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Review

From Hippocrates to the Francis Report - Reflections on empathy

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INTRODUCTION

A year has now passed since the Francis Inquiry published its recommendations, after examining the causes of the failings in care at Mid Staffordshire NHS Foundation Trust[1]. A key message concerned the need to nurture a "common culture of caring, commitment and compassion". This is not a new concept – in the fifth century BC, Hippocrates wrote to the effect that where there is love of humanity, there is also love for the art of medicine[2]. So across the millennia, despite the increasing, and undoubtedly often life-saving, scientific and technological advances which would have been utterly inconceivable to Hippocrates, the basic message remains constant – the importance of empathy within the human interaction between a doctor and a patient.

THE IMPORTANCE OF EMPATHY

Empathy has long been considered to be a fundamental requirement within a patient-doctor relationship. High empathy levels within a consultation have been shown to reduce levels of patient dissatisfaction and consequently also reduce the likelihood of litigation against the doctor[3]. It has been shown that heightened empathy leads to more effective history taking, better physical examination skills[4] and increased scores in clinical competence[5]. Empathy also promotes adherence to treatment plans and improved efficiency of consultation time[6]. High empathy levels in practitioners have even been associated with a reduced severity and duration of the common cold[7], reduction in inflammatory markers[7] and improved control of blood sugar and cholesterol levels in diabetics[8]. It seems logical to assume that patients are more likely to follow a doctor's advice and adhere to treatment if a trusting relationship has been established.

As well as empathy benefiting the patient it also enriches the doctor's day-to-day experience. Several physician job-satisfaction surveys have shown that doctors value very highly their opportunity to empathize with their patients[9]. It can be argued therefore that the ability to show empathy sincerely is an essential skill for increasing not only the quality of a patient's general health but also the longevity of the physician's mental health.

Conversely, the antonym of empathy is arguably narcissism. In Greek mythology Narcissus was the son of a god, renowned for his beauty and condemned to fall in love with his own reflection. Vigilante defines narcissism as interpreting challenges as rejections, overvaluing one's own performance, inflexibility, preoccupation with oneself, attention seeking, being unwilling to learn and blaming one's own failure on others[10]. This trait was considered to closely match descriptions of students whom medical staff had identified as having concerning or "problematic" behaviour[11].

So given all of the above, it seems clear that the "ideal" doctor should exhibit high levels of empathy towards their patients and low levels of narcissistic behaviour.

Fig 1. "Mountain Landscape with Narcissus" by Jacob Pynas (after 1650). Reproduced with permission of the National Gallery, London.

MEDICAL SCHOOL SELECTION

The General Medical Council's (GMC) publication "Tomorrow's doctors"[12] states that the process of selection of medical students must take account of personal attributes as well as academic achievements and the *capacity* to achieve the outcomes required as outlined in Good Medical Practice[13].

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In other words the ideal doctor will be proficient in both scientific and humanistic aspects of medical practice. Future doctors undoubtedly need to have strong academic ability; this must be married with other competencies – so-called non-cognitive skills including communication, problem solving, empathy and ethical reasoning.

Fig 2. "The Doctor" by Luke Fildes (1891). Reproduced with permission of the Tate Gallery, London.

A driving force behind the development of alternative methods for selecting medical students is that the increasingly high academic achievements of medical school applicants make it difficult to discriminate between candidates on the basis of measurements of cognitive skills alone. Until recently, previous academic achievement, such as school leaving examinations (A-levels in the UK), was considered the best predictor of success in University[14,15]. In 2006 the UK Clinical Aptitude Test (UKCAT)[16] was introduced in the UK in an attempt to level out the playing field for those whose school achievement might not have reached its potential due to inadequacies within the school system or other factors outside of their control. By testing potential rather than achievement the UKCAT attempts to remove the 'class' advantage possessed by those fortunate enough to have received their education in a higher-ranking school. However, neither achievement nor aptitude tests assess non-cognitive skills. It has also been demonstrated in several studies that performance in the UKCAT is only weakly correlated with future performance at medical school[17,18]. To assess non-cognitive skills additional methods are clearly required.

