as the

health provider utterances preceding and following these emotional expressions [43,44]. The reliability and validity of VR-CoDES are described and discussed in a number of studies [45–47].

We used the VR-CoDES to identify patients' emotional expressions - referred to in the VR-CoDES system as emotional cues and concerns. Finally, we analyzed the responses to these utterances qualitatively. This qualitative approach to using the VR-CoDES system thus provided us with an established framework to identify relevant utterances for the qualitative content analysis.

To identify EEs and student utterances, KØB and AF first analyzed several transcripts in several sessions together with another researcher with VR-CoDES coding experience (LK). All patient utterances or turns were identified by the first author as EEs if they contained emotional cues or emotional concerns according to VR-CoDES instructions [48] (examples are shown in Box 1). These EEs were further categorized as providing information from either the worry instruction or the anger/frustration instruction. If a patient EE was preceded by a soliciting, exploring, or facilitating student utterance, this student utterance was included in the qualitative content analysis. Additionally, all student utterances directly following an EE were included in the analysis [49]. Further information on the division into units of analysis of the VR-CoDES can be found in manuals available online [50].

2.2.2. Content analysis

Finally, the contents of the student utterances were analyzed based on the principles of content analysis [51]. The content analysis was mainly conducted by the first author in an iterative process consisting of (1) finding labels or codes for individual student utterances based on interpretations of the content of the utterance and how the content related to the patient's EE, (2) abstracting meaningful categories and subcategories that represented higher-order levels of organization of these utterances, (3) recoding all

student utterances under these proposed higher-order categories, (4) discussing these proposed higher-order categories in meetings with the other authors (AF and RP), and (5) revising these categories and subcategories describing main types of student utterances multiple times by moving back and forth between steps 1–5. Finally, when the authors had agreed on the categories that were the most representative for the 11 interviews, KØB categorized all utterances under their respective categories and subcategories.

3. Results

We found that each student responded to between 22 and 32 EEs. Most of these were worry EEs. Examples of EEs from the interviews are provided in Box 1. Through the content analysis, we identified four main categories that describe how the content of the students' utterances related to the patient's EE: (1) questions focusing on a medico-professional agenda, (2) expressions allowing some disclosure of experience without explicit acknowledgment of emotions, (3) attempts at reassurance and (4) expressions of explicit recognition of patient emotions, but most often on a factual and descriptive level. These four categories are presented below, together with descriptive subcategories representing each, as well as examples presented in boxes.

3.1. Questions focusing on a medico-professional agenda

The most common way for most students to respond to emotional issues was to ask questions focusing on a medico-professional agenda. Here, two categories were identified based on whether the student left the EE unexplored by responding with a new checklist interview question or asked for information partly related to the EE.

Box 1
Examples of patients' emotional expressions from the interviews (EEs).

Concern: Clear verbalization of an unpleasant emotional state	It is pretty scary when you are this young and this suddenly happens
	I am very frightened that I'll be as tied up as he is
	Yes, it's very frustrating
	I can get so furious when I think about it that I
	And I became a bit worried because it was strange, you know
	It makes me really angry you know, he can make up excuses all he wants and I'm sure he means it, but
	I really hate that disease.
Cue: Expression in which the emotion is not clearly verbalized or might be present	And I am thinking like, what is going to happen now?
	And now there is nothing they can do about it.
	That's when it comes, when I go to bed at night.
	I think I've just shut it out a bit.
	It's very hard.
	Mhm, it's very uncertain.
	You imagine the worst you know

3.1.1. Return to medical interview checklist questions

A common response to the patient's emotional issues, was for students to return directly to medical interview checklist inquiry (for examples, see Box 2). All students were found to respond to EEs repeatedly in this way, and especially one student primarily related to the EEs like this. Most of these responses were inspired by or taken from the topics in the standardized admission note and did

When approaching the patients' worry, the students sometimes referred explicitly to an EE, but typically they asked questions that would treat the patient's worry as a medical problem or task, for example, when enquiring about the patients' psychosocial functioning, support, or quality of sleep. A few students attempted to assess the severity of the patients' worry through asking about possible effects on daily life, asked questions that may screen for depression, or suggested that her worry

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Box 2
Return to medical interview check-list questions.

> Check-list questions from medical history (S6): P:- he got the diagnosis a few years ago [S: yes] Uhm, but he has probably had this way too long [S: yes] so now he has to have dialysis three times a week.
> S: Yes, do you have any other heritable diseases in your family -you mentioned your father?
> Using emotional concern as cue for check-list question (S7): P: I can get like -it's unbelievable I think, that he can go fifteen years on just blood-pressure medication and no diagnosis –S: Are you on any blood pressure medication right now?
> Check-list question initiated by understanding (S3): Yeah, no –I understand well that it's extra scary for you too, when you've seen how it's been with your father -mhm -do you know if there are others in your family who has had anything similar?

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not relate to the EE except for some brief minimal acknowledgement such as "yes" or the contrastive conjunction "but" before moving to another topic through posing a question. In a few of these responses, the students' subsequent medical history question selectively asked about biomedical content from the patient's utterance rather than the emotional aspect of it. Most often students did not explicitly refer to the EE and did not provide room for further disclosure. In a few cases in this subcategory, the students expressed some degree of understanding or acknowledgment of the patient's emotion but went on to pose a question without giving room for further acknowledgement of the patient's emotion.

3.1.2. Responding to EEs by exploring psychosocial issues

All students repeatedly responded to the patient's EE with more or less standard questions of medical history taking regarding psychosocial issues (Box 3). This was done in two different situations: when the EEs contained information that overlapped with standardized questions from the medical admission note or when the students explored the EEs as a health problem or threat to the patient's health.

was the patient's main health problem. One student explicitly suggested that the patient's worry stemmed from lack of information about the prognosis from other healthcare providers and indicated that more medical information would reduce the patient's worry.

The approaches to the patient's anger/frustration most often included questions asking for clarification of facts, such as the number of years from the father's symptoms to the time of the diagnosis or the medical reasons for not offering the father transplant surgery. However, there were exceptions: a few students explored how the story of the father was relevant to the patient's own disease. For example, three students wanted to know more about the effects of the patient's experiences with her father on the patient's own relationship with the healthcare services, however with no or little explicit reference to emotions.

3.2. Allowing disclosure of experiences without explicit acknowledgment of emotions

A second common way of dealing with the patient's emotional issues was when the students gave the patient an opportunity to

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Box 3
Responding to EEs by exploring psychosocial issues.

> Checking for social support (S3): Do you feel that you get support?
> As chief-complaint (S11): So is that sort of your uhm, should we say main complaint now, it is sort of that you're going around and thinking a lot about this?
> Effects on quality of life (S10): Do you think that it affects your daily life in any way? That you sort of go around and-[patient answers question]
> Screening for depression (S10): Not sort of a lacking ability to like find joy in what you've found enjoyment in previously or some of those a little [P: no] dejection related things?
> Lack of information (S7): No, you must be interested in getting as much information about your disease as fast as possible?
> Focusing on the facts of the patient's story (S11): But what you're saying is that your father was too far along to have transplant surgery [S: yes], was that because of the disease or because of his age?
> Exploring trust in health-care services (S4): Do you feel that you've sort of lost a little fai-trust in the health-care service, or?

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disclose their experience of what had happened without asking for specific information.

3.2.1. Brief acknowledgement and minimal encouragement

Although with varying frequency, all students uttered brief or minimal responses that acknowledged and/or encouraged the patient to continue talking (Box 4). In these utterances, the students

Box 4
Brief acknowledgement and minimal encouragement.

Echoing (S3): [P: ...but that I'm not quite present] Not quite present, no
Interjections expressing surprise (S4): [P: ...he's dependent on dialysis three times a week] Oh, he is.

would either relate to the patient's experiences without acknowledging the patient's emotional experience or through very brief or minimal acknowledgment by echoing, uttering short reverberations of what the patient had just said, or by expressing that what was said was out of the ordinary with interjections such as "oh." While not providing an explicit acknowledgment, the students gave the patient the opportunity to disclose her experiences further by being silent for more than three seconds or with minimal encouragement or acknowledgment such as "yes," "no," "ok," or "right," followed by a pause before the patient continued.

3.2.2. More general questions about the patient's experience

Some students would ask questions that gave the patient room to disclose their experiences (Box 5). All of the students but one

showed such an initiative, and almost all these were related to the patient's worry for the future. These questions opened up for further disclosure, but most often the student did not explicitly refer to the patient's expression of emotion. Most of these initiated patients' EEs through asking about the patient's reactions or thoughts at the time of diagnosis or asking more generally if the patient had something they would wish to add toward the end of the interview. A few students however, asked the patient if she wanted to share more about her thoughts or experiences or enquired more directly about those thoughts or perceptions in response to EEs. One student deviated from the others by repeatedly asking open questions and therefore appeared especially curious about the patient's experiences and perceptions.

3.3. Attempts at reassurance

We also identified a less common way of responding to emotions, shown at least once by all students, where students would attempt to reassure the patient with medico-professional knowledge and thereby challenge the patient's emotional interpretations of the situation (Box 6). Common to almost all responses were their function; they

Box 5
More general questions about the patient's experience.

Reaction to diagnosis (S4): What was it like getting that message?
Something to add (S4): Is there something you would like to add that we haven't talked about?

Box 6
Attempts at reassurance with medico-professional knowledge.

