

Originalartikel

'Human First': Teaching close reading and creative writing to medical students

Presentation of a new narrative medicine course in Denmark – and a review of the literature assessing the empirical evidence for the utility of such courses

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The University of Southern Denmark has introduced a mandatory course in Narrative Medicine into the curriculum of undergraduate medical students. It is part of a trajectory called 'Human First', which aims to improve the students' empathic abilities by teaching them narrative competencies to draw on in their future clinical encounters as medical doctors. Although, theoretical accounts seem to make a strong case for the utility and value of educational interventions, such as courses in narrative medicine or medical humanities,

there has been a lack of empirical studies providing evidence to support such accounts – especially those focusing on the longterm effects and impact on patient care. Our systematic literature search and review of empirical studies regarding the effects of teaching close reading of fictional texts and creative writing to medical and health care students, tentatively confirmed previous indications of positive effects. Larger, multisite and more rigorous studies that assess the long-term impacts of these educational interventions and adjust for local variations are, however, still in short supply. Finally, we present critical reflections on whether empathy and similar phenomena are at all measurable and discuss the possibility of meaningfully evaluating the utility of curricular interventions such as narrative medicine courses.

Introduction

The humanities and health sciences share a common interest in the human condition. The two domains thus complement each other in ways that deepen our understanding of phenomena like birth, health, illness, and death. As an example, consider the case of a person suffering from a life-threatening disease. Knowledge from the medical field can result in treatments providing either recovery or a prolonged lifespan, and/or perhaps simply symptom alleviation. Literature and visual arts, on the other hand, may provide insight into the human experience of falling ill, of knowing death is immanent, or of recovering from disease, and help us understand how such a process affects personal identity and social relations.

In this article, we will narrow our focus within the health sciences and humanities, to the interdisciplinary field of medicine and literature. Modern day medical students often spend a large amount of their study time gaining knowledge about the functions and physical composition of the human body and how it may be healed after illness. This knowledge is the foundation for their ability to provide adequate healthcare to future patients. However, future physicians also need the ability to communicate well with their patients and build a relationship of trust, in order to make the patients feel safe and comfortable enough to disclose health problems and to increase their adherence to treatment.

Narrative Medicine is the practice of medicine with a *narrative competence*, understood as “*the ability to listen to the narratives of the patient, grasp and honour their meanings, and be moved to act on the patient’s behalf*” (Charon, 2001). As a transgressing discipline, Narrative Medicine was established at Columbia University in 2000 by Rita Charon, a professor of internal medicine with a PhD in English litera-

ture. Prior to the emergence of this discipline, scholars such as Kathryn Montgomery Hunter, a professor of literature, had been arguing for some time for enhancing the practice of medicine with a 'narrative knowledge' (Hunter, 1991). In terms of education, a 'narrative competence' is more aligned with the current principles of learnings goals at universities. Courses in Narrative Medicine have since then been taught to medical and health care students at Columbia using the literary methods of close reading and creative writing, which includes group reflections, interpretations, and discussions. The specific combination of close reading of so-called high literature and creative writing "in the shadow of" the readings is unique for Narrative Medicine as it seeks to enhance the clinical skills of listening. The courses at Columbia have, in recent years, inspired a number of universities to set up courses in Narrative Medicine or in the overlapping, but broader, field of Medical Humanities. Courses in Medical Humanities or Narrative Medicine are now found both in North America, Europe, the Middle East, South America, and Asia (Abdel-Halim & Alkattan, 2012; Acuna, 2003; Chun & Lee, 2016; Elcin et al., 2006; Gupta & Singh, 2011; Shankar, 2013). Medical Humanities covers disciplines such as History, Anthropology, Theology, Psychology, and Philosophy – as well as Cultural Studies, Film, Art, Theatre, Music and Literature. A course in medical humanities can include reading of literary texts, although these readings are not necessarily rigorous close readings followed by spontaneous creative writing. Literature per se is not even a sine qua non in a course in narrative medicine. The methods of close observation and creativity may also be applied to art, theatre, film, or music.

It is often assumed, that a medical doctor who understands both biomedical functionality and the manner in which her patients experience their conditions, may provide better care because each patient's specific circumstances and values are taken into account. The theoretical underpinnings established by researchers from Narrative Medicine – and Medical Humanities – have made this a sensible hypothesis; and in recent years, researchers have begun to investigate this proposition empirically.

This article is an exposition with several subsections. We begin by describing a new mandatory course in Narrative Medicine for undergraduate medical students at the University of South-ern Denmark. Then, we consider possible obstacles in regard to mapping the effects of teaching such courses, including the selection of outcome measures employed to investigate this, and even the fundamental question of the capacity of empirical evidence to support theoretical propositions. In an attempt to answer these questions, we continue with a review of empirical studies

regarding the effects of teaching interventions for medical students employing close reading of literature and creative writing exercises. We conclude by offering our perspectives on the measurability of the clinically relevant skills intended to be developed and strengthened by such courses.

The Narrative Medicine Course at SDU

Since 2017, the University of Southern Denmark (SDU) has offered a six week long mandatory course in Narrative Medicine for first-year medical students, as well as a six week long elective course for graduate health care students. The mandatory course for medical students is the first of three small courses taught by scholars from humanities and medical science; the two subsequent courses are Health Psychology and Medical Ethics, each of which count two ECTS points. The course(s) prepare the medical students for their first academic encounter with a person with one or more chronic illnesses. Each individual student meets a patient in his or her own home thrice during a short period of time. The student reflects on the meeting in a short piece of writing, which is read by and discussed with a nurse with extensive knowledge of the patient and with fellow medical students, supervised by the same nurse. During the first lecture of the narrative medicine course, one of these nurses is present and excerpts from one student's writing is presented.

SDU's new trajectory is named 'Human First', thereby signalling a subtle change in point of view from a biomedically based patientcentred care to a narratively based care of a human being; i.e. a person with a life story first, and a patient in the health care system second. There are several considerations behind this initiative. First of all, it is considered desirable by the Faculty of Health Sciences for the students to meet a chronically ill person early in their education and thereby cultivate their attitudes to 'the human condition'. Secondly, this approach includes providing the students with an opportunity to meet the person in his/her own home, and not in a hospital, thereby reducing, or even reversing, the hierarchic aspects of the relationship between doctor and patient. Finally, the approach is intended to encourage critical reflections on the traditionally stern distribution of authority between doctors and nurses in clinical practice. This intention is sought achieved by appointing a nurse, rather than a physician, as the medical student's primary contact person and facilitator in regard to the short, written reflections.