ASSESSMENT OF NON-COGNITIVE SKILLS

Evidence consistently suggests that the panel interview, traditionally used to assess an applicant's interpersonal skills, lacks reliability and validity[19]. Multiple Mini Interviews (MMIs), which were first developed at McMaster University in Canada[20], have been shown to be significantly more reliable and acceptable compared to interview panels. MMIs afford the possibility of integrating a test for empathy with any combination of other non-cognitive skills.

MMIs are based on the Objective Structured Clinical Examinations (OSCEs) which are widely accepted as a tool for undergraduate assessment. While their content differs from OSCEs some fundamentals are similar. OSCEs and MMIs consist of a series of short "stations" in each of which an applicant faces a different task and a different assessor. Sometimes the candidate will be expected to interact with a role-player whilst being observed by the assessor; on other occasions they will answer questions or discuss topics with an assessor one-to-one. Multiple Mini Interviews involve assessment by several different assessors in short interviews, each aimed at assessing a particular non-cognitive skill or combination of these. A principle used in the development of MMI stations is that questions should not require any medical knowledge and should not have a single correct answer so that the examiner could potentially make a counter argument for whichever stance the candidate takes.

The MMI process at QUB comprises 9 stations lasting 5 minutes each. Eva[20] showed that increasing the number of assessors per station (much like in a panel interview) did not improve the reliability but increasing the number of stations with an independent different assessor each time did, with an apparent plateau after 9 stations. The overarching reason for the MMI format is to take advantage of the 'wisdom of crowds'[21], a theory which states that in most circumstances, by taking the average opinion of a large number of independent individuals we can obtain an answer or prediction which is better than the opinions of a few ("under the right circumstances, groups are remarkably intelligent, and are often smarter than the smartest people in them").

Queens University Belfast (QUB) is one of several UK medical schools to have developed Multiple Mini Interviews (MMIs) as a means of testing these attributes and the top scoring circa 75% of applicants who fulfil the necessary criteria (score based on academic results: GCSE, A-level, primary degree) and UKCAT score) are now invited to MMI[22]. MMIs are then used to differentiate between candidates of high academic prowess in an effort to select candidates who not only have the necessary cognitive abilities but who also excel in non-cognitive ability. Empathy is one of the skills tested; the MMIs at Queen's University Belfast also purport to test problem solving, ethical reasoning and communication skills, whilst other Universities test for a slight variation of these attributes. Lievens and Conway[23] have already shown that in an assessment scenario it is difficult to discriminate reliably between different skills across interview stations or exercises. Instead, what should be expected is that candidates will perform well or otherwise within an exercise as a whole.

Our own ongoing research at QUB[24] and at Dundee University has reflected this Although this means that MMIs cannot in their current format be used to examine specifically for empathy they do afford the ability to test candidates for a complex combination of non-cognitive attributes "all-at-once" much like a real-life work environment. What is more, following on from Eva's work showing the predictive validity of MMIs in McMaster University Canada[25], work in Dundee medical school shows that MMIs can predict performance

in 1st and 2nd year medical school examinations better than either UKCAT or A-levels[26]. A similar study is currently underway at QUB.

A concern that applicants who have received pre-interview coaching will be at an unfair advantage has been quashed by the findings of a study in West Sydney[27], in which half of the applicants received coaching prior to the MMIs. The performance of the coached group was actually significantly lower than that of the non-coached group. Another frequently raised concern regards the security of examination information. Prior knowledge or even prior experience of sitting the exact same station does not however confer an advantage in MMIs[28].

DOES EMPATHY DECLINE DURING MEDICAL SCHOOL?

"*Students undergo a conversion in the third year of medical school - not pre-clinical to clinical, but pre-cynical to cynical*."

(Quote attributed to Professor Abraham Verghese, Professor for the Theory and Practice of Medicine at Stanford University Medical School and author of the best-selling novel "Cutting for Stone": http://www.whoquotes.com/abraham-verghese-quotes/)

A considerable amount of effort and resources are expended on the search for the individuals with not only the highest academic, scientific potential but those who show the most potential for compassion and perhaps "idealism". Unfortunately a search of the literature reveals some rather alarming findings. Could it be that students who start out as empathetic individuals then lose their ability to connect emotionally with their patients as they progress through their medical student career?