Lacking proper knowledge (S9): Mhm. I can't sort of reassure you without being a real physician, but I sort of think that-that if you haven't felt-if it's only now recently that you've felt something, and you haven't been bothered by it, then I wouldn't think that anything's too late sort of, [P: Mhm.] It doesn't sound like that, because you will-yeah, I'm a bit on thin ice here because I'm not sort of finished [with the medical education].
Referring to a source of information (S9): And at least with those in mind-that those-I quickly took a look at that piece of paper there, that it's only a pretty small share who ends up either in dialysis or or have to-or have to get a kidney-real kidney failure you know, that's [P:yes] –that's sort of not the majority.
Referring to others for information (S7): Yes, then that's what you'll receive information about next time.
Positive reappraisal (S8): Mhm, but one has to remember that it's -this was caught at a pretty early stage, [P:yes] compared to your dad, maybe.
Like a physician would (S11): Yes, one has to -one has to sort of -what you're saying is that transplant surgery is sort of a big procedure [P:Yeah, right], and you have to have to get treatment after that too, [P: Right, that's the thing] so it's a balance between when it's the correct time to do transplant surgery [Mhm, mhm]. But far from everyone with kidney disease will have transplant surgery.

made it possible to use information either obtained during the students' medical education or the medical interview itself in attempts to alleviate the patient's worries before moving on to another topic. Almost all of these dealt with the patient's worry. Generally, the students attempted to correct the emotional beliefs presented by the patient (an uncertain future) either by using medical knowledge as means of reassurance or by presenting more generalized positive reappraisals of the situation based on facts from the patient's own history, however again with no explicit reference to the patients' emotions.

3.4. Expressions of explicit acknowledgement and understanding

Responses in this category included more or less explicit references to patients' EEs, but most often in terms of a factual, descriptive recognition, rather than a more personal acknowledgment of the patient's experience from the medical student's own perspective (Box 7). Understanding was most commonly expressed

Box 7
Expressions of explicit acknowledgment and understanding.

Paraphrasing declarative question with slight reformulation (S10): So it's sort of like in a limbo?
Understood from 1st person perspective (S6): Yes, I understand that it's easy to become a bit-think a bit bitterly about such things.
Minimal 1st person understanding (S7): [P: I don't have the best of trust after what happened to my dad] Yes, I can understand that.
Legitimizing declarative statement (as right) (S9): Yes, that's pretty-dialysis is pretty heavy stuff, yes.
Legitimizing declarative statement (as natural) (S8): No, that must feel tough.
Short legitimizing statement (S2): [P: …I think-I think about it quite alot] Of course.
Normalizing statement rephrased as "one" (S10): Yeah that's the thing -when one gets that kind of a message many things goes through one's head at once and one forgets a lot.

toward worry EEs where students described the patient's emotional situation as new and uncertain, a great deal to take in, tough, anxious, frightening, or in limbo. In the less common utterances related to frustration EEs, the students would typically refer to the patient's situation as difficult, tough, or hard, or would paraphrase the patient's feelings as frustrated, angry, or bitter. One exception was a student that gave indications of his judgment concerning the anger situation (which is potentially threatening for him as a yet-to-be medical professional since it implies possible improper medical treatment) by stating that the delay in the father's diagnosis should not have happened.

The most common presentation of their understanding in both situations was paraphrases of the patient's experience formulated as declarative questions for the patient to confirm. The students' slight reformulations would indicate mental processing of the patient's experience. The second most common presentation was to express understanding from the student's first-person perspective with or without explicitly mentioning what was understood (for example, "I understand that"). When describing their understanding, the students would again repeat or only slightly rephrase the patient's words. Third, a few students would normalize the patient's concern by rephrasing the patient's experience using the indefinite pronoun "one". Finally, the students would sometimes legitimize or support the patient's experience by making declarative statements acknowledging that the patient's interpretation was right, natural, or true or by uttering short statements such as "of course". In a few cases, a more personal acknowledgement was expressed ("no, that must feel tough"). These formulations were about subjects such as the difficulties of dialysis, receiving the diagnosis, or living with uncertainty. Even if they demonstrated examples of recognition of the patient's emotions, they most often did so in a manner which

neither permitted an exploration of the patient's experience nor a presentation of their own perspective.

4. Discussion and conclusions

4.1. Discussion

The medical interview is a complex exercise where different tasks, identities, ideals, and obligations have to be balanced.

Our findings suggest that the students often responded to EEs with medical problem solving rather than with communication of empathy and care. Students in patient encounters have previously been found to focus on the collection of medical facts rather than devote attention to patients' life experiences [52]. A qualitative interview study with the same 11 students observed in our study also reported that biomedical knowledge was prioritized before emotional aspects, and that developing a certain emotional distance from the patient, and avoiding too much empathy was widely understood as being a key component of being a professional [5].

By limiting their questioning to what directly concerns the patient's health at this early stage, students may miss opportunities to challenge and gain awareness of their own assumptions about the patient (what is important to the patient, what are the patient's preferences, and possible misunderstandings and disagreements) which in turn may affect their abilities to communicate effectively. Instead, the aim to obtain an exhaustive medical history will probably influence students' perceptions and understanding of what is relevant, the patient's needs, and of possible solutions [5,11].

When relating to the patient's EEs through empathic communication, the students seemed to have steered a middle course which permitted them to display empathy without disclosing their individual experiences or perspectives. Paraphrases and declarative statements tended to place students as an observer or spectator to the patient's emotional experience. Even when students explicitly referred to emotions or gave room for further disclosure, they reduced empathy to a mirroring of the patient's experience without disclosing their own evaluation of the patient's situation. Similarly, empathic assessments (or adverbs such as for example "of course") supported the patient's interpretation of their situation or experience but did not present the student's evaluation of the causes or consequences of the emotional concern. Instead, they merely offered declarative statements which served to legitimize the patient's emotional condition.

This may be described as a form of objectivistic and detached empathy where there is a lack of response on a more personal level [32,53]. We suggest that our findings reflect the persistence of a cognitive, objective [54] and detached form of clinical empathy [32,33] in the medical interview which nudge the student to pay

limited attention to the patient's and their own feelings and experiences in order to be perceived as professional. This happens at the expense of a more emotional, relational, and intersubjective form of empathy where the student is encouraged to acknowledge the patient's feelings and experiences and expose and reflect on his or her own feelings and perspectives. This objectivistic and detached form of empathy is closely related to a more general form of objectivism that has been reported to be present in medical schools [55].

The natural curiosity with which students enter medical school has been reported to atrophy upon encountering the medical culture [52,56]. In the fourth main category described in our study, the students did provide some room for the patients to share their experiences, but generally without disclosing their own feelings. Empathy involves curiosity about another's distinct experiences [57], and since medical students may want to form emotional bonds with patients [58], they can still fear being overwhelmed emotionally [59]. Although one of the students who participated seemed to have conserved his or her curiosity towards patients, most of the results of this study indicate that medical students at an early stage of their clinical training may be educated and socialized to adopt a standardized set of professional behaviors that may inhibit empathic communication and spontaneous curiosity towards the patients' as well as their own emotions and experiences.

In our study, there is a risk of a selection bias in the direction of more patient-centered students due to the subjects' voluntary participation in a study on clinical communication. The arranged video-recorded situation using simulated patients in an artificial environment may limit the ecological validity of the data. The use of VR-CoDES to identify EEs may have constrained findings by causing us to overlook important data elsewhere in the interview not included in its VR-CoDES instructions.

4.2. Conclusions

Our analysis indicate that medical students most often give priority to medico-professional tasks and responsibilities in a narrow sense. In some cases, they show understanding and demonstrate some interest in the patient's emotional experiences while typically leaving out their personal perspectives.

4.3. Practice implications

Medical educators and communication skills curricula in particular should address how the medical interview as well as other key parts of the formal and informal medical curriculum affect empathy and interaction with patients. They should also encourage discussion and reflection on how to combine the retrieval of medical information with curiosity for the patient's emotions, experiences, and perspectives, as well as the student's own interpretations and agendas.

CRedIT authorship contribution statement

Knut Ørnes Brodahl: Conceptualization, Methodology, Formal analysis, Investigation, Data curation, Writing - original draft, Writing - review & editing, Visualization. **Arnstein Finset:** Conceptualization, Methodology, Formal analysis, Investigation, Resources, Writing - review & editing, Supervision. **Hanne-Lise Eikeland Storøy:** Conceptualization, Methodology, Investigation. **Reidar Pedersen:** Conceptualization, Methodology, Writing - Review & Editing, Supervision, Project administration, Funding acquisition.

Acknowledgments

Conflicts of interest

None.

"I confirm all patient/personal identifiers have been removed or disguised so the patient/person(s) described are not identifiable and cannot be identified through the details of the story."

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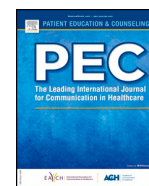
The first steps towards professional distance: A sequential analysis of students' interactions with patients expressing emotional issues in medical interviews

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A R T I C L E   I N F O

A B S T R A C T

Objective: Explore sequential patterns in students' interactions with patients expressing emotional concerns in a medical interview.
Methods: Concepts and principles from conversation analysis (CA) were used to examine the turn-by-turn sequential organization of student actions in eleven video-taped medical interviews. We used results from an earlier coding with an interaction analysis system (VR-CoDES) in a previously published paper as a point of reference.
Results: By using CA instead of VR-CoDES as our primary investigative method we observed that student turns previously coded as elicitations to simulated patients' expressions of emotion were often preceded by subtle patient initiatives. Students encouraged further elaboration by displaying their understanding of the emotional issue as a story telling still in progress. Students' expressions of understanding however, gave little room for further elaboration. Finally, students often addressed emotional issues as a medical issue and offered professional advice.
Conclusions: Students' actions seemed specifically designed to display interest in the patients' initiatives to talk about emotional experiences without departing from their initial interview task or violating norms for professional conduct.
Practice implications: Educators and practitioners should reconsider how the medical interview may shape expectations for professional conduct and can thereby unintentionally restrict students' empathy development.