This trajectory is not completely unique among universities in Denmark, yet no other Danish university has introduced a *mandatory* course in *narrative medicine*. The Universities of Aarhus and Copenhagen have *elective* courses in medical humanities, specifically focusing on ethical di-lemmas of medical treatment represented in literature and film, and placed near the end of the education. By making the course in narrative medicine at SDU mandatory in undergraduate medical education, a narrative competence becomes integrated as part and parcel of the education. Yet, it might be preferable if the students at SDU were able to select an additional course in narrative medicine during their postgraduate years, since knowledge and competences are typically built up through repeated training over time. Further, students may be more receptive to fictional accounts of illness once they have experienced authentic accounts in the clinic during their undergraduate education. Even the three, relatively long meetings with a chronically ill person may change their idea about how people live with their illness.

The mandatory, six-week course in narrative medicine consists of lectures for 150 medical students in an auditorium interspersed with two sessions of 4 simultaneous seminars for approximately 40 students. In the four lectures, scholars from literature and medicine teach theoretical issues of principles and methods in narrative medicine, such as, how to define and measure physician empathy, and the importance of understanding patients' life stories. In the two seminars, scholars from literature teach close reading of short literary texts followed by spontaneous writing.¹

The hypothesis of transferability of skills

The approach to narrative medicine at University of Southern Denmark is committed to a hypothesis, expressed by MD and Associate Professor in English literature Rishi Goyal as follows; *"the ability to read a book, a poem or a short story is similar to the act of listening well, and by training in the one, reading and writing, you can improve the other, listening and acting"* (Rasmussen & Goyal, 2017). Goyal is trained in the Narrative Medicine program, and he now teaches medical topics at the Department for Comparative Literature at Columbia. He was appointed Adjunct Associate Professor of Narrative Medicine at University of Southern Denmark in 2018. Rita Charon, the Executive Director of the program in Narrative Medicine, supports the idea of transferability of skills, noting: *"Students trained in close reading have been known to apply it to diverse sorts of texts and thus to discover things they would not otherwise have noticed [...] If close reading helps persons to discover things they would*

not otherwise have noticed, perhaps it might help clinicians to notice what their patients try to tell them”(Charon et al., 2017, 164-165).

Close Reading

The principles, methods, and pedagogical practice that direct the new Danish courses in narrative medicine are very much inspired by Columbia’s model developed since 2000 (Charon et al., 2017). The medical students are introduced to the method and practice of close reading and to creative writing in the shadow of these readings. Close reading, as understood by Rita Charon, is a systematic and attentive reading of a given literary text in every detail so that the spoken as well as the unspoken in a narrative is elicited (ibid., 157-179). By ‘systematic’ is meant a relatively objective approach that guides a comprehensive analysis of the textual details, which then leads into a subjective interpretation. This kind of slow and almost absorbing readings of literature, which typically result in unpredictable and perhaps ambiguous conclusions, is foreign to most of the medical curriculum. Medical students read a lot of biomedical literature in order to memorize the important information and learn how to reduce complexities to unambiguous results. Close reading is almost the exact opposite of this as it contrasts a positivist approach with a hermeneutic one. One needs to pay attention to every sentence and every word in the, often short, fictional texts because an understanding of a complex narrative is reached through the totality of details, and these details are likewise understood through the text as a whole (Brockmeier & Meretoja, 2014). Close reading often invites the students to reflect upon their recognition of patients’ stories, either through what professor of literature Rita Felski calls “*self-intensification*” or “*self-extension*” (Felski, 2008). In the first case the student mirrors herself in the character, in the second the student finds a universal relation to the foreign experience. By these kinds of recognition, the students access vital human knowledge of the self and others through close reading.

The students mostly read short, diverse texts of Danish literature, which all thematize illness and meetings with the health care system, collected in an anthology, *Ill literature [Syg litteratur]* (Mai & Simonsen, 2017). The reason why all texts thematize illness is purely pragmatic. One does not need to read a text about illness in order to practice close reading. One could even argue that reading texts about illness disturbs the medical students’ attention to the fully human condition of life, love, friendship, fear, loss, and death. Yet, literature and art in general is

so foreign to the (bio)medical curriculum that reading texts without any medical themes might cause disinterest.

The training in attention to, and understanding of, how details and whole are related as well as recognition of self and other, is – according to the hypothesis in narrative medicine – similar to the act of listening well to a patient account in the clinical practice. The clinician needs to revise her total understanding of an illness narrative, if new information is given by the patient, and this information is always founded in a larger, sometimes hidden, narrative, which can often be categorized as a diagnosis. Likewise, the suffering and fear of the patient should be recognized as a foreign, though not completely unintelligible, experience.

Creative Writing

Adding creative writing as an imaginative discovery to the close reading of a fictional text, has been described, by writer of fiction and teacher in narrative medicine at Columbia, Nellie Hermann, to increase the likelihood that a medical student understands herself and others as vulnerable individuals and as participants in a trustworthy group rather than a competitive class (Hermann, 2017, 211-232). Students are requested to write creatively to a prompt, which must be open in its formulation, so that everyone can find their own imaginative path when answering it. Students are always requested to write ‘in the shadow of’ the reading, which means that the exercise takes its point of departure in the close reading of a text. Afterwards, the students are requested to share their writing with each other in pairs, and then – if anyone has the courage – to share it with the entire group of students. By writing a text on their own, even if this only lasts for five to seven minutes, each student is confronted by her own thoughts, feelings, and imagination. This spontaneous act of writing is often experienced as a process of deeper self-understanding and, perhaps, improved empathy with fellow students. By sharing the written text with others, the texts often grow in importance to the individual student and the other students gets access to something vulnerable and personal in their fellow students, which is rarely accessible in a classroom. Through these intimately related rigorous methods and pedagogical practices, narrative medicine can potentially foster a narrative competence, including narrative empathy and selfcare, in medical and health care students.

Declining empathy during medical education years?

In 2011 Melanie Neumann and her colleagues published the systematic review “Empathy Decline and Its Reasons”, which finds that the level of empathy among medical students declines throughout medical education (Neumann et al., 2011). The authors reviewed studies investigating changes in trainees’ empathy levels and sought to pinpoint possible reasons for those changes during medical school and residency. The decline of empathy in the present health care system is assumed to begin in the medical education when the medical students turn their minds to memorizing anatomy or biochemistry, or when then, learn how to dissect a corpse, and thereby start to translate their knowledge and competences into a detached, scientific medicine. Ill persons become patients, listening to stories becomes listening for anamneses, the richness of psychological experience is reduced to psychiatric diagnosis and medical treatment.

