Did medical curiosity kill the cat?

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Categories: Educational Strategies, Students/Trainees, Teaching and Learning, Continuing Professional Development, Undergraduate/Graduate

Received: 03/08/2018
Published: 06/08/2018

Abstract

Curiosity is the urge to explore, understand, and discover anything new. Curious doctors act as ‘frontier workers’ between the humanities and natural sciences. In their efforts towards trying to "understand" both their patients and their complaints, they function as detectives searching for every seemingly unimportant detail in their constant endeavor of solving the mysterious medical puzzle of illness and providing their ailed patients with adequate help. The curiosity to discover my patients’ character, to learn their hopes and desires, to explore their past and current social environment is a crucial part of the manifold studied foundation of what is termed medical empathy. Therefore, nurturing curiosity during the course of medical training should be highly desirable. That said, it seems all the more regrettable that medical education often suppresses the development of curiosity rather than nurtures it, often overemphasizing verifiable facts rather than stimulating more complex thought and reflection processes. The importance of medical curiosity, previously neglected as a potent effect and success factor in the medical-therapeutic setting, should no longer be misunderstood or denied its role. We, as physicians and lecturers, have the power to ignite our students' medical curiosity, if we manage to transmit the "spark". This Personal View by a German MD is intended as a passionate plea for more curiosity in medical education.

Keywords: Curiosity; medical education; medical school; teaching medicine; practising medicine; burnout prevention; medical students; medical doctors.

Personal View

In this day and age, the inquisitive mind can hope to satisfy its thrust for information easily and everywhere. The Internet is teeming with forums and online portals promising the avid seeker swarm-response answers. Perusing these leisurely, I recently stumbled across a forum user’s question on if it was possible to become a doctor without being able to stand the sight of blood. In line with common forum custom, many more or less helpful answers were given, one of which particularly attracted my attention. The respondent assures the unknown questioner that their initial feelings of nausea and disgust would soon be overcome by routine and later be replaced by a growing sense of "curiosity" during further medical training. I caught myself reading the answer again and again. Surprisingly, I was
not irritated by the statement regarding the initial feelings of nausea and disgust, but stumbled across the respondent's assumption regarding the supposedly increasing sense of curiosity - and asked myself if medical curiosity really does grow during the course of our academic years?

From my very first day of residency in a German university hospital, teaching and working in direct contact with medical students from the beginning to the end of their medical studies, the so-called "practical year", has accompanied me on a daily basis. I have even gone so far as to devote my scientific work to the improvement of medical education and the assessment of medical students’ psychosocial burden. My professional years have, therefore, led to many more or less enlightening findings about this student target group. However, they have not evoked the impression that students generally leave our universities brimming with curiosity.

Curiosity is commonly used to describe the urge to examine surroundings, to explore, understand, and discover anything new. In the following, curiosity is always understood epistemically, that is, as aiming to provide organisms with information and new knowledge instead of, for example, as aiming to satisfy a desire for sensation (Berlyne, 1960). It is both a trait in which humans differ, genetically anchored and modified by the environment, and a current state (Naylor, 1981). Hence, curious doctors act as ‘frontier workers’ between the humanities and natural sciences. In their efforts towards trying to "understand" both their patients and their complaints, they function as detectives searching for every seemingly unimportant detail in their constant endeavor of solving the mysterious medical puzzle of illness and providing their ailed patients with adequate help and treatment plans. For this purpose, the curious doctor is repeatedly required to leave the well-trodden paths of classical linear thinking and must instead hope, in a mosaic-like manner, to collect as much information as possible formulating and rejecting numerous suspected diagnoses and hypotheses in the dynamic process known as "clinical reasoning". Faith T. Fitzgerald suggested, in a remarkable article from 1999, that it may well be curiosity itself that turns initially unfamiliar patients into people “we can empathize with” (Fitzgerald, 1999). The curiosity to discover my patients' character, to learn their hopes and desires, to explore their past and current social environment is a crucial part of the manifold studied foundation of what is termed medical empathy (Neumann et al., 2009). Ample evidence suggests that curiosity generates greater emotional involvement and, thus, potentially greater therapeutic efficiency (Derksen, Bensing and Lagro-Janssen, 2013). In short, curiosity seems to be a key, if not the crucial, prerequisite for professional medical practice. Therefore, nurturing curiosity during the course of medical training should be highly desirable - one could even go so far as to claim that it may symbolize medical students' maturation or the process of gradual ripening towards, ultimately, “physician maturity”.

That said, it seems all the more regrettable that, as Fitzgerald commented, medical education often “suppresses” the development of curiosity rather than nurtures it, often overemphasizing verifiable facts rather than stimulating more complex thought and reflection processes (Fitzgerald, 1999). My personal experiences in medical teaching are sadly in line with these observations: at the start of medical training students seemingly exude the curiosity quint essential for their journey to becoming excellent clinicians or scientists. However, it seems to go astray or is simply lost during the course of their medical studies. Prospective physicians practice history taking with validated checklists to ensure that no relevant question remains unanswered – a practice that, at first sight, should be highly welcomed. Problems arise, however, if any deviation from the pre-structured "history taking kit" is called for - a development that seems, at least partially, systemic as long as our students, burdened by close-knit curricula, demanding study regulations, and hectic hospital work realities, are coerced and conditioned to perform their tasks to the greatest possible efficiency.