1. Background

The favored method in teaching students medical interviewing is by practicing behaviorally defined skills in role-play or other group sessions [1–3]. Skills are often specified in check-lists of behaviors which should be demonstrated within an interview [2,3]. To express empathy is a skill commonly referred to in patient-centered models or manuals of medical interviewing, such as "demonstrating empathy" in the Four Habits model [4] or as empathic statements in the Calgary-Cambridge model [3]. However, examples of empathy often appear somewhat constructed ("I can appreciate how difficult it is for you to talk about this." [3]) and are portrayed as separate from

other clinical skills, making it difficult to see how empathy relates to other agendas such as retrieval of information relevant to diagnosis.

The typical underlying sequential structure of the medical interview was described more than 30 years ago (coined by Elliot Mishler as the "unremarkable" interview) as consisting of cycles of a sequential set of events: (1) a physician's request for information, (2) the patient's response providing that information (3) a possible extension of the sequence if the physician requests an elaboration or clarification of the patient's response, (4) a possible assessment of the patient's response(s) and finally a new topic changing information request [5–7]. Mishler argued that patients' and interviewers' shared knowledge of this pattern puts the physician in control of the turn-taking process and enables her to gather information needed to diagnose and treat the patient. However, patients also bring their own knowledge, experiences, expectations and goals to the interaction [8]. These are expressed as stories constructed from

interactions between biological, psychological and social aspects of patients' lives [9].

Within the conceptual tradition of conversation analysis (CA), displays of emotional concerns have been described as personal "trouble" emerging within a storytelling sequence [10,11]. In medical interviews with patients, health-care providers may display their understanding of the patients' actions as *alignment* with the ongoing activity of storytelling, defined by Stivers as "acknowledging the information provided and supporting the progress of the telling" [12]. Health-care professionals or health-care students may display alignment with continuers such as "mhm" or acknowledgment tokens such as "right" or "yes" [13] which pass at the opportunity for a turn at talk [14]. While aligning actions will signal that the patient has the floor until story-completion, disaligning actions will compete for the floor and fail to treat the story as still in progress, for example by interrupting with a new information request. CA studies on empathy in medicine (or the related, more technical term empathic affiliation applied in the CA literature) have mainly focused on how health-care professionals orient to patients' displays of affect while attending to their institutional task of recording the medical history [11,15–22].

In a recent content analysis of third-year medical students' verbal interactions with simulated patients' expressing emotional issues within a medical interview based on the same corpus as studied in the present paper, we identified six sub-categories which depicted student behaviors (see Table 1). In this content analysis, an interaction analysis system (VR-CoDES) was used to identify patients' emotional expressions within utterances according to pre-defined instructions [23,24]. A recent article on the conceptual framework and future directions of VR-CoDES stated that a potential limitation of the system was that the data analysis was limited to only fragments of the consultation [25]. The aim of the present paper is to analyze this same corpus using CA as an approach to analysis and thus to compare and contrast insights gained from application of the VR-CoDES system versus CA. The research question is therefore to examine whether the function of the students' utterances can be perceived differently in the context of larger sequences of talk as in CA, and more specifically how emotional issues are handled.

2. Methods

The present corpus includes eleven medical interviews between eleven third year medical students in their first year of clinical practice and four trained female actors in the role of simulated patients. Approval of the study was obtained from the Norwegian Centre for Research Data.

2.1. Setting

The actors simulated a patient case with polycystic kidney disease (PKD) from a standardized script developed by KØB, HES and RP in collaboration with the four simulated patients. The actors were instructed to display emotions related to two problematic situations in the patient's life; (1) worry attributed to the patient's insecure future for her and her family, resulting in sleep disturbances, and (2)

Table 1
Subcategories from content analysis. Abbreviations in bold.

Sub-category
Return to medical interview check-list questions
Responding to EEs by exploring **psychosocial** issues
Brief acknowledgment and minimal **encouragement**
More general questions about the patient's **experience**
Explicit **recognition** of emotions, but most often on a factual and descriptive level
Attempts at **reassurance** with medico-professional knowledge

anger/frustration with the father's house physician due to a long delay in the diagnosis of PKD (autosomal dominant inheritance) making it impossible for the father to have transplant surgery because of his age and medical condition (and therefore dependent on dialysis for the rest of his life). The actors (hereon referred to as "patient") could freely choose when they would express these emotional experiences, but were instructed to do so several times, at varying intensities and with verbal as well as non-verbal behavior [26].

2.2. Participants

The students were recruited from a medical education institution in Norway. In their third year, these students learn and practice clinical skills on patients at a university hospital, such as medical interviewing, physical examination of patients, differential diagnosing, and further patient follow-up. The students independently conduct a minimum of 12 medical interviews and physical examinations of new admissions that are documented as a standardized admission note in the patient's medical records and approved by a faculty representative. All of the students had completed prior mandatory courses in communication skills as part of their medical training, including an experiential clinical communication skills course with patients where they practiced "gaining the patient's perspective." Further information on the recruitment, procedures and context of data collection are available in the published content analysis of the same dataset [26].

2.3. Methodological approach

All 11 medical interviews were transcribed verbatim according to CA conventions originally developed by Jefferson [27] (see Appendix for transcription symbols). The specific method of analysis was CA as applied to institutional conversations [28].

In the present inductive-driven data analysis the first author made use of principles and concepts from CA to examine further the turn-by turn sequential organization in the corpus. The aim for the study was to examine the underlying patterns in how students oriented to the patient's emotional experience. Mishler's concept of the "unremarkable" interview sequence was used in the data analysis as an analytical framework [5–7].

2.3.1. VR-CoDES vs. conversation analysis

The six sub-themes in the aforementioned qualitative content analysis were identified by first using the Verona Coding Definitions of Emotional Sequences (VR-CoDES) [26]. VR-CoDES is based on the identification and coding of pre-defined turns of talk according to detailed manuals [23,24]. The first turns identified and coded were the patients' emotional expressions (EEs). Next, the first order responses from the medical students were coded [26]. Finally, the turn right before the EE was coded based on whether it was patient- or student elicited. This resulted in the identification and coding of mini-sequences or triads consisting of student elicitation-EE-student response [26].

Unlike VR-CoDES, CA is not limited by pre-defined instructions for the selection and coding of specific behaviors. CA would therefore sometimes include interaction both before and after the behaviors included in the VR-CoDES analysis. Consequently, the beginning of sequences was not always found to coincide with the first behavior coded in the VR-CoDES analysis and the end of sequences did not always coincide with final VR-CoDES responses within a sequence. In order to illustrate differences between the VR-CoDES and CA approach to data analysis, the present analysis makes use of results from the VR-CoDES analysis as a point of departure to compare and contrast the two methodological approaches.

3. Analysis/results

The patient EEs and the student utterances found in the VR-CoDES analysis were in general found to be organized into sequences on a higher organizational level than captured by the pre-established format of the VR-CoDES system.

Four recurring student behavioral patterns for orienting to the patient's emotional experiences were found in these sequences allowing for the integration of emotional concerns within Mishler's unremarkable interview sequence: (1) Students' elicitations were often preceded by patient initiatives, (2) Students' alignment to the patient's story telling was often limited to non-specific encouragement to elaborate, (3) Students' expressions of understanding gave little room for elaboration, and (4) Students often addressed emotional concerns as a medical issue and offered professional advice. In the following sections these patterns will be described together with analysis of selected excerpts.

3.1. Students' elicitations were often preceded by patient initiatives

According to the VR-CoDES analysis, most sequences were elicited by students, meaning that the first EE in the sequence was solicited, explored, or facilitated by the preceding student utterance. A CA approach to the same sequences revealed that these actions could also be understood as resulting from subtle patient initiatives which preceded the first utterance coded in VR-CoDES.

Most sequences coded as student-elicited were elicited by students' questions of which most were categorized as "psychosocial". In some of these questions, patients' EEs could be disclosed as direct answers to student questions and were therefore coded as student elicited. In excerpt #1, part 1 the topic of the initial information request at L1 regards the patient's quality of sleep. This allows for the EE to be disclosed directly at L2. The question's original purpose however, is to check of items from the admission note check-list.

Excerpt #1, part 1 (Student #3)		
Line	Transcription	VR-CoDES
1	S: How is it withe::: (.) sleep,=do you sleep well at night,	Elicitation: psychosocial
2	P: .hh e:: note: verhhhy, =hhhhhhh since: I found out.	Emotional expression

= signifies that the line is coded within the same VR-CoDES turn as the line above.

In excerpt #2, however, the EE is patient-elicited and therefore disclosed within the same turn as the answer to a preceding student question. The student asks for a clarification of the severity of pain based on whether the patient wakes up from them (L1). The patient provides the requested information at L2–3. At L5, however the patient initiates a topic-change with the contrastive conjunction "but" and discloses her EE somewhat hesitantly at L5–6.

Excerpt #2, part 1 (Student #2)		
Line	Transcription	VR-CoDES
1	S: but is it so that you wake up at night because it hu:rts and stuff or?	
2	P: Sometimes?	
3	BUT (.) usually I sleep pretty well.=I would say that.	
4	S: [mhm.]	
5	P: [.hh]hhhbute::: (1) EEhhhhm yes.=unlesse (1) e:h-h-hem:: (1)	Emotional expression
6	I thin-I think about it quite a lot,	=

In some sequences coded as student elicited the student posed a question in the subcategory of "experience" questions (Table 1). On closer examination some of these questions were preceded by

patients' actions which could indicate emotion but were not coded as EEs according to VR-CoDES criteria. The student elicitation could therefore also be understood as a response to preceding patient turns. In excerpt #3, part 1 we enter the very early stages of one of the interviews. The question at L12 was coded as a student elicitation according to VR-CoDES since the question is oriented directly towards the patient's experience on receiving the diagnosis. VR-CoDES coding instructions did however not include the inhalation and micro-pauses at L1, the long pause at L5 that might indicate trouble, the student's subsequent clarification at L6 which hints to the situation as potentially problematic, as well as the quiet speech at L10 which again could hint to underlying emotion.