A number of studies report a decline in empathy as students progress through medical school. These studies all use the Jefferson Scale of Physician Empathy (JSPE) which includes 20 items each answered on a 7-point Likert-type scale (Strongly agree=7, Strongly Disagree=1) in order to assess empathy and other related attributes such as enthusiasm, idealism and humanitarianism[29]. Chen et al's study at Boston Medical School found that empathy scores decreased significantly in the third year (students' first exposure to clinical medicine)[30]. Hojat et al also demonstrated a significant decline in empathy scores from the first to the third year with student follow-up showing that these scores remained low until graduation[31,32].

On the other hand studies from Japan[33] and South Korea[34,35] again using the JSPE found the opposite – that empathy increased during training. Hong[35] acknowledges that cultural differences have an effect and that initial scores were lower in the Korean study. It is suggested that ideally global studies should be carried out.

Colliver et al[36] reviewed 11 studies and overall found only a weak decline in empathy during medical school was shown and questioned the validity of the JSPE score which relies on self-reporting and pointed out that studies have low and varying response rates. It is not clear if measurements reflect patients' perspectives or the effectiveness of the care being delivered.

Although the above findings demonstrate that a consensus has not been reached in the literature, it would seem that it is not acceptable to take the development of empathy during medical studies for granted.

CAN EMPATHY BE TAUGHT?

Different strategies for teaching and enhancing empathy have been examined[37]. Some interesting ideas include shadowing patients, pseudo-hospitalization, studying literature and the arts and role playing, as well as the tried-and-tested Balint method[38].

Shapiro et al found that medical students who undertook an 8-hour course involving the reading and discussing of poetry and short stories scored significantly higher empathy scores after the course[39]. DasGupta and Charron present an exercise for teaching empathy which involves a group discussion of a real-life scenario from different view-points and re-writing it in different styles[40]. Some universities eg Weill Cornell have an optional programme - Humanities and Medicine - which aims to increase students' understanding of the patient experience through literature, art and music.

A recent study[41] described 2 groups of students; one group watched 22 brief video clips of patient encounters from three mainstream movies with empathetic themes and the control group watched a medical history documentary film. The JSPE was administered before and after viewing. Ten weeks later half of the experimental group participated in a presentation on the importance of empathy in patient care, the other half plus the control group watched a further medical documentary. A significant increase in the JSPE was seen in the experimental group. The subgroup which was exposed to the reinforcement lecture showed a sustained increase in score, in the other subgroup the increase dissipated. There was no change in the control group at any point.

There is a weight of evidence therefore that empathy is something which can be learned and reinforced by targeted empathy programmes, some of which are simply constructed, as in the above example and which could be theoretically incorporated into the medical school curriculum without excessive consumption of time or resources.

What do students themselves think? An interesting qualitative paper from Nottingham University involved interviewing students from the fourth and fifth years[42]. Opinions were varied but the predominant theme which emerged was that students felt that empathy is an innate characteristic which can be taught and enhanced.

Is the choice of future medical career influenced by levels of empathy? Several studies[43,44] have looked at this and demonstrated that students interested in "people-oriented"

specialties demonstrate higher levels of empathy than those who prefer more technology-oriented specialties.

In conclusion, the message which would appear to recur in the literature time and time again is that empathy is a fundamental component of the doctor-patient relationship. Not only should universities be assessing the innate capacity for empathy and related traits in applicants to medical school, but the development of empathetic skills in future doctors should be continued during their formative years at medical school. Further research is needed on how best to incorporate human values into medical school selection and the curriculum in order to bring about reform in medical education, with the ultimate aim being the formation of technically proficient young doctors who will also empathize with their patients and serve their interests with integrity and respect.