The other day, for example, an ambitious final year medical student informed me that a 68-year-old CHD patient he had admitted suffered from "severe malaria" and had indeed "almost died" in the course of a long ICU-treatment 14 years ago. Upon my inquiry where this had happened and by whom the patient had been treated, the student replied that he had stopped his exploration at this point as the patient was “after all in the hospital for elective coronary angiography”. The art of focused case presentation is an important learning goal in final year medical training and,
admittedly, malaria had nothing whatsoever to do with the patient’s current symptoms. However, if circumstances allow, patient history taking should necessarily include interest-based inquiries beyond emergency and intensive care settings. I must say that I had difficulty in understanding why the student had not mustered any "fascination” for both the disease, so uncommon in Germany, and the story behind it, hence, ultimately for this patient. Every patient tells a (different) story. Time and setting permitting, listening to these stories attentively, that is, learning about our patient’s (past) health and disease experiences, provides us with invaluable opportunities to extend our medical knowledge and imagination – in short, makes us better doctors.

On another occasion, a young patient with obsessive-compulsive disorder had a large abdominal scar and during physical examination the examiner was able to feel a strange foreign body right under it. As it turned out, this was an internal pulse generator (IPG) placed into the abdomen for the purpose of deep brain stimulation (DBS) - a fact that, despite all rarity, hardly aroused astonishment or evoked curious questions (e.g. about the indications of IPG-implantation or its operating principle) in the final year medical students present at the time. Of course, these are individual case observations and I am luckily able to cite endless examples of inquisitive and curious students. However, what remains is the misgiving that when we are busy designing daily classes for our clinic teaching sessions and auditoriums, we do not always have the encouragement and promotion of student curiosity in mind. On the contrary, young resident physicians, in particular, often feel challenged by their student audiences’ scrutiny and frequently resort to hamstringing behavior in their attempts to prevent prolonged cross-examinations for fear of feeling compromised by having to reveal their own knowledge gaps.

However, for the practicing clinician, curiosity can mark the difference between "autopilot" routine case processing and the invigorating experience of daily exploration and discovery of new challenges and learning opportunities (Schattner, 2015). This is particularly relevant in light of the fact that as many as 20% of medical students already show signs of significant burnout burden by the end of their medical studies (Koehl-Hackert et al., 2012). Accordingly, one could assume that a well-preserved sense of epistemic curiosity may be able to act as a preventative factor against psychosocial burdens, including the burnout syndrome, whereas the loss of curiosity - the curiosity in others - could be understood as a dramatic sign indicating psychosocial burden. There is no scientific evidence so far, but the suggestion that a curiosity-based medical attitude could be an effective antidote to burnout in this occupational group does not seem farfetched (Schattner, 2015). Effective burnout prevention strategies, such as Mindfulness-Based Stress Reduction (MBSR), already commonly use the element of curiosity, even though the elements of mindfulness and curiosity are almost exclusively directed towards the own self (Krasner et al., 2009). However, in professional life, overburdened colleagues often lose their curiosity for others and encounters.

So what can or must be done to counteract the decline of curiosity throughout the course of medical training? How do we promote this important - and, following the reasoning above, perhaps even protective – quint essential physician quality? Well, first of all we need to amend the common proverb - curiosity did not kill the cat. The importance of medical curiosity, previously neglected as a potent effect and success factor in the medical-therapeutic setting, should no longer be misunderstood or denied its role. Furthermore, we should not forget that, despite all necessary innovation on the one hand (e.g. modern day virtual patients, well-equipped skills labs, and state-of-the-art course formats) and the actual encounter and intellectual debate with our real-life patients on the other hand (which I still consider to be our most important learning platform), our students’ curiosity must still be actively promoted and nurtured. If we discover ways and techniques in the future to better ignite our students’ medical curiosity and to transmit the "spark", we will both shape and inspire our students sustainably, which - probably more than any other instructive moment during training – will serve as catalyst and fuel for learning.

In the Internet forum mentioned above, one user soberly provided the advice that the questioner should look for a "different job" if he or she could not see blood. Posed years ago, the question on the suitability for the medical profession has long since become a fossil data track in the World Wide Web, the answers having become just as outdated. Nevertheless, I would have liked to have added that the mentioned curiosity does not simply emerge out of
nowhere to replace any abhorrence, but must be actively nurtured and trained, that it could serve a driving force for
the most beautiful profession in the world and that a lack of curiosity could lead to occupational and self-
abandonment. The anonymous questioner, that much is certain, will not see my belated answer and has perhaps long
since decided to enter into or to abstain from a career in medicine.

**Take Home Messages**

- The importance of medical curiosity in medical education and training should no longer be misunderstood or
denied its role.
- We, as medical educators, physicians and lecturers, have the power to ignite our students' medical curiosity.
- To do this, we need to develop appropriate strategies and test them in teaching practice.

**Notes On Contributors**

Dr. med. Till Johannes Bugaj is a German medical doctor currently funded by the Physician-Scientist Programme of
Heidelberg Faculty of Medicine.

**Acknowledgements**

I thank Anna Cranz for her assistance in proofreading the manuscript and translating my thoughts into beautiful
English words.

I thank apl. Prof. Dr. med. Christoph Nikendei, MME for having been such an invaluable mentor, nurturing my own
scientific curiosity over the past years.

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Appendices

None.

Declarations

The author has declared that there are no conflicts of interest.

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Ethics Statement

Ethics approval was not necessary as this is a personal view only.

External Funding

This paper has not had any External Funding