Excerpt #3, part 1 (Student #4)		
Line	Transcription	VR-CoDES
1	P: three.hhh-three weeks ago (.) tomorrow (.) it is.	
2	S: threE weeks ago,	
3	P: mh[m.]	
4	S: [ye]s.hh	
5	(1.8)	
6	S: so ite:::-then you haven't known about it for very long.	
7	P: nhh.	
8	S: no.	
9	(1.5)	
10	P: °I haven't hh_°	
11	(1)	
12	S: .hh what was it like gettinge: that:e message,	Elicitation: Experience
13	(2.6)	
14	P: neh thate: wase: prettyhhh (1.) -it was prettY hard?	Emotional expression

Except for the sequences described in the next Section 3.2, the remaining student elicitations would ask the patient to clarify or elaborate on themes from earlier sequences and would therefore re-elicit rather than elicit the first EE in the sequence. In excerpt #4, part 1 we enter the later stages of an interview. At L2, the student somewhat abruptly changes topic from a discussion on sick-leave by asking a clarifying question presenting his own assumption of the patient's problem as resulting from a lack of information. The assumption builds on a topic from an earlier sequence in the same interview and also offers his own assessment of the patient's concern resulting in a patient EE at L7. Note that this student elicitation was categorized as a "psychosocial"-elicitation, but could also have been categorized under "reassurance".

Excerpt #4, part 1 (Student #9)		
Line	Transcription	VR-CoDES
1	P: to take sick-leave and sort of thing,	
2	S: No, but do you actually miss a bit of information.	Elicitation: psychosocial
3	P: Yes,	=
4	S: That's my impression,	=
5	(0.5)	
6	S: Yes, °yes,°	
7	P: I don't really know-	Emotional expression

3.2. Students' alignment to the patient's story telling was often limited to non-specific encouragement to elaborate

VR-CoDES interactions categorized as "encouragement" were difficult to place within Mishler's unremarkable interview since they neither requested nor assessed information from the patient (Table 1). From a CA perspective, these interactions could instead be

understood as the student's alignment with the patient's story-telling. In fact, similar actions were widely observed at all stages of interviews, in both sequences containing EEs and sequences not containing EEs. These actions were, however, often not coded according to VR-CoDES coding conventions since they were not considered as separate turns at talk, but rather included as part of the EE. Examples of aligning actions which were not coded according to VR-CoDES conventions can be seen in excerpt #3 (part 2) where the coded EE extends from L14 all the way until L27 since the aligning actions from the student at L15, 17, 21, 23, 26 and 28 are not coded as responses according to VR-CoDES coding conventions.

Excerpt #3, part 2 (Student #4)

Line		Transcription	VR-CoDES
12	S:	.hh what was it like gettinge: that:e message,	Elicitation: Experience
13		(2.6)	
14	P:	neh thate: wase: prettyhhh (1.) -it was prettY hard?	Emotional expression
15	S:	=Mhm.	=
16	P:	to get that,	=
17	S:	Mhm.	=
18	P:	It was.	=
19		(1.8)	=
20	P:	ºdh [ba-]º	=
21	S:	[.hh]yes?	=
22	P:	=it was veri::-it has been very sort of unreal ande:::m (.) veryverie:::m_	=
23		(1.8)	=
24	P:	Yeah.	=
25		(0.8)	=
26	S:	MH:[m.]	=
27	P:	[ve]ry hard.	=
28	S:	=Mhm.	=

3.3. Students' expressions of understanding gave little room for further elaboration

VR-CoDES interactions categorized as "recognition" (Table 1) explicitly expressed understanding of the patient's emotional experience or situation. In terms of placement within Mishler's unremarkable interview sequence, these empathic responses would serve as receipts of the students' achieved understanding of the patient's experience by explicitly claiming insight or comprehension, paraphrasing or acknowledging the patient's emotional experience. These actions would put the student back in control of the further turn-taking procedure; the student has now understood the patient's emotional message and can move on. This led to some actions expressing understanding not being coded as individual VR-CoDES interactions since the empathic response took part in students' initiatives to end sequences.

In excerpt #1, part 2, we return to L5 as the student requests a clarification of his understanding that the patient "thinks a lot" in response to the patient's EE. Initially this proposal appears to communicate a high degree of imaginary access into the patient's experience but paraphrases the patient's utterance in an earlier sequence (not included) where the patient stated that she "thinks about it a lot". After the patient's acceptance of the student's suggestion at L6, the student realigns with the storytelling by offering a minimal acknowledgment followed by a slight pause at L7–8.

Excerpt #1, part 2 (Student #3)

Line		Transcription	VR-CoDES
1	S:	How is it withe::: (.) sleep,=do you sleep well at night,	Elicitation: psychosocial
2	P:	.hh e:: note: verhhhy, =hhh[hhhh] since: I found out.	Emotional expression

Line		Transcription	VR-CoDES
3	S:	[No.]	
5	S:	Think a lot,	Response: recognition
6	P:	Yes.	
7	S:	Yes.	
8		(0.7)	
9	P:	So it's hard if I first wake up at night then it's hard to fall asleep again, =and_	Emotional expression

As we reenter excerpt #2, part 2 the student offers a congruent assessment to the patient's EE by referring to the patient's reaction as self-evident at L7. The long 1.5 s break at L8 offers realignment. The patient takes the offered turn and her elaboration results in a new EE at L9. At L10 the minimal acknowledgment "No right" followed by another long pause of 1.5 s once again offers realignment. The patient however does not take the offered turn, and instead the student claims to comprehend the patient's concern at L12. By adding "well" the student also offers an evaluative assessment of the patient's experience. The patient then explains her worry at L13, another EE, to which the student once again offers a congruent assessment at L14. When the patient does not take her chance to elaborate however, the student ends the sequence by posing a new topic-changing question screening for other symptoms at L16. Note that the combination of the student's actions resulted in the student's last response being categorized as "Return" in the VR-CoDES analysis.

Excerpt #2, part 2 (Student #2)

Line		Transcription	VR-CoDES
6	P:	I thin-I think about it quite a lot,	Emotional expression
7	S:	mhm of course_	Response: recognition
8		(1.5)	
9	P:	soe:: for that reason maybe I haven't slept that well lately.	Emotional expression
10	S:	no right.	Response: recognition
11		(1.5)	=
12	S:	no I understand that well.	=
13	P:	Because I wonder what (1) will happen,	Emotional expression
14	S:	That goes without saying,	Response: Return
15		(0.8)	=
16	S:	But have you been aware of anything else,	=

In excerpt #3, part 3 the student similarly initiates topic change by claiming to have achieved imaginary insight into the patient's experience at L30. The speeded-up talk and the subsequent latching on ("=.hhhE:") to the preceding patient's turn at L33 indicates initiative to hold the floor. Instead of offering realignment however, the student asks a somewhat related clarifying question which marks an end to the sequence. Consequently, the claim of empathy was included as taking part in the VR-CoDES response categorized as "Return".

Excerpt #3, part 3 (Student #4)

Line		Transcription	VR-CoDES
27	P:	[ve]ry hard.	Emotional expression
28	S:	=Mhm.	
29	P:	=hhhh. (0.5).hhhhhh	
30	S:	>yes i can imagine that.<	Response: Return
31	P:	=mhm.	=
32	S:	=.hhhE::::ehh-but it's been no:w two months since you firsthhe: started to	=
33		feel something[hhh.]	=
34	P:	[m]hm.	=
35		(0.5)	=
36	S:	.hhh and then > how much time passed did you say (.).	=
37		before you went to the doctor	=

3.4. Students often addressed emotional concerns as a medical issue and offered professional advice

In VR-CoDES student responses categorized as "psychosocial" and "reassurance" (Table 1) students would orient to the patient's experience as a medical issue by either asking the patient to elaborate on health-related causes or consequences of the concern or by providing assessments where they suggested medico-professional advice or solutions to the patient's emotional concern.

In excerpt #1, part 3, the patient elaborates on her emotional concern about bad sleep between L9–15 and is encouraged to do so by the student's displays of alignment at L10, 13 and 16. The student's question at L19 categorized as "psychosocial" seeks to clarify the consequences of the patient having trouble sleeping. The patient utters another EE despite the student's attempts to map the patient's psychosocial functioning between L20 and 23. At L24 the student echoes the patient's EE and the student initially displays realignment at L27 leading to the action being categorized as an "encouragement" response. As the patient inhales heavily at L34 however, the student interrupts with a minimal acknowledgment at L30, and a subsequent hesitant topic change at L32.

Line		Transcription	VR-CoDES
		Excerpt #1, part 3 (Student #3)	
9	P:	So it's hard if I first wake up at night then it's hard to fall asleep again, =and_	Emotional expression
10	S:	=Mhm.	=
12	P:	.hhh (.) e::hh- and if my daugher wakes up,=thene::	=
13	S:	=Mhm.	=
14	P:	then I can w(h)ak(h)e up from that and (.) not fall asleep again before (1)	=
15		.hhhh ve:ry early in the morning,	=
16	S:	No,	
17	P:	Mhm.	
18		(0.7)	
19	S:	But it affects your work and stuff a little or?	Response: psychosocial
20	P:	.hhhne::-<I Bue:->I notice that I j<-(.) can feel a bit like: (1).hff I just am at work,	Emotional expression
21	S:	Mhm.	=
22		(2)	=
23	P:	But that I am not verye:: (1.2) p[resent,]	=
24	S:	[not comple]tely present [no,]	Response: encouragement
25	P:	[No.]	
26		(0.5)	
27	S:	No.	
28		(0.5)	
29	P:	.hhh[hhhhh]	
30	S:	[° Right.°]	
31	P:	M::.	
32	S:	>ehh do you smoke?	