As a contrast, the ideal of narrative empathy in health care can be defined as a *“full, non-judgmental, generative reception [of an illness story] that is informed by all aspects of what a teller tells – in words, silences, gestures, position, mood, prior utterances. The attentive listener absorbs what is given and can then return to the teller a representation of what was heard”* (Charon, 2017, 157). Professionalism might be understood as: Paying attention to the patient’s chief complaint as well as the person’s chief concern (Schleifer & Vannatta, 2013). A Danish professor of medicine has defined the ideal as *“the skill to shift between on the one hand distancing analysis of symptoms and clinical signs and on the other hand an empathetic recognition of ill persons emotions, idiosyncrasies and decision making”* (Hrobjartsson et al., 2013).

The concept of empathy is, of course, debated in and across academic disciplines, especially in medicine and the medical humanities.² Literary scholar Suzanne Keen works with a notion of narrative empathy which she defines as, *“... the sharing of feeling and perspective-taking induced by reading, viewing, hearing, or imagining narratives of another’s situation and condition.”* (Keen, 2013, [2]).

In Neumann et al.’s study, empathy is considered a key element of patient-physician communication that positively influences patients’ health. The study treats empathy as a feature, which is learned in childhood and – unintendedly – unlearned during medical education. Vice versa, empathy can be (re)learned in higher education through reading of for example literature as argued most prominently by the philosopher Martha Nussbaum (Nussbaum, 1997)³. For Nussbaum, reading great literature especially from foreign cultures and historical epochs sti-

mulates a ‘narrative imagination’ of basic human conditions, comparable to Rita Felski’s concept of recognition as ‘self-extension’.

One proposed solution to counter the suggested empathy decline in medical education, is introducing courses, which train students in narrative virtues common in the humanities, i.e. close reading of literature, film, art etc. and creative writing. Teaching courses in narrative medicine – or medical humanities – has been shown to correlate with increases in their empathy levels; improved capacities for reflection; better communication skills and ability to create a committed partnership, or affiliation, with their patients (Charon et al., 2016). Improvements in these abilities and skills have in turn been suggested to result in more attentive and empathic clinical care (ibid.). However, only very few studies have investigated the *long term effects* and *impacts on patients’ health and well-being*, as a result of teaching such courses to medical students (Ousager & Johannessen, 2010).

Important questions

One explicit ambition with the initiative ‘Human First’ at University of Southern Denmark, is to prevent the decline in empathy and the narrowing of professional focus among medical students during their education – and instead sustain, and maybe even increase, their empathy levels and understanding of the complexity of human narratives. With such an ambition, certain questions become of great importance: How can one measure *if* a mandatory course in narrative medicine contributes to students understanding of the narrative aspects of medical care? What are the pros and cons of qualitative and/or quantitative methods, and can we imagine a longitudinal measuring of increase in empathy correlated with courses in narrative medicine? Another important question is whether improved empathy should be the only parameter of success for courses in narrative medicine or medical humanities. Perhaps empathy should simply be one parameter among others like curiosity, creativity, wisdom, and self-care, which are also very difficult to measure – if not irreducible to measurement.

Literature review

To investigate the current state of knowledge on the effects of teaching close reading and doing writing exercises with students of health care, we conducted a

search and review of the academic literature. In the following, the procedure and results are presented in narrative form.

Aim and scope

The aim was to identify literature describing and investigating what possible impact teaching close *reading* and doing *writing exercises* with *health care students* might have on the students. Our re-search question thus read:

Which effects result from teaching students of health care close reading of literature followed by writing exercises?

Method

To identify key terms relating to the research question, five articles, which we regarded as central to our aim (Shannon L Arntfield et al., 2013b; Devlin et al., 2015; Miller et al., 2014; Pfeiffer et al., 2016), were carefully reviewed. A list of key terms, collected during the reviewing of the five articles, was discussed, shortened and reviewed until it contained only terms which we both agreed were key terms for this review. These terms became the foundation for our initial choice of search terms. The discussion also made it clear, that the original research question needed more precision, if it were to guide the review process properly. Therefore, we developed the following ex-tened research question:

Which (measurable, possibly positive, long or short term) effects (particularly regarding the students' development professionally, personally and in terms of abilities to communicate, collaborate, be empathic, compassionate, and patient-centred, aware of ethical concerns, shift perspectives, be attentive, think critically, and reflect) result from teaching students of health care close reading of literature (e.g. fiction, biographies, pathographies, etc.) followed by writing exercises (e.g. creative writing)?

Guided by the extended research question, we were able to create a comprehensive list of search terms and combinations using the PICO-framework⁴ – a scheme for clarifying the population, intervention, comparison, and outcome of interest (Scells et al., 2017). The following is an abbreviated presentation of our PICO:

- **Population:** Students of any health care field (e.g. medicine, nursing, etc.) in any part of the world.

- **Intervention:** Education (e.g. a course or workshop) in ‘medical humanities’, ‘narrative medicine’, or any other teaching described which applies literature reading and writing exercises.
- **Comparison:** Absence of the education described as the intervention.
- **Outcome:** changes in empathic abilities, communication skills, collaboration skills, perspective taking, critical and creative thinking, social awareness etc.

Unfortunately, using the comprehensive list of search terms in the database searches, returned far more entries than would be possible to read through within the timeframe available. The review thus had to be greatly restricted in scope which is a clear drawback on the side of evidential strength (compared to e.g. a full systematic review). Conversely, the review contributes both through its *methodological example* (which others may build on and expand upon), and through the appraisal and discussion of the studies included, which give a provisional account, of the current state of knowledge on the effects of teaching close reading and doing writing exercises with students of health care.

Search process

We searched five databases: ERIC, PubMed, Embase, Medline, and Scopus. Studies in *any language* would be included as long as an English abstract was available. We searched for studies with *publication dates* from the earliest available date in each database and up until December 31st 2017. The search was limited to include only *peer reviewed* publications to ensure scientific rigour.

After conducting a number of search trials to evaluate the size and scope of the returns, two combinations of search terms were selected: “medical humanities AND student*”, and “narrative medicine AND student*”, with the “*” indicating the use of truncated versions of the term ‘student’. These combinations were deemed sufficiently *broad* to capture a large number of studies of relevance to this review, and still sufficiently limited to make the review task possible within our time frame. In addition to this systematic, albeit *limited*, search, we included any relevant studies from other reviews on similar topics, and also did hand searches of the literature lists of our five basis-documents.