REFERENCES

1. Francis R. Report of the Mid Staffordshire NHS Foundation Trust Public Inquiry. London: HMSO. 2013. Available online from: http://www.midstaffspublicinquiry.com/report. [Last accessed December 2014].
2. Jones WH. Introduction to the oath. In: Jones WHS, translator. *Hippocrates*. Volume **I**. Cambridge, MA: Harvard University Press,1923: 296.
3. Levinson W. Physician-patient communication. A key to malpractice prevention. *JAMA*. 1994;**272(20)**:1619-20.
4. Collier J, Willis MS, Robbs RS, Cohen DS, Schwartz MH. Assessment of empathy in a standardized-patient examination. *Teach Learn Med.* 1998;**10(1)**:8-11.
5. Hojat M, Gonnella JS, Mangione S, Nasca TJ, Veloski JJ, Erdmann JB, et al. Empathy in medical students as related to academic performance, clinical competence and gender. *Med Educ.* 2002;**36(6)**:522-7.
6. Nightingale SD, Yarnold PR, Greenberg MS. Sympathy, empathy, and physician resource utilization. *J Gen Intern Med.* 1991;**6**:420-3.
7. Rakel D, Barrett B, Zhang Z, Hoeft T, Chewning B, Marchand L, *et al.* Perception of empathy in the therapeutic encounter: effects on the common cold. *Patient Educ Couns.* 2011;**85(3)**:390-7.
8. Hojat M, Louis DZ, Markham FW, Wender R, Rabinowitz C, Gonnella JS. Physicians' empathy and clinical outcomes for diabetic patients. *Acad Med.* 2011;**86(3)**:359-64.
9. Konrad TR, Williams ES, Linzer M, McMurray J, Pathman DE, Gerrity M, *et al*. Measuring physician job satisfaction in a changing workplace and a challenging environment. *Med Care.* 1999;**37(11)**:1174-82.
10. Vigilante FW. Students' narcissism and academic performance. *Soc Casework.* 1983;**64(10)**:602-8.
11. Munro D, Bore M, Powis P. Personality factors in professional ethical behaviour: studies of empathy and narcissism. *Aus J Psychol.* 2005;**57(1)**:49-60.
12. Tomorrow's doctors:outcomes and standards for undergraduate medical education. Manchester: General Medical Council; 2009. Available online from: http://www.gmc-uk.org/Tomorrow_s_Doctors_0414.pdf_48905759.pdf. [Last accessed December 2014].
13. Good Medical Practice. Manchester: General Medical Council; 2013. Available online from: http://www.gmc-uk.org/guidance/good_medical_practice.asp. [Last accessed December 2014].
14. James D, Chilvers C. Academic and non-academic predictors of success on the Nottingham undergraduate medical course 1970-1995. *Med Educ.* 2001;**35(11)**:1056-64.
15. McManus IC, Powis DA, Wakeford R, Ferguson E, James D, Richards P. Intellectual aptitude tests and A levels for selecting UK school leaver entrants for medical school. *BMJ.* 2005;**331(7516)**:555-9.
16. UK Clinical aptitude test. (UKCAT). What is UKCAT? Nottingham: University of Nottingham, Queen's Medical Centre; 2014. Available online from:http://www.ukcat.ac.uk/. [Last accessed December 2014].
17. Lynch B, Mackenzie R, Dowell J, Cleland J, Prescott G. Does the UKCAT predict Year 1 performance in medical school? *Med Educ.* 2009;**43(12)**:1203-9.
18. Yates J, James D. The UK Clinical Aptitude Test and clinical course performance at Nottingham: a prospective cohort study. *BMC Med Educ.* 2013;**13**:32-6920-13-32.
19. Kreiter CD, Yin P, Solow C, Brennan RL. Investigating the reliability of the medical school admissions interview. *Adv Health Sci Educ Theory Pract.* 2004;**9(2)**:147-59.
20. Eva KW, Rosenfeld J, Reiter HI, Norman GR. An admissions OSCE: the multiple mini-interview. *Med Educ.* 2004;**38(3)**:314-26.
21. Surowiecki J. The wisdom of crowds: why the many are smarter than the few and how collective wisdom shapes business, economies, societies and nations. New York: Anchor; 2005.
22. Steele K. New selection procedures for entry to Medicine at QUB. Report on the 2012 Admissions process. *Ulster Med J.* 2013;**82(3)**:157-9.
23. Lievens F, Conway JM. Dimension and exercise variance in assessment center scores: a large-scale evaluation of multitrait-multimethod studies. *J Appl Psychol.* 2001;**86(6)**:1202-22.
24. Aicken M. Developing an evidence-based multiple mini interview process to assess non-cognitive skills in medical school admissions to Quenn's University, Belfast. 2013.
25. Rosenfeld JM, Reiter HI, Trinh K, Eva KW. A cost efficiency comparison between the multiple mini-interview and traditional admissions interviews. *Adv Health Sci Educ Theory Pract*. 2008;**13(1)**:43-58.
26. Husbands A, Dowell J. Predictive validity of the Dundee multiple mini-interview. *Med Educ*. 2013;**47(7)**:717-25.
27. Griffin B, Harding DW, Wilson IG, Yeomans ND. Does practice make perfect? The effect of coaching and retesting on selection tests used for admission to an Australian medical school. *Med J Aust*. 2008;**189(5)**:270-3.
28. Reiter HI, Salvatori P, Rosenfeld J, Trinh K, Eva KW. The effect of defined violations of test security on admissions outcomes using multiple mini-interviews. *Med Educ.* 2006;**40(1)**:36-42.
29. Hojat M. Empathy in patient care:antecedents, development, measurement and outcomes. : Springer; 2006.
30. Chen D, Lew R, Hershman W, Orlander J. A cross-sectional measurement of medical student empathy. *J Gen Int Med.* 2007;**22(10)**:1434-8.
31. Hojat M, Mangione S, Nasca TJ, Rattner S, Erdmann JB, Gonnella JS, et al. An empirical study of decline in empathy in medical school. *Med Educ.* 2004;**38(9)**:934-41.
32. Hojat M, Vergare MJ, Maxwell K, Brainard G, Herrine SK, Isenberg GA, et al. The devil is in the third year: a longitudinal study of erosion of empathy in medical school. *Acad Med.* 2009;**84(9)**:1182-91.
33. Kataoka HU, Koide N, Ochi K, Hojat M, Gonnella JS. Measurement of empathy among Japanese medical students: psychometrics and score differences by gender and level of medical education. *Acad Med.* 2009;**84(9)**:1192-97.
34. Lee B, Bahn G, Lee W, Park J, Yoon T, Baek S. The relationship between empathy and medical education system, grades and personality in medical college students and medical school students. *Korean J Med Educ.* 2009;**21(2)**:117-29.
35. Hong M, Lee WH, Park JH, Yoon TY, Moon DS, Lee SM, et al. Changes of empathy in medical college and medical school students: 1-year follow up study. *BMC Med Educ*. 2012;**12**:122.