Medico-professional assessments would display students' normative expectations of the physician's role as providing solutions to the patient's problem. In Excerpt #4, part 2 the patient utters an EE at L7, but is interrupted by the student quickly taking over the turn with rushed talk (indicated with an <). At L10 he confirms both his lack of professional status, and also explicitly expresses his own normative expectations in the situation – the physician should be able to reassure the patient with information. They both laugh at this statement, the patient at L9 and L11 and the student at L10 – marking his statement as somehow funny or out of place.

Line		Transcription	VR-CoDES
		Excerpt #4, part 2 (Student #9)	
7	P:	I don't really know-	Emotional expression
8	S:	>I would have liked to be the one to inform you about that,	Response: reassurance
9	P:	YeaHahaha.hhh	=
10	S:	hnhn-the way we really should have done it,.hh hhh	=
11	P:	ehehehe.hhh yes_	

In excerpt #5 we enter the middle of an emotional concern sequence. The student's question at L1 is an attempt to return to a medical agenda, but the patient resists the shift in agenda by uttering an EE at L6. The student utters an empathic paraphrase in response, but since the patient was still holding the floor when the student's response was uttered it was not coded as a VR-CoDES response. The student repeatedly aligns with the patient's storytelling from L9–17. When the patient refrains from elaborating at L18, the student offers acknowledgment at L19. When the patient does not take the offered realignment at L21, the student provides advice which suggests the patient's concern can be alleviated with information at L22–23 and 26. Note that in the VR-CoDES analysis, the entire stretch between L19–26 was considered one response categorized as "recognition" since the student provides space for the patient at L28. At L30, the patient utters yet another EE to which the student claims insight and offers an evaluative assessment at L33 followed by realignment. When the patient does not take the turn, the student then ends the sequence by making a new unrelated request for information at L36.

Line		Transcription	VR-CoDES
		Excerpt #5 (Student #3)	
1	S:	What-what was the message from Ullevål [the hospital],	Response: Return
2		=with these-are there many cysts,=or big cysts,	=
3	P:	Eve::-I know there are ma-there are many at least,	Emotional expression
4	S:	>Mhm.<	=
5	P:	=E::m (.) but more specific than that I haven't gottenhh.hhh	=
6		>or I d-it w-was soe:: (.) [difficult_]	=
7	S:	[it was a lot,]	=
8	P:	to get that messa[ge] at [all] that I also have:::	=
9	S:	[Yes.] [Yes.]	=
10		(.)	=
11	P:	E::: disease in my kidneys,=it'[se]:::hhhhhhhhhh	=
12	S:	[yes,]	=
13		(1)	=
14	P:	E:::: no. it was like just no (.) nonono,	=
15		(2)	=
16	P:	°I can't handle it,°	=
17	S:	no.	=
18		(3)	=
19	S:	yes it's a very tough message to get,	Response: recognition
20	P:	°=mhm.°	=
21		(2.5)	=
22	S:	but it's - then it's important to (1) ask what you need to ask at the doctor's,	=
23		=because it's often like that after you've gotten a tough message, then_	=
24	P:	.hhhh	=
25		(1)	=
26	S:	one doesn't remember all the information that's been [given later on]	=
27	P:	[no right]	
28		(1)	
29	S:	mhm.	
30	P	=no it can be a little too much ate::: a time,	Emotional expression

31	S:	yes thate::::	Response: re-cognition
32		(1.2)	=
33	S:	I have full understanding of that,	=
34	P:	=mhm.	
35		(1.2)	
36	S:	.hhh I wo::nder have you-have you been sick before?	

4. Discussion and conclusions

4.1. Discussion

The present empirical study highlights some of the context-specific issues (and solutions) in providing empathy in the medical interview and is intended as a contribution in the recent debate on empathy changes in medical students as they enter their clinical years [29–31]. It also offers a perspective on how a medical interview can be perceived and interpreted differently using two different approaches to data analysis.

As previously stated, Mishler's "unremarkable" interview sequence consists of repeating cycles of events where the first of these is the health-care provider's request for information. Our findings suggest that specific requests for information are reserved for medically relevant information, whereas the patient's personal experiences and perspectives most often are presented at the patient's own initiative. Students' initiatives for retrieving information are limited to the themes already defined by the standardized admission note.

We have also demonstrated how the concept of "facilitation" (when the student utters continuers such as "mhm" or acknowledgment tokens such as "right" or "yes" [13]) is treated very differently by the two approaches to data analysis. While in the VR-CoDES analysis they were only rarely coded due to thresholds for defining an utterance as a response, we see that when using a CA approach to the same corpus, these are seen as distinct units in the interview which has a role in encouraging and supporting a storytelling in progress. Similar reports have been made by Stone et al. where they found that important nuances in the interaction disappeared when applying strict coding rules in the coding of empathic interaction in primary care visits [32]. Alignment to the patient's emotional concern as a storytelling seems to offer a solution for displaying interest in the patient's story without crossing boundaries between personal and professional relationships. Firstly, normative expectations for displaying politeness [33], detached concern [34] or medico-professional objectivism [35] may have hindered students from enquiring directly about the patient's experiences, and secondly, professional norms for displaying affective neutrality [36] and emotional control [37] may have discouraged students from displaying their spontaneous emotional reactions to the stories, for example as *response cries* [38] in which recipients to storytellings may display non-lexical signs of emotional states which suggest empathic affiliation [39].

We have also shown that students' empathic responses served as receipts of the students' achieved understanding of the patient's experience. While displays of empathy could have been used to communicate students' personal perceptions, reactions or judgments, they rather seemed to validate or display support of the patient's emotional experience without necessarily agreeing to the patient's evaluation of her situation. Within Mishler's unremarkable interview sequence, these actions put the students in the role as recipients of information and therefore put students back in control of the turn-taking process without violating the previously described norms for professional conduct. In informal daily life conversations, recipients often end trouble-stories by offering a positive projection of the future or by engaging in a second story [10]. The position or perspective the recipient of a trouble-story hears the teller of the story to be taking may however depend on contextual

factors of the particular conversation [12]. The final understanding typically presented to patients was an assessment of the emotional concern as requiring the students' professional help by for example suggesting further information or advice as a solution. The professional duty to help the patient with medical problems inherent to the physician's role coincided with the motivation for prosocial action. If students' earlier responses assessed the patient's evaluation of the situation as for example uncertain or scary as correct (as opposed to a natural reaction), they would risk contradicting themselves in suggesting professional solutions to the problem.

While the constructed setting and use of pre-instructed, simulated patients compromise the ecological validity of the results, the data collection strategy allowed us to collect a lot of data within a short period and more easily compare interactional patterns across students. However, bearing in mind that simulated practice is frequently used in medical education and assessment, this setting much resembles a setting which the students could encounter in real life. VR-CoDES is useful to identify individual expression of emotions and the immediate responses of clinicians and to arrive at quantifiable results concerning both patients' and physicians' emotional interaction in different medical settings [23,24]. CA on the other hand, is an inductive qualitative method which seeks to describe and explain the structures and sequences of social interaction [27], in this case medical interaction. Since this was a qualitative study with only 11 medical interviews designed specifically to be of high emotional intensity (each student responded to between 22 and 32 EEs [26]), we started by coding the corpus with the use of VR-CoDES first to get an estimate of the number of EEs, before examining the corpus with the use of qualitative methods. When studying a complex phenomenon such as empathy in medical interactions one must make use of appropriate, but available methods.

5. Conclusions

Despite the advances of patient-centered medicine, emotional issues were most often subtly initiated by the patient, even when the student's turn immediately preceding the patient's expression re-elicited the emotion. The sequential format of the medical interview imposes several restrictions on students' interaction with patients which may impact the extent to which they express empathy. In this study questions asking for specific information were reserved for agenda-relevant information and students' contributions were restricted to non-directive encouragement to disclose emotional concerns, relatively brief displays of empathy with little display on a personal level and assessments offering professional advice.

5.1. Practice implications

Educators and practitioners should reconsider how the medical interview shape expectations for professional conduct and thereby unintentionally limit students' opportunities to practice and develop empathy with their patients.

CRediT authorship contribution statement

Knut Ørnes Brodahl: Conceptualization, Methodology, Formal analysis, Investigation, Data curation, Writing – original draft, Writing – review & editing, Visualization. **Hanne-Lise Eikeland Storøy**: Conceptualization, Methodology, Investigation. **Arnstein Finset**: Conceptualization, Methodology, Formal analysis, Investigation, Resources, Writing – review & editing, Supervision. **Reidar Pedersen**: Conceptualization, Methodology, Writing – review & editing, Supervision, Project administration, Funding acquisition.

Declaration of Competing Interest

The authors have no competing interests to declare.

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Appendix. Transcription symbols used in analysis (The Jefferson Transcription system)

[]	Square brackets mark the start and end of overlapping speech. They are aligned to mark the precise position of overlap as in the example below.
↓	Vertical arrows precede marked pitch movement, over and above normal rhythms of speech. They are used for notable changes in pitch beyond those represented by stops, commas and question marks.
→	Side arrows are used to draw attention to features of talk that are relevant to the current analysis
Underlining	indicates emphasis; the extent of underlining within individual words locates emphasis and also indicates how heavy it is.
CAPITALS	mark speech that is hearably louder than surrounding speech. This is beyond the increase in volume that comes as a by product of emphasis.
°I know it,°	'degree' signs enclose hearably quieter speech.
(0.4)	Numbers in round brackets measure pauses in seconds (in this case, 4 tenths of a second). If they are not part of a particular speaker's talk they should be on a new line. If in doubt use a new line.
(.)	A micropause, hearable but too short to measure.
wa::nted	Colons show degrees of elongation of the prior sound; the more colons, the more elongation.
hhh	Aspiration (out-breaths); proportionally as for colons.
.hhh	Inspiration (in-breaths); proportionally as for colons.
Yeh,	'Continuation' marker, speaker has not finished; marked by fall-rise or weak rising intonation, as when delivering a list.
y'know?	Question marks signal stronger, 'questioning' intonation, irrespective of grammar.
Yeh.	Full stops mark falling, stopping intonation ('final contour'), irrespective of grammar, and not necessarily followed by a pause.
bu-u-	hyphens mark a cut-off of the preceding sound.
> he said <	'greater than' and 'lesser than' signs enclose speeded-up talk. Occasionally they are used the other way round for slower talk.
=	'Equals' signs mark the immediate 'latching' of successive talk, whether of one or more speakers, with no interval.
heh heh	Voiced laughter. Can have other symbols added, such as underlinings, pitch movement, extra aspiration, etc.
sto(h)p i(h)	Laughter within speech is signalled by h's in round brackets.