Selection criteria

Inclusion criteria:

- Published (and not retracted)
- Peer-reviewed
- Empirical studies (of any design type)
- Population is health care students
- Students have taken at least one course in “narrative medicine”, or a medical humanities course described as including close reading and writing exercises.
- Some *specific outcome* was examined, such as e.g. changes in empathy scores, improvements in collaboration, or improved critical thinking.

Exclusion criteria:

- Languages other than English, Danish, Swedish or Norwegian
- Studies with only preliminary results (e.g. conference abstract)
- Reviews

Relevant reviews were hand searched for additional studies.

Selection process

After limiting our scope, searches in the five databases yielded a total of 832 titles. All references were imported into Endnote, and after duplicate removal (including one translated article), a total of 286 titles remained. The first sorting, which was done at the abstract level, excluded a total of 255 titles. Of the 31 articles selected for full-text review, 10 studies were found eligible for the review – including one of our basis-documents (Shannon L Arntfield et al., 2013b). Through our initial searches, and via our basis-documents, we identified three literature reviews relevant for our aim (Barber & Moreno-Leguizamon, 2017; Batt-Rawden et al., 2013; Wieżel et al., 2017), which we also checked for eligible studies. This yielded an additional seven studies (DasGupta & Charon, 2004; Lancaster et al., 2002; Muszkat et al., 2010; Rosenthal et al., 2011; Johanna Shapiro et al., 2004; Johanna Shapiro et al., 2006; Tsai & Ho, 2012). In total, we ended up with 17 studies to include in our review. The full process is depicted in the flow chart below (figure 1).

Flowchart of the study selection process

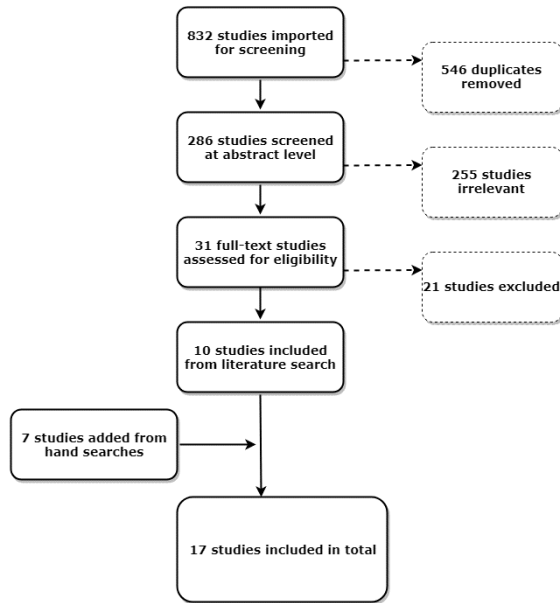


Figure 1:

Results

Among the 17 included studies, 15 were in the field of medicine, one was in pharmacy, and one was health care broadly. Ten of the courses were mandatory – either specifically, or in the sense that students had to choose among various medical humanities courses offered. Three of the studies included first year students, two targeted students in their second year, seven studies were among third year students, and three studies included fourth year students. Two of the studies did not specify student year. An overview of the results can be found in table 1, presenting included studies and their characteristics.

Reference	Population (field, participants, year)	Course type	Outcome measures (self-reported / other: ●)
Arntfield et al. (2013)	Medicine, n=12, third year	Elective	Self-reported

Chretien et al. (2015)	Medicine, n=47, third year	Mandatory	Self-reported
Cunningham et al. (2017)	Medicine, n=97, first year	Mandatory	Self-reported
DasGupta & Charon (2004)	Medicine, n=11, second year	Elective	Self-reported
Garrison et al. (2011)	Medicine, n=46, third year	Mandatory	Self-reported
Graham et al. (2016)	Medicine, n=68, pre-clinical (25 in intervention group)	Elective	<ul style="list-style-type: none"> • Jefferson Scale of Empathy Student Version (JSE-S)
Lancaster et al. (2002)	Medicine, n=5, fourth year	Elective	Self-reported
McDonald et al. (2015)	Medicine, n=6, third year	Elective	Self-reported
Muszkat et al. (2010)	Medicine, n=44, fourth year	Mandatory	Self-reported
Patterson et al. (2016)	Medicine, n=141, first year	Mandatory	Self-reported
Rosenthal et al. (2011)	Medicine, n=209, third year	Mandatory	<ul style="list-style-type: none"> • Jefferson Scale of Physician Empathy Medical Student Version (JSPE-MS)
Shapiro et al. (2004)	Medicine, n=16, first year	Elective	<ul style="list-style-type: none"> • Balanced Emotional Empathy Scale (BEES) • Empathy Construct Rating Scale (ECRS) • Focus group interviews

Shapiro et al. (2005)	Medicine, n=82, third year	Mandatory	Self-reported
Shapiro et al. (2006)	Medicine, n=92, second year	Mandatory	<ul style="list-style-type: none"> • Theme frequency • Linguistic Inquiry and Word Count (LIWC) • Objective Structured Clinical Examination - Standardized Patient (OSCE-SR) Ratings.
Shapiro et al. (2016)	Medicine, n=595, third year	Mandatory	<ul style="list-style-type: none"> • Qualitative thematic analysis of students' creative projects.
Tsai & Ho (2012)	Health care, n=54, N/A (15 in intervention group)	Elective	<ul style="list-style-type: none"> • Objective Structured Clinical Examination (OSCE) Scores
Zimmermann (2013)	Pharmacy, n=52, fourth year	Mandatory	Self-reported

Table 1: Included studies

Review of included studies

Eleven of the studies included in this review rely on outcomes-based either on selfassessment by the participating students or on a thematic analysis of students' written material (Shannon L. Arntfield et al., 2013a; Chretien et al., 2015; Cunningham et al., 2017; DasGupta & Charon, 2004; Garrison et al., 2011; Lancaster et al., 2002; McDonald et al., 2015; Muszkat et al., 2010; Patterson et al., 2016; Johanna Shapiro et al., 2005; Zimmermann, 2013). The studies' analyses suggest that these healthcare students (with a majority of medical students) receive the narrative

medicine courses well and find that they develop both personally and professionally. Examples of students' developments during a course include increased capacity for perspective-taking and improved ability to empathize, communicate and reflect critically.

These studies, however, have certain limitations, since selfassessments may suffer from reporting bias, and the thematic analyses of texts with no precondition comparison are not strong indicators that the courses play any causal role for their personal or professional development – even if they do. Thus, in the following, a more thorough presentation is given of the six studies included in this review, which rely either on validated measuring scales or other outcomes not requiring students to selfevaluate.