36. Colliver JA, Conlee MJ, Verhulst SJ, Dorsey JK. Reports of the decline of empathy during medical education are greatly exaggerated: a reexamination of the research. *Acad Med.* 2010;**85(4)**:588-93.

37. Hojat M. Ten approaches for enhancing empathy in health and human services cultures. *J Health Hum Serv Adm.* 2009;**31(4)**:412-50.

38. Balint M. The doctor, his patient and illness. New York: International Universities Press; 1957.

39. Shapiro J, Kasman D, Shafer A. Words and wards: a model of reflective writing and its uses in medical education. *J Med Humanit.* 2006;**27(4)**:231-44.

40. DasGupta S, Charon R. Personal illness narratives: using reflective writing to teach empathy. *Acad Med.* 2004;**79(4)**:351-6.

41. Hojat M, Axelrod D, Spandorfer J, Mangione S. Enhancing and sustaining empathy in medical students. *Med Teach.* 2013;**35(12)**:996-1001.

42. Tavakol S, Dennick R, Tavakol M. Medical students' understanding of empathy: a phenomenological study. *Med Educ.* 2012;**46(3)**:306-16.

43. Newton BW, Savidge MA, Barber L, Cleveland E, Clardy J, Beeman G, *et al*. Differences in medical students' empathy. *Acad Med. 2*000;**75(12)**:1215.

44. Newton BW, Barber L, Clardy J, Cleveland E, O'Sullivan P. Is there hardening of the heart during medical school? *Acad Med.* 2008 Mar;**83(3)**:244-9.