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III

RESEARCH

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Medical students' experiences when empathizing with patients' emotional issues during a medical interview – a qualitative study

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Abstract

Background: There is evidence that empathy decreases as medical students go through clinical training. However, there are few in-depth studies investigating the students' own experiences when trying to empathize in concrete clinical encounters. We therefore wanted to explore medical students' perceptions, experiences, and reflections when empathizing with patients expressing emotional issues.

Methods: A qualitative content analysis of semi-structured interviews with third year medical students ($N = 11$) was conducted using video-stimulated recall from their own medical interview with a simulated chronically ill patient. Students were led to believe that the patient was real.

Results: Five themes which may influence student empathy during history-taking were identified through analysis of interview data: (1) Giving priority to medical history taking, (2) Interpreting the patient's worry as lack of medical information, (3) Conflict between perspectives, (4) Technical communication skill rather than authentic and heart-felt and (5) The distant professional role.

Conclusions: The participating students described conflicts between a medical agenda, rules and norms for professional conduct and the students' own judgments when trying to empathize with the patient. To our knowledge, this is the first study ever to document the students' own perspective in concrete situations as well as how these reported experiences and reflections affect their empathy towards patients. Since we now know more about what is likely to hinder medical students' empathy, educators should actively encourage group reflection and discussion in order to avoid these negative effects of history taking both inside and outside of the clinical setting.

Keywords: Medical education, Empathy, Physician-patient relationship, Medical students, Communication, Physicians' role, Professionalism, Clinical interview, Patients' emotions

Background

Entry into clinical care represents an existential and moral challenge for medical students as they are faced with the suffering of others and have to learn how to deal with the emotional aspect of their work as physicians to be [1]. The main activity in which medical students interact with patients is the medical interview [2]. In the course of a medical interview, students are expected

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to retrieve medically relevant information while at the same time paying attention to the existential and affective dimensions [2–4]. The ability to demonstrate empathy is internationally recognized as a key clinical skill in medical education and practice [2, 4–6]. Empathy in medicine can be broadly defined as the appropriate understanding and communication of the patient's experiences and has been reported to encompass cognitive, affective, behavioral, interpretive and moral aspects [7], but controversies still remain as to how empathy in medicine should be defined [8–10].

Despite evidence that self-reported empathy decreases as medical students go through clinical training [11, 12] there are few in-depth studies of students' own experiences with empathy in medical interviews with patients [9]. Students have been reported to want to form emotional bonds with patients [13] but are ultimately worried about the potential of being overwhelmed emotionally themselves [14] and tend to focus on collecting medical facts [15]. Surprisingly little attention has been paid to the emotional development of students, and to a certain degree medical education today still encourages students to distance themselves from both their own and their patients' emotions [16, 17]. Some recent qualitative studies on medical students' empathy have explored students' perceptions, conceptualizations, or experiences with empathy more generally [18–20]. To our knowledge there are no previous in-depth studies exploring the students'

own perspective on what they actually feel, think or understand when the patient expresses emotional issues during the medical interview, or on what influences the students' empathy in such concrete clinical encounters. In a recent review of 206 studies on empathy in medical practice, none were reported to look at "concrete details about what the (…) physician understood/misunderstood" [21]. The aim of the present study was therefore to explore students' perceptions, experiences and reflections when trying to empathize with patients expressing emotional concerns in a concrete medical interview.

Methods

Data were collected as part of a study in which multiple methods and approaches to data gathering were used to study empathy in medical students in their first year of clinical practice (see Fig. 1). As a part of this study, we conducted a qualitative sub-study with video-stimulated recall interviews to answer the following research question: What characterizes students' perceptions, experiences and reflections when empathizing with patients expressing emotional issues in a concrete medical interview?

Participants

We enrolled eleven medical students (six female and five male) as well as four trained female actresses serving as simulated patients (SPs). The strategy employed to recruit
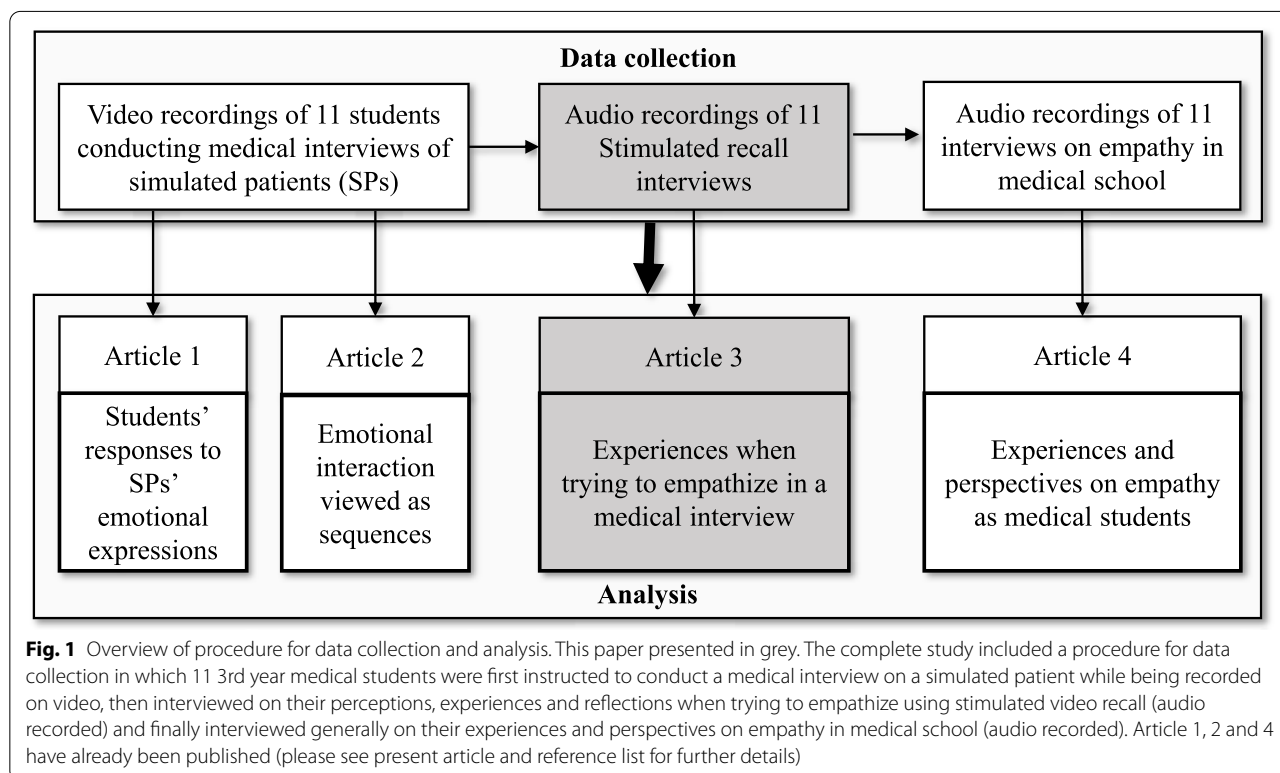

Fig. 1 Overview of procedure for data collection and analysis. This paper presented in grey. The complete study included a procedure for data collection in which 11 3rd year medical students were first instructed to conduct a medical interview on a simulated patient while being recorded on video, then interviewed on their perceptions, experiences and reflections when trying to empathize using stimulated video recall (audio recorded) and finally interviewed generally on their experiences and perspectives on empathy in medical school (audio recorded). Article 1, 2 and 4 have already been published (please see present article and reference list for further details)

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the eleven students was purposeful sampling [22]. A total of 19 medical students voluntarily signed up to join the study after a 5-min presentation during a non-mandatory lecture. However, eight of these were not included since we found that the richness of the data with eleven students was sufficient to answer the research questions [23]. All eleven students first completed a medical interview with an SP, before qualitative interviews were conducted by KØB and HES with each student using video stimulated recall (see Fig. 1). None of the participants had any relationship or prior knowledge of KØB and HES's role in the study other than that they were fellow medical students. Written and voluntary informed consent was obtained from all participants, except that each student got the information that the patient was an SP only after the qualitative interview part of the study was finished. Students were offered a complimentary feedback session on their clinical communication by a trained communication skills expert in appreciation of their contribution to the study. Since the study was not defined as health research, we were, according to Norwegian regulations, exempted from the obligation to seek approval from the Regional Committee for Medical and Health Research Ethics. The protocol for the research project was approved by the Norwegian Social Science Data Services where aspects of privacy protection were assessed (project number 39888).

Context
The students, recruited in the second semester of their third year of medical school, had recently learned and practiced clinical skills with the use of role-play, simulated and real patients at a university hospital, such as medical interviewing, physical examination of patients, differential diagnosing, and further patient follow-up. In their second year, all medical students at this institution learnt how to conduct a medical interview which follows a standardized structure in order to gather relevant information as quickly as possible. One requirement during their third year is to independently conduct a minimum of 12 medical interviews and physical examinations of new admissions that are documented as a standardized admission note in the patient's medical records to be approved by a faculty representative. All of the students had completed prior mandatory courses in communication skills as part of their medical training, including an experiential clinical communication skills course with patients where they practiced "gaining the patient's perspective" when conducting the medical interview.