Graham et al. (2016) designed a study to assess whether medical humanities (MH) course-work correlated with superior empathy outcomes, as measured on the Jefferson Scale of Empathy Student Version (JSE-S). Measurements were taken before the MH course began, and after it was completed. The results showed a statistically significant difference between the group (n=25) that participated in a medical humanities course and the group that didn't (n=43). However, the researchers chose to differentiate between those whose scores declined or were unchanged and those whose scores improved. Had they shown the difference between decline, unchanged, and improved scores as three different outcome groups, it would have been interesting to see if the results would show similar statistically significant differences between the two groups. Also, since the group taking the MH course had elected to do so, it cannot be determined whether the increase in empathy scores was a result of the MH course, or simply because students whose empathy scores would increase were more likely to enrol in a MH course. Graham et al. acknowledge this possible bias, as well as the uncertainties of a small sample size. Nevertheless, their study is an important step towards larger and more robust studies of empathy in medical students and how it relates to taking medical humanities courses.

Rosenthal et al. (2011) did a before-and-after study measuring empathy scores of two consecutive classes of medical school students (n=209). During their clerkship, the students participated in an added, mandatory "Humanism and Professionalism" component. This educational intervention consisted of group discussions based on reflective articles and fiction as well as students' own writing posted on a blog after each clerkship. Students' empathy scores were measured using the Jefferson Scale of Physician Empathy Medical Student Version (JSPE-MS), before

beginning clerkship and at the end of the clerkship year. No significant change in empathy occurred in either of the classes. In light of previous studies (Hojat et al., 2009; Newton et al., 2008) having shown trends of declining empathy levels among students in their third year of medical school, the authors interpreted this result positively, suggesting that the educational intervention had preserved empathy in these classes. Due to the lack of a directly comparable class, it cannot reliably be concluded that empathy was *preserved* as it could have remained unchanged regardless of the intervention. The study can, however, serve as inspiration for a fuller investigation of such courses' possible effects.

Empathy is a complex phenomenon, and Shapiro, Morrison and Boker (2004) decided to measure it by use of two scales corresponding to the distinction between **affective** and *cognitive empathy*. Medical students in their first year (n=16) enrolled in an elective course on medicine and literature, where they would discuss short stories during eight small-group sessions. Pre- and post-intervention measures were collected for the two empathy scales, and additionally for an attitudes-towards-the-humanities scale, as well as in qualitative group interviews. Results showed a significant *increase* in *affective empathy* scores (measured on the Balanced Emotional Empathy Scale, BEES (Mehrabian, 1996)), but *no significant changes* in *cognitive empathy* scores (measured on the Empathy Construct Rating Scale, ECRS (Monica, 1981)). The qualitative analysis of the group interviews suggested students had gained a better understanding of the patients' perspective, and how literature can help students cope with medical school. It also found that students' perceptions of 'empathy' had remained unchanged.

Shapiro, Rucker, Boker and Lie (2006) report on a comparative study of 92 pre-clinical medical students divided into two demographically matched groups, trained either in point-of-view (POV) writing (n=47) or in clinical reasoning (CR). Group differences were measured by theme frequency (comparing numbers for the presence/absence of 11 themes); by Linguistic Inquiry and Word Count (LIWC) (Pennebaker et al., 2001); and by Standardized Patient (SR) ratings from an Objective Structured Clinical Examination (OSCE). Thematic frequency analysis showed statistically significant ($p>0.1$) results such as the POV group scoring higher for the themes "Point of view", "Empathy for doctor" and »Feelings of doctor" – and conversely the CR group scoring higher for "Blame of patient" and "Prevention" themes. The LIWC analysis found more expression of feelings (and more feelings of anger) in the POV group, where students also made more references to spiritual and religious aspects. The CR group wrote longer sentences on average, used more technical words as well as sports analogies. Statistical analysis of the

SR ratings showed no significant difference between the two groups, meaning that those acting as patients at the OSCE were equally satisfied with both groups. The authors consider that the SR result may mean either that the *“empathic skills developed through writing may not translate into behaviour”* (p. 103), or that the translation is case-specific, or that training students in the preclinical phase means the empathic skills developed were misinterpreted as unprofessional or are perhaps just not appreciated as much by actor patients as they would be by actual patients in a clinical setting.

In a more recent paper, Shapiro, Ortiz, Ree and Sarwar (2016) qualitatively analysed the thematic and emotionbased dimensions in creative projects from students in their third-year paediatrics clerkship, during which they were trained in reflective writing. The study included 520 projects (representing 595 students) collected during a 10-year period. The authors found that students' projects suggest a patient-centred and empathic approach and that the *emotional* connection with patients and families was particularly valued by students. This study is an example of, how one can employ a humanistic approach in measuring outcomes, without resorting to selfevaluations. However, it is still possible that students were aware of how they represented themselves in their projects, which draws the conclusions closer to direct selfevaluations. The size (595 students) and duration (10-year period) of this study's material is a clear strength of this study, lending more weight to the authors' conclusion that *“students can use artistic media and narrative to insightfully interrogate their clinical experiences”* (p. 9).

Tsai and Ho (2012) aimed to investigate whether narrative medicine training could improve health care students' clinical performance. To measure this, they used scores of the Objective Structured Clinical Examination (OSCE) as a means of testing whether effects could be found at the behavioural level judged by others, rather than selfassessment. A large group of 116 medical interns were eligible for the study and were randomized to either being invited to taking a narrative medicine course, or not being invited to do so but remain in the study as controls. Despite the initially large group, only 15 students took part in the course and a sample of 39 students participated as controls. Tsai and Ho were able to match the two groups by age, gender, and academic performance, and together with the randomization, this is a clear strength for this study. They found statistically significant differences between OSCE-scores on the examinations' two communication stations, with the narrative medicine group scoring higher than controls, but no significant difference between the two groups' total scores for all 12 station tests. Given the small sample size and singular location, extrapolation of the results is

not warranted. However, since OSCEs are widely used in health care educations around the world, repeating this study in various locations with larger samples might be a feasible path for obtaining results that are more straightforward to compare and compile.

Summary of findings

The studies included in this review all tend to endorse medical humanities courses based on their findings. However, as the researchers themselves point out, many of the studies have risks of bias as well as other limitations. The quantitative studies often lack in size to offer more robust findings, and many qualitative studies are based on course evaluations or student writings, which may offer valuable insights into student perspectives and preferences but cannot be used to establish any connection to improvements in clinical encounters with patients (even if they exist).

