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Towards non-reductionistic medical anthropology, medical education and practitioner–patient-interaction: The example of Anthroposophic Medicine

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ABSTRACT

Objective: To develop the hypothesis that reductionism in medical anthropology, professional education and health care influences empathy development, communication and patient satisfaction.
Method: We identified relevant literature and reviewed the material in a structured essay. We reflected our hypothesis by applying it to Anthroposophic Medicine (AM), an example of holistic theory and practice.
Results: Reductionism in medical anthropology such as in conventional medicine seems to lead to a less empathetic and less communicative health care culture than holism such as in CAM disciplines. However, reductionism can be transformed into a systemic, multi-perspective holistic view, when the emergent properties of the physical, living, psychic, spiritual and social levels of human existence and the causal relations between them are more carefully accounted for in epistemology, medical anthropology and professional education. This is shown by the example of AM and its possible benefits for communication with and satisfaction of patients.
Conclusion: A non-reductionistic understanding of the human being may improve communication with patients and enhance patient benefit and satisfaction.
Practice implications: Interdisciplinary qualitative and quantitative studies are warranted to test this hypothesis and to understand the complex relations between epistemology, medical anthropology, education, health care delivery and benefit for patients.

1. Introduction

Academic medicine is characterized by a peculiar paradox. On the one hand the scientific achievements since the 19th and 20th centuries are unparalleled in history. On the other hand, patients are increasingly dissatisfied: conventional medicine (CON) is often experienced as too reductionistic, with a predominant focus on physical, technical and statistical aspects of disease and treatment and a neglect of psycho-social and existential issues and individual patients needs [1,2]; and more holistic, humanistic and individualized forms of medicine are called for by patients [3,4]. Empirical evidence suggests that this is a main reason for the increasing popularity of complementary and alternative medicine (CAM) [5,6]. Patients usually seek CAM not because they do not esteem the merits of CON, but because they miss certain aspects in it that they expect from CAM. This includes a more empathetic practitioner–patient relationship, a better consideration of individual needs, more participation in decision making, more comprehensive or holistic strategies and a better inclusion of psycho-social and spiritual needs [7]. Indeed, medical CAM practitioners may have a more intrinsic motivation and a more holistic philosophy than CON practitioners [8], resulting in comparatively more satisfaction of their patients [9]. Therefore we ask if a more holistic philosophy in medical anthropology and professional education may improve communication with patients, the development of empathy, and in this way positively influence patient satisfaction.

2. Method

We identified relevant literature for the topic, reviewed the material in a structured essay, and reflected our basic hypothesis by applying it to the example of Anthroposophic Medicine (AM), known for its holism in medical anthropology and education. Section 3.1 examines the relation between reductionism and the perceived loss of humanness in health care; Section 3.2 relates medical anthropology to education; Section 3.3 proposes a basis for a non-reductionistic view; Sections 3.4 and 3.5 exemplify this

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with AM and its didactic principles; and Section 3.6 reviews evidence for its possible effects on patient satisfaction.

3. Results

3.1. The problem of reductionism in medical anthropology

In 2002 the Swiss Academy for Medical Sciences published the results of a representative survey on the expectations of the Swiss population for the future of health care. 69% of the citizens wished more humanism, 58% more CAM, 27% more family medicine, and only 21% more high tech. Holism was one of the main desired attributes of future health care [10]. The perceived lack of humanistic qualities is increasingly acknowledged as a major problem in modern medicine: "patients are frequently unhappy with medical care because physicians fail to demonstrate humanistic qualities" [11]. Based on empirical evidence that CON is often experienced as too reductionistic [5–10], this development can be interpreted as natural consequence of the reductionistic paradigms in medicine, already well expressed in 1842 by Du-Bois Reymond: "Brücke and I we have sworn to ourselves to enforce