Setting
The study was conducted in spring and autumn 2011 in a communication lab set up to resemble a general practitioner's office. For each of the medical interviews, the student first received standardized written instructions on her assignment at hand ("The goal of the consultation is to identify the most important features of the patient's health condition") as well as a fact sheet on the diagnosis of the patient (an inheritable disease called polycystic kidney disease). We gave the students a task which was very similar to what they would have been given in a typical clinical training situation. Participants were given a time-limit of 20 min to conduct the interview and the mean consultation time was 19 min and 20 s. All consultations were observed on video-link by HES and KØB and recorded on video.

The actors simulated a patient case with polycystic kidney disease from a standardized script developed by KØB, HES, and RP in collaboration with the four actors. The actors were instructed to display emotions related to two problematic situations in the patient's life: (1) worry attributed to the patient's insecure future for her and her family resulting in sleep disturbances, and (2) anger/frustration with the father's primary care physician due to a long delay in the diagnosis of polycystic kidney disease making it impossible for the father to have transplant surgery because of his age and medical condition (and therefore becoming dependent on dialysis for the rest of his life). The actors could freely choose when they would exhibit these emotional concerns (ECs) during the consultation, but were instructed to do so several times, at varying intensities and with verbal as well as non-verbal behavior.

Video-stimulated recall interviews
Directly after the end of the consultation the actor reviewed the entire video recording of the consultation accompanied by two members of the researcher group (KØB and HES). The actors were instructed to stop the video where they displayed these ECs, referred to below as EC moments. The actors were asked why they stopped at the particular EC moment, about which scenario they portrayed and how they experienced the communication using a semi-structured interview guide.

Directly after, each student was shown sequences with these ECs (referred to below as EC sequences) from his/her medical interview in a video-stimulated recall interview with both researchers (HES and KØB) using a semi-structured interview guide. The EC video sequences were started approximately 30 s before the EC moment indicated by the actor and ended approximately 30 s after. Some EC sequences included more than one EC moment since several EC moments could be registered within the one-minute EC sequence. Due to time constraints, not all EC moments were shown to students. Instead, the researchers (HES and KØB) would show as many ECs

moments as possible and made sure all students viewed at least one EC sequence from each of the two problematic situations. The choice of which EC moments to show students was made by the researchers based on EC moment evocativeness and displayed chronologically in the order they appeared in the video. The number of EC sequences shown to each student ranged from two (containing four EC moments with a total duration of 2 min and 43 s) to seven (containing eleven EC moments with a total duration of 7 min and 23 s).

The EC sequences served as stimuli for recall of the student's own experience of the events depicted in the videos. Since all 11 students still believed they conducted the medical interview on a real patient during the recall interviews, we will use the term "patient" in the remainder of the article. The students were informed that this procedure was not an examination of any kind, merely an attempt to share thoughts and experiences about interviewing a patient about their health condition. They were further encouraged before each viewing of each of the EC sequences to try to remember what they thought or felt during the medical interview, and not what they thought or felt when reviewing the EC sequence. Students were informed that these sequences were selected because something important had happened or that the patient felt that something important happened in these sequences. For each EC sequence students were interviewed on what they thought the patient was conveying in that particular EC sequence, how the student reacted to what was conveyed, what they thought influenced their response to the patient and how they felt the contact was with the patient. For more information on the students' verbal behavioral responses to the two different problematic situations, please see [24, 25]. Each of these EC sequence interviews will be referred to as mini interviews in the remainder of the text. The stimulated recall interviews lasted between 25 and 45 min for each student and were recorded on a digital audio-recorder and were transcribed verbatim.

After the video-stimulated recall interviews, the students were interviewed more generally about empathy (see Fig. 1). Results from this last part of the interviews with the students has already been published [20].

Analysis

To answer the research question, the recall interviews were analyzed based on the principles of qualitative content analysis [26, 27]. The content analysis was mainly conducted by the first author in an iterative process consisting of (1) finding labels or codes for individual student utterances based on interpretations of passages of text using NVIVO 12 software, (2) abstracting meaningful themes that represented higher-order levels

of organization of these passages, (3) recoding all passages under these proposed higher-order themes, (4) discussing these proposed higher-order themes in meetings with one of the other authors (RP), and (5) revising these themes multiple times by moving back and forth between steps 1–5. Finally, when RP and KØB had agreed on the themes that were the most representative for the 11 video-stimulated recall interviews, KØB categorized all passages under each respective theme. Passages pertaining to the various themes were then selected and condensed by KØB. Below, the key themes are presented through the sub-titles, while the pertaining content is presented through condensed text and illustrative quotes. Quantifiable terms have been used consistently to give an idea of the numbers of students backing each claim. Generally, "a few" has been used to refer to more than two, "some" between three and five, "most" between six and ten and "all" for all eleven students. This study adheres to the COREQ 32-item checklist for reporting qualitative studies [28].

Results

The students commented on both the worry and the frustration situations in the recall interviews. All students mentioned both the factual details about the patient's situation and the patient's emotional reactions to the events the patient had gone through. When asked about their own experiences during the medical interview however, students often found it difficult to remember or articulate what their own emotional reactions were. Generally, the patient's situation was described in the recall interviews with more general terms such as "understandable" or "recognizable" and students only occasionally reported having shared the patient's emotional experience or having felt empathic concern for the patient such as being touched, being moved, feeling sorry for, or experiencing compassion or sympathy. Most students remarked how the patient was easy to talk with and that she was willing to share. Many of the students thought that the patient's emotional concerns were uttered because the patient had a need to vent her feelings. The patient's willingness to share was in most cases interpreted as a sign of trust or good chemistry.

However, all the students explicitly or implicitly conveyed that the recorded EC-moments showed that their empathy was limited, and spent most of the time in the recall-interviews reflecting on possible reasons for this. Thus, most of the recall interviews was about what influenced the medical students' empathy in the EC-moments. Through our analysis of the students' perceptions, experiences, and reflections in the recall interviews, the five following key themes emerged: (1) Giving priority to medical history taking, (2) Interpreting

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the patient's worry as lack of medical information, (3) Conflict between perspectives, (4) Technical communication skill rather than authentic and heart-felt and (5) The distant professional role. The results presented below are structured according to these themes. All the themes describe phenomena, tendencies or reasons that influenced their empathy in the concrete clinical encounters, and most often in a negative way. In general, key theme (2) reflects how the students' responded to the expressed worry problematic situation and key theme (3) reflects how students responded to the frustration/anger problematic situation. Unless further specified, the findings presented below were similar for both problematic situations.

Giving priority to medical history taking

Some students reported that their attention was primarily directed at remembering and completing the different tasks of the medical history taking and that they therefore were disrupted from or became inattentive to the patient's ECs. This included focusing on the list of mandatory questions in a medical interview such as questions on hereditary diseases; finding out what to ask for next and covering all the different parts of the standard medical interview. Susan reported during an interview that she thought to herself:

> *… medical history, medical history, medical history, now suddenly I'm a doctor […] I was actually a bit preoccupied with remembering what I should ask about. And when she started bringing up the thing about the father having cystic kidney disease, it was sort of an OK transition into asking about hereditary diseases.*

Sometimes, the patient's ECs were interpreted as information relevant for further medical interviewing. James told how "the student or professional in me woke up" when the patient told of bad sleep lately related to the worry situation. As it is a typical symptom of depression, he started thinking about a scale for diagnosing depression. This distanced him a bit, he felt. He tried to do the right thing in asking about her emotional or mental health. Consequently, he felt like he dealt with the situation a bit more schematically and rationally, rather than being open and empathic, and he hoped that the patient wouldn't notice the change in him.

Interpreting the patient's worry as lack of medical information

Students often reported having interpreted the patient's emotional worry situation as a concern which could be handled with medico-professional help or advice.

Students tended to think that the patient's concern about the future was caused by a lack of medical information. Consequently, they saw it as their primary task to offer expert information or advice or offer reassurance in response to patient's emotional worry. This interpretation of their role influenced student responses in a number of ways.

Some refrained from providing medical information or advice as a response since they felt they lacked medical competence, knowledge on prognosis, or were not yet in the proper professional role. Hannah wanted to say to the patient that she might not experience the same thing as her father but thought that she did not know enough about the disease to do so:

> *… how far can you go in reassuring her without doing it on false premises? so then I really just shielded myself by sitting there saying as little as possible.*

Others used themselves as a reference and provided advice or reassurance the way they would have liked to receive it themselves, if they were the patient. For example, Susan both felt and consequently replied to the patient: "Maybe it will be better once they start a proper treatment and you become more aware of the situation". Jack found an opportunity to clear up what he thought was a misunderstanding. He was uncertain whether the information the patient gave him came from her experiences with her father or was received in connection with her own condition. He wondered whether the patient really knew what it meant to have transplant surgery, and therefore felt a need to clear up her expectations in that situation and provided her with information on how not everyone with her diagnosis will need transplant surgery. Still, he did not want to go to deep into the matter since he did not feel like he had the professional competence. He said that this way she can take this information with her to her primary care physician and discuss it with him.

Conflict between perspectives

Most students talked about how the frustration/anger situation placed them in a conflict between identifying with the patient's perspective and that of the primary care physician.

Some students identified themselves primarily with the primary care physician. Susan remembered imagining that she was sitting there as a physician. And as a physician she could imagine that such a thing might happen in a busy professional life. She instinctively felt the need to protect the primary care physician, but shortly after realized that that was not what the patient needed. It was better to just receive the patient's frustration instead

of opposing it. Hannah was unsure and curious about whether a mistake had been made or not. She further reflected on whether she really had to know the truth to express agreement with the patient - maybe she should just agree without knowing. Mary on the other hand, was worried that the patient had already lost trust in the health care services and said during the recall interview:

> *I thought to myself: "[Name of communication skills teacher], what should I say now?" How should I convey that I have an understanding of what she is saying?*

Consequently, she suggested to the patient: "maybe that does something to your trust relationship with your primary physician". Later on, she reported that she is afraid to say things that sound "made up" since you contradict yourself in saying that something is sad to hear and then just move on by changing the topic of the conversation.