Discussion and limitations

Our literature review did not include grey literature, which may be a significant drawback as there is a chance of publication bias, since those investigating possible effects are often themselves invested in the field of medical humanities and may be teaching also. Further, although, the search and selection process was systematic, it had to be limited in scope, meaning that many more studies on educational interventions in medical humanities may exist, and together point to a different conclusion. There may also be publication bias within this field, since effect studies, so far, are mostly conducted at singular teaching facilities. Future research should aim for larger studies with multiple outcome measures – both quantitative and qualitative – and ideally, involve researchers from several health educations in different locations.

This review restricted its target population to students of health care, but it should be noted, that a number of studies can be found, which target the post-graduate group (i.e. health care professionals including medical doctors, nurses, etc.), and which have found beneficial effects of training in narrative competencies.

Finally, we wish to point out the very foundational challenge of measuring humanistic teaching interventions, and the concerns of some scholars who regard these measuring at-tempts as a mistaken application of natural science ideals and

methods to an incompatible field – the humanities. In the next and final section, we will provide some perspectives on this discussion.

Perspectives on measuring effects of medical humanities courses

In a literature review (Ousager & Johannessen, 2010) by two scholars from the University of Southern Denmark investigating “*the extent to which the literature on humanities in under-graduate medical education seeks to provide evidence of a long-term impact of this integration of humanities in undergraduate medical education*” (p. 988), the authors found that only 9 papers, out of the 245 eligible for their review, were concerned with this issue. Researching the effects of curricular interventions generally poses serious methodological challenges due to, among other things, the large number of possible confounders. Investigating humanities courses in medical education may pose even imminent challenges since learning outcomes are usually not just about knowledge acquisition, technical applicability capacity. Instead, humanities courses often attempt to develop specific *abilities* (e.g. perspective-taking, reflection, critical self-assessment, etc.) and *valuable characters traits* (e.g. empathy, attention, curiosity, etc.) that are expected to support medical students in becoming ‘better doctors’.

As exemplified above, the outcomes of humanities courses, and not least the theorized mechanisms for how they can contribute to making medical students better doctors, stem from a tradition which commonly seeks to understand a concept or phenomenon by expanding it and unfolding all its nuances rather than reduce it to simpler factors and understand it through its separate parts and their functions. This reflects, an often-noted difference between the biomedical and the humanistic approach to health care, and some will even argue that this divide shows us precisely why insisting on measuring outcomes and effects of teaching humanities courses to medical students is a futile endeavour⁵. But there is no reason why the two approaches cannot coexist within medical education. Associate Professor in medical humanities, Catherine Belling, wrote a critical comment to the aforementioned literature review and made a case for “*the importance of attention to linguistic irreducibility in the multiple texts of medicine*” (Belling, 2010, 939). For Belling, the “*humanities offer precisely what is missing in both blunt reductionism and fuzzy holism: incisive attention to specificity*” (Ibid, 940). If teaching humanities

courses to medical students do have an overall positive impact on them as future doctors, this might be assessed via both rich and nuanced descriptions (as in the humanist tradition), as well as via reductionist outcome measures (as in the scientific tradition). The hard task is to pick the 'right' outcome measures to investigate, which is a matter of importance, feasibility of study, and effect size.

A course in narrative medicine like the one at University of Southern Denmark might have a short-term effect on students' 'narrative competence' to understand and recognize illness stories in the clinical practice, yet, a stronger effect might result if more plenum lectures were changed into small seminars, or if the mandatory course were followed up by an elective course later in their education.

Having healthier, more content patients may be the most important outcome, but surrogate outcome measures, such as higher levels of empathy (Graham et al., 2016) or higher OSCE-scores in communication (Tsai & Ho, 2012), may be needed to make the study feasible. Furthermore, health and happiness are in themselves subjective experiences, which can be evaluated in different ways depending on what is emphasized. Consider the following example: Although a long life is generally desired, a long life in pain may not be. And although physical pain is generally avoided, a life in physical pain may nevertheless be worth living for the individual who feels highly rewarded by close relations or a fulfilling vocation.

References

- Abdel-Halim, R.E., & Alkattan, K.M. (2012). Introducing medical humanities in the medical curriculum in Saudi Arabia: A pedagogical experiment. *Urology annals*, 4, 73-79. <https://doi.org/10.4103/0974-7796.95549>
- Acuna, L.E. (2003). Teaching Humanities at the National University of la Plata, Argentina. *Academic medicine : journal of the Association of American Medical Colleges*, 78, 1024-1027. <https://doi.org/10.1097/00001888-200310000-00017>
- Arntfield, S.L., Slesar, K., Dickson, J., & Charon, R. (2013a). Narrative medicine as a means of training medical students toward residency competencies. *Patient education and counseling*, 91, 280-286. <https://doi.org/10.1016/j.pec.2013.01.014>
- Arntfield, S.L., Slesar, K., Dickson, J., & Charon, R. (2013b). Narrative medicine as a means of training medical students toward residency competencies. *Patient Education and Counseling*, 91, 280-286. <https://doi.org/10.1016/j.pec.2013.01.014>
- Barber, S., & Moreno-Leguizamon, C.J. (2017). Can narrative medicine education contribute to the delivery of compassionate care? A review of the literature. *Medical Humanities*, 43, 199-203. <https://doi.org/10.1136/medhum-2017-011242>