Other students identified more with the patient. Daniel remarked that her version did sound frustrating, but that he himself did not feel that he had enough knowledge to become angry himself. He did not feel like he could take part in frustration towards a physician he had never met and did not have a personal relationship with. Michael mentioned that he recognized the picture she was painting; he had heard similar stories before. Michael however, felt that that this was not right, it was not supposed to be that way, and that affected him. He therefore said to the patient: "that's the sort of thing that shouldn't happen". Emma mentioned how she recognized the situation the patient was in from her own life. She herself had experienced how it is to have a sick father. This made her more able to understand the situation the patient was in. She added that she would have asked more about whether the patient's experience affected her trust in the health-care system if she had more time or was her actual physician.

Technical communication skill rather than authentic and heart-felt

When commenting on attempts to communicate understanding or interest back to the patient in the videos, students usually used technical terms to describe how they responded to the patient such as through active listening and facilitation. It was important for them to find ways to let the patient talk about her feelings and show to the patient that they indeed had understood what was being said to them. Susan said the following about her own behavior when the patient spoke of her father's condition:

> *I tried to be supportive without saying too much [...] to "facilitate" her a bit. I did not really say much, I mostly just nodded and said "yes", I think. So I was kind of trying to seem understanding, yeah, professionally understanding.*

According to her experience, as long as you show that you understand – even very briefly - it is ok - and she hoped that the patient saw that she listened. She adds that maybe you do not have to verbalize too much, and that often if you do that can be awkward. Later in her interview, she said that patients catch onto "fake empathy" very quickly – i.e., the physicians who do not feel any kind of empathy but still say they do. This will, according to Susan, only be attempts at empathy, but not real empathy, more like a "textbook"-form of empathy. She further added that the empathy must be real-felt- you have to feel that the person cares and understand – both emotionally and cognitively. If not, it does not matter what you say. You are supposed to try to understand the patient and want what is good for the patient - that must always be a core concern.

Emma described facilitation as a good conversational technique since you can show empathy without really feeling anything yourself. She added that there isn't necessarily anything wrong in that, since there is no way to tell that the patient knows that you are being honest or not. She herself thought that all physicians were honest and sincere before she started medical school and learnt about conversational techniques and facilitation. Michael claimed that as a clinician you use empathy consciously as a tool to achieve something. In real life, i.e., as a "normal" fellow human, empathy is more real. He mentions that maybe you use it a bit artificially in clinical situations even though you are supposed not to. And although you might do a bit of play acting and is extra understanding to achieve something - to provide the feeling of safety or to get more information - he says it is important that it does not turn fake either.

The distant professional role

Many students were critical of their own behavior. Students often said that they would try to show more understanding or empathy if they had the opportunity. Many students told of difficulties knowing what to say and especially what would be the right things to say as a professional, and this uncertainty seemed to result in the students being more reticent towards the patients. Susan said she found the patient's story sad when reviewing it, but when asked if she could remember what she actually felt during the medical interview, she revealed that she entered a role – she distanced herself and did not feel the reality of it there and then.

Hannah reported that she did not know if she was allowed to ask the patient some personal questions. She was really curious to ask these questions, but was afraid they would be too personal:

I felt like I was tied up, like a coward [...] I felt that, no, this is not right. But can I cross that line? [...] over to the more personal and say that this is going to work out and possibly even touch her [...] say things like "you seem like a strong woman"?

She chose to suppress these impulses because she felt like she had to be professional. She said that she had learnt in medical school that if you freak out, then the patient will freak out as well. You are supposed to be sensitive and empathic in a professional manner, but she did not know how, since she had never been empathic professionally before in her life.

Discussion

The third-year medical students who took part in the present study articulated some of the difficulties related to the experience and demonstration of empathy in concrete patient encounters and shed light on what may influence medical students' empathy when entering clinical training and practice. The students informal self-assessment of their empathy was very much in line with the results later emerging from our own detailed analysis of the interviews [24, 25]. However, this study contributes to a better and more detailed understanding of the observations made in these interviews – especially what influenced the communicative behaviors of the students.

One key finding from this study is that some of these students reported that they were primarily occupied with remembering and asking the different questions involved in recording the patient's medical history and that this could interfere with paying attention to the patient's emotional concerns. These same students argued that acquisition and possession of biomedical knowledge was considered more important than the emotional and relational aspects of patient encounters [20]. While these attitudes are also likely to influence students' priorities, the results of the present study suggest that students rarely deprioritize the patient's emotional concerns deliberately. Rather, the students are inattentive to such concerns because the students are too cognitively focused on medical history taking. Another possible reason is that the students' horizons are shaped in a way that makes it more likely that the patient's concerns are interpreted within a medico-professional frame of reference [9], for example when the students interpret the patients' expressions of worry as needs for further information. Empathy also involves curiosity about another's distinct experience [29], and it has been claimed that the natural curiosity with which students enter medical school, atrophies as they become gradually more assimilated within medical culture [30]. When attempting to accommodate to implicit or explicit ideals of medical history taking,

students can miss important aspects, for example how the illness affects this individual patient [31] and the individual patient's needs and preferences.

Although these students described recognizing and understanding the patients' emotions, they only occasionally experienced empathic concern for the patient. In general, the students' understanding both reflected and was more consistent with the ideal of cognitive empathy which is generally encouraged within medical education [7, 32]. This more objectivistic form of empathy is closely related to the idea that it is possible and advisable to understand the patient's perspective without being affected emotionally and without bias [9, 32] and to ideals of detached concern [17], affective neutrality [33] and a more general form of objectivism that have been reported to be present in medical schools [34]. The empathic experiences reported by the students may very well reflect a transitory phase as they adapt to their recently acquired professional identities [15, 20]. However, other studies suggest that students will not make use of later opportunities in their careers to develop alternative ways of communicating, but will continue to respond to patient emotion with biomedical questioning, information giving, nonspecific acknowledgement or premature reassurance [35–41]. For example, Agledahl et al. demonstrated that physicians working in hospitals mask a neglect of patients' existential worries with politeness [42]. These physicians actively directed focus away from patients' existential concerns, focused more on medical facts and rarely addressed personal aspects of patients' situations.

While empathy was generally regarded as important and appropriate in the situation, some students struggled with combining empathy and compassion with professional norms and ideals. While the recent addition of communication skills training to the medical curriculum certainly has put empathy on the agenda, some students seem to regard rules for professional communication with patients as absolutes. It is possible that communication skills courses may contribute to this uncertainty by providing the illusion that there is always a professionally correct way to respond or communicate. If the institutional role in which students find themselves permits little or no space for the expression of their own emotional reactions, interpretations and judgments, the very format of the medical interview may contribute to reduce awareness of or even extinguish students' affective responses and expressions of own interpretations. Roter and Hall claim that roles in provider-patient relationships are just a kind of conformity, not moral codes or rule of law [43]. Our results nuance this claim in that implicit or explicit ideals for medical interviews and professional empathy can be perceived as guiding principles of conduct as well as rules for professional or right empathic behavior.

Larson and Yao compare the physician's role in empathic interaction to that of an actor [44]. They further argue that there are no apparent ethical issues in this because we as human beings hide our true feelings all the time. We would however argue that the discrepancies seen between students' instrumental ways of providing understanding to patients (such as the application of skills or techniques to let the patient vent her feelings) and their own more personal or lay norms of empathy indeed constitutes a moral dilemma. We find it worrisome that students are sometimes taught to perform forms of play-acting to convey that they understand the patient's emotional issues regardless of what the students are actually thinking and feeling. By separating instrumental outcome-focused empathic behavior from the broader interpretive, interpersonal, moral, existential, and emotional dimensions of empathy, important aspects and relations in clinical perceptions and judgment may be lost. The main focus of students seems to be on the parts of the patients' narrative that the students can act on as physicians and not to what they can respond to as fellow humans. If medical students are mainly encouraged to perform medical tasks effectively and not meet patients as fellow human beings, core aspects of the students future role as physicians seem to be challenged at an already early point in their careers [45].

A strength of this study is the use of detailed, in-depth video recall-interviews to investigate students' experiences and reflections on their own empathic behavior through qualitative inquiry rather than statistical data. These findings provides crucial knowledge about the motivations and considerations behind the communicative behavior of the eleven students and are also supported by semi-quantified observational data published from the same larger study [24, 25]. To our knowledge, this study is the first of its kind. As far as we know, no significant changes have been made to the curriculum in communication skills teaching at this particular institution since the data were collected. Due to the department responsible for the study, the participating students were probably more than averagely interested in empathy and communication. Our hopes for the future are that the present study can encourage scholars to conduct studies with innovative approaches, designs and multiple methods in order to study the complex phenomenon of empathy in clinical settings. We would also like to invite medical educators and practitioners to encourage student reflection and discussion on how to conduct a medical history with curiosity for both the patient's as well as their own thoughts, feelings, interpretations and perspectives.

Conclusion

In this qualitative analysis, five themes which may influence student empathy during history-taking were identified: (1) Giving priority to medical history taking, (2) Interpreting the patient's worry as lack of medical information, (3) Conflict between perspectives, (4) Technical communication skill rather than authentic and heart-felt and (5) The distant professional role. To our knowledge, this is the first study ever to document the students' own perspective in concrete situations as well as how these reported experiences and reflections affect their empathy towards patients. Since we now know more about what is likely to hinder medical students' empathy, educators should actively encourage group reflection and discussion in order to avoid the negative effects of history taking both inside and outside of the clinical setting.

Declarations

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