- Batt-Rawden, S.A., Chisolm, M.S., Anton, B., & Flickinger, T.E. (2013). Teaching empathy to medical students: an updated, systematic review. *Academic Medicine*, 88, 1171-1177. <https://doi.org/10.1097/ACM.0b013e318299f3e3>
- Belling, C. (2010). Commentary: Sharper Instruments: On Defending the Humanities in Undergraduate Medical Education. *Academic medicine : journal of the Association of American Medical Colleges*, 85, 938-940. <https://doi.org/10.1097/ACM.0b013e3181dc1820>
- Brockmeier, J., & Meretoja, H. (2014). Understanding narrative hermeneutics. *Storyworlds: A journal of narrative studies*, 6, 1-27. <https://doi.org/10.5250/storyworlds.6.2.0001>
- Charon, R. (2001). Narrative medicine: a model for empathy, reflection, profession, and trust. *Jama*, 286, 1897-1902. <https://doi.org/10.1001/jama.286.15.1897>
- Charon, R. (2017). Close reading: The signature method of narrative medicine. *The principles and practice of narrative medicine*, 157-179. <https://doi.org/10.1093/med/9780199360192.003.0008>
- Charon, R., DasGupta, S., Hermann, N., Irvine, C., Marcus, E.R., Colón, E.R., et al. (2017). *The Principles and Practice of Narrative Medicine*. US: Oxford University Press. <https://doi.org/10.1093/med/9780199360192.001.0001>
- Charon, R., Hermann, N., & Devlin, M.J. (2016). Close Reading and Creative Writing in Clinical Education: Teaching Attention, Representation, and Affiliation. *Academic Medicine*, 91, 345-350. <https://doi.org/10.1097/ACM.0000000000000827>
- Chretien, K.C., Swenson, R., Yoon, B., Julian, R., Keenan, J., Croffoot, J., et al. (2015). Tell Me Your Story: A Pilot Narrative Medicine Curriculum During the Medicine Clerkship. *Journal of General Internal Medicine*, 30, 1025-1028. <https://doi.org/10.1007/s11606-015-3211-z>
- Chun, K.H., & Lee, Y.H. (2016). Improvement of debate competence: an outcome of an introductory course for medical humanities. *Korean journal of medical education*, 28, 87-93. <https://doi.org/10.3946/kjme.2016.13>
- Cunningham, H., Taylor, D., Desai, U.A., Quiah, S.C., Kaplan, B., Fei, L., et al. (2017). Looking Back to Move Forward: First-Year Medical Students' Meta-Reflections on their Narrative Portfolio Writings. *Academic medicine : journal of the Association of American Medical Colleges*. <https://doi.org/10.1097/ACM.00000000000002102>
- DasGupta, S., & Charon, R. (2004). Personal illness narratives: using reflective writing to teach empathy. *Academic medicine*, 79, 351-356. <https://doi.org/10.1097/00001888-200404000-00013>
- Devlin, M.J., Richards, B.F., Cunningham, H., Desai, U., Lewis, O., Mutnick, A., et al. (2015). »Where Does the Circle End?«: Representation as a Critical Aspect of Reflection in Teaching Social and Behavioral Sciences in Medicine. *Academic Psychiatry*, 39, 669-677. <https://doi.org/10.1007/s40596-014-0222-8>
- Elcin, M., Odabasi, O., Ward, K., Turan, S., Akyuz, C., & Sayek, I. (2006). The first medical humanities programme in Turkey. *Medical Education*, 40, 278-282. <https://doi.org/10.1111/j.1365-2929.2006.02390.x>
- Felski, R. (2008). Uses of Literature. *Malden: Blackwell*, 23-50. <https://doi.org/10.1002/9781444302790>
- Garrison, D., Lyness, J.M., Frank, J.B., & Epstein, R.M. (2011). Qualitative analysis of medical student impressions of a narrative exercise in the third-year psychiatry clerkship. *Academic medicine : journal of the Association of American Medical Colleges*, 86, 85-89. <https://doi.org/10.1097/ACM.0b013e3181ff7a63>

- Graham, J., Benson, L.M., Swanson, J., Potyk, D., Daratha, K., & Roberts, K. (2016). Medical Humanities Coursework Is Associated with Greater Measured Empathy in Medical Students. *The American journal of medicine*, 129, 1334-1337. <https://doi.org/10.1016/j.amjmed.2016.08.005>
- Gupta, S., & Singh, S. (2011). Confluence: Understanding medical humanities through street theatre. *Medical Humanities*, 37, 127-128. <https://doi.org/10.1136/jmh.2010.006973>
- Hermann, N. (2017). Creativity: What, Why, and Where? *The Principles and Practice of Narrative Medicine*: Oxford University Press. <https://doi.org/10.1093/med/9780199360192.003.0010>
- Hojat, M. (2016). *Empathy in Health Professions Education and Patient Care*. Cham: Springer International Publishing. <https://doi.org/10.1007/978-3-319-27625-0>
- Hojat, M., Vergare, M.J., Maxwell, K., Brainard, G., Herrine, S.K., Isenberg, G.A., et al. (2009). The Devil is in the Third Year: A Longitudinal Study of Erosion of Empathy in Medical School. *Academic Medicine*, 84, 1182-1191. <https://doi.org/10.1097/ACM.0b013e3181b17e55>
- Hrobjartsson, A., Skydsgaard, M., Wielandt, H., & Graugaard, C. (2013). Lægekunst. *BIBLIOTEK FOR LÆGER*, 205, 332-333.
- Hunter, K.M. (1991). *Doctors' Stories: The Narrative Structure of Medical Knowledge*: Princeton University Press.
- Jurecic, A. (2011). *Empathy and the Critic*. *College English*, 74, 10-27.
- Keen, S. (2007). *Empathy and the novel*. New York: Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780195175769.001.0001>
- Keen, S. (2013). Narrative Empathy. In P. Hühn, J. Pier, W. Schmid, & J. Schönert (Eds.), *The Living Handbook of Narratology*. Hamburg: Hamburg University Press.
- Lancaster, T., Hart, R., & Gardner, S. (2002). Literature and medicine: evaluating a special study module using the nominal group technique. *Medical Education*, 36, 1071-1076. <https://doi.org/10.1046/j.1365-2923.2002.01325.x>
- Mai, A.-M., & Simonsen, P. (2017). *Syg litteratur*. Kbh: Munksgaard.
- McDonald, P., Ashton, K., Barratt, R., Doyle, S., Imeson, D., Meir, A., et al. (2015). Clinical realism: A new literary genre and a potential tool for encouraging empathy in medical students Approaches to teaching and learning the Many Meanings of 'Quality' in *Healthcare: Interdisciplinary Perspectives*. *BMC Medical Education*, 15. <https://doi.org/10.1186/s12909-015-0372-8>
- Mehrabian, A. (1996). Manual for the balanced emotional empathy scale (BEES). *Available from Albert Mehrabian*, 1130.
- Miller, E., Balmer, D., Hermann, N., Graham, G., & Charon, R. (2014). Sounding narrative medicine: studying students' professional identity development at Columbia University College of Physicians and Surgeons. *Academic medicine : journal of the Association of American Medical Colleges*, 89, 335-342. <https://doi.org/10.1097/ACM.0000000000000098>
- Monica, E.L.L. (1981). Construct validity of an empathy instrument. *Research in nursing & health*, 4, 389-400. <https://doi.org/10.1002/nur.4770040406>
- Muszkat, M., Yehuda, A.B., Moses, S., & Naparstek, Y. (2010). Teaching empathy through poetry: a clinically based model. *Medical education*, 44, 503-503. <https://doi.org/10.1111/j.1365-2923.2010.03673.x>
- Neumann, M., Edelhäuser, F., Tauschel, D., Fischer, M.R., Wirtz, M., Woopen, C., et al. (2011). Empathy decline and its reasons: a systematic review of studies with medical students and residents. *Academic Medicine*, 86, 996-1009. <https://doi.org/10.1097/ACM.0b013e318221e615>

- Newton, B.W., Barber, L., Clardy, J., Cleveland, E., & O'Sullivan, P. (2008). Is There Hardening of the Heart During Medical School? *Academic Medicine*, 83, 244-249. <https://doi.org/10.1097/ACM.0b013e3181637837>
- Nussbaum, M.C. (1997). *Cultivating Humanity: A Classical Defense of Reform in Liberal Education*. Harvard. <https://doi.org/10.2307/j.ctvjghth8>
- Ousager, J., & Johannessen, H. (2010). Humanities in undergraduate medical education: a literature review. *Academic Medicine*, 85, 988-998. <https://doi.org/10.1097/ACM.0b013e3181dd226b>
- Patterson, A., Sharek, D., Hennessy, M., Phillips, M., & Schofield, S. (2016). Medical humanities: A closer look at learning. *Medical Humanities*, 42, 115-120. <https://doi.org/10.1136/medhum-2015-010834>
- Pennebaker, J.W., Francis, M.E., & Booth, R.J. (2001). *Linguistic inquiry and word count: LIWC 2001*. Mahway: Lawrence Erlbaum Associates, 71, 2001.
- Pfeiffer, S., Chen, Y., & Tsai, D. (2016). Progress integrating medical humanities into medical education: a global overview. *Current Opinion in Psychiatry*, 29, 298-301. <https://doi.org/10.1097/YCO.0000000000000265>
- Rasmussen, A.J., & Goyal, R. (2017). What Does it Mean to Listen, and How Can it Be Learned? In B.G.b.M. Humanities (Ed.). *British Medical Journal: ACI Information Group*.
- Rosenthal, S., Howard, B., Schluskel, Y.R., Herrigel, D., Smolarz, B.G., Gable, B., et al. (2011). Humanism at heart: Preserving empathy in third-year medical students. *Academic Medicine*, 86, 350-358. <https://doi.org/10.1097/ACM.0b013e318209897f>
- Scells, H., Zucco, G., Koopman, B., Deacon, A., Azzopardi, L., & Geva, S. (2017). Integrating the framing of clinical questions via PICO into the retrieval of medical literature for systematic reviews. *Proceedings of the 2017 ACM on Conference on Information and Knowledge Management* pp. 2291-2294): ACM. <https://doi.org/10.1145/3132847.3133080>
- Schleifer, R., & Vannatta, J. (2013). *The chief concern of medicine: the integration of the medical humanities and narrative knowledge into medical practices*: University of Michigan Press. <https://doi.org/10.3998/mpub.3157169>
- Shankar, P.R. (2013). Developing and sustaining a medical humanities program at KIST Medical College, Nepal. *Indian journal of medical ethics*, 10, 51-53. <https://doi.org/10.20529/IJME.2013.012>
- Shapiro, J., Duke, A., Boker, J., & Ahearn, C.S. (2005). Just a spoonful of humanities makes the medicine go down: introducing literature into a family medicine clerkship. *Medical Education*, 39, 605-612. <https://doi.org/10.1111/j.1365-2929.2005.02178.x>
- Shapiro, J., Morrison, E., & Boker, J. (2004). Teaching Empathy to First Year Medical Students: Evaluation of an Elective Literature and Medicine Course. *Education for Health: Change in Learning & Practice*, 17, 73-84. <https://doi.org/10.1080/13576280310001656196>
- Shapiro, J., Ortiz, D., Ree, Y.Y., & Sarwar, M. (2016). Medical students' creative projects on a third year pediatrics clerkship: a qualitative analysis of patient-centeredness and emotional connection. *BMC Med Educ*, 16, 93. <https://doi.org/10.1186/s12909-016-0614-4>
- Shapiro, J., Rucker, L., Boker, J., & Lie, D. (2006). Point-of-view writing: A method for increasing medical students' empathy, identification and expression of emotion, and insight. *Education for Health: Change in Learning & Practice*, 19, 96-105. <https://doi.org/10.1080/13576280500534776>
- Tsai, S.L., & Ho, M.J. (2012). Can narrative medicine training improve OSCE performance? *Medical Education*, 46, 1112-1113. <https://doi.org/10.1111/medu.12029>

- Wiezel, I., Horodeńska, M., Domańska-Glonek, E., & Torres, K. (2017). Is There a Need for Narrative Medicine in Medical Students' Education? A Literature Review. *Medical Science Educators*, 27, 559-565. <https://doi.org/10.1007/s40670-017-0426-0>
- Zahavi, D. (2014). Empathy and Other-Directed Intentionality. *Topoi*, 33, 129-142. <https://doi.org/10.1007/s11245-013-9197-4>
- Zimmermann, M. (2013). Integrating medical humanities into a pharmaceutical care seminar on dementia. *American journal of pharmaceutical education*, 77, 16. <https://doi.org/10.5688/ajpe77116>

Notes

- 1 The present organization of the mandatory course in Denmark is different from the typical, required course at Co-lumbia. Our goal is to develop our course towards the model at Columbia which offers 12-13 medical seminars to choose among, each with a participation limit of 12. Here one can choose seminars like "Poetry: Close Readings and Craft", "The Medical Student as Writer", "The Philosophy of Death", "An Exploration of Dance and the Spectrum of Physical Narrative", "Observation and Uncertainty in Art and Medicine", and "Photography and Visual Storytelling", some of them taught at the Medical School and some taught at Museum of Modern Art or Metropolitan Museum of Art.
- 2 MD and PhD Mohammadreza Hojat, has developed instruments to measure empathy in the context of health professional education and health care (Hojat, 2016). *The Jefferson Scale of Empathy* is a quantitative measurement of physicians' empathy with patients relying on a questionnaire including questions as "I believe that empathy is an important therapeutic factor in medical treatment", which is answered on a 7-point scale from "strongly disagree" to "strongly agree". For a discussion of if and how empathy is correlated to literature, see Suzanne Keen *Empathy and the Novel* (2007) and Ann Jurecic "Empathy and the Critic" (2011).
- 3 Counter to this position, philosopher Dan Zahavi has argued in "Empathy and Other-Directed Intentionality" (Zahavi, 2014) that empathy in the phenomenological tradition is rather understood as a mental resource used by the subject in order to understand how other subjects feel, think and react. Furthermore, this leads to understanding empathy as a spontaneous reaction to others which is inborn and cannot be learned or unlearned.
- 4 This was provided by our University's Research Support Unit "Videncentret" (<http://videncentret.dk/for-researchers/tools/>).
- 5 See e.g. Cooper & Tauber; Kuper in (Ousager & Johannessen, 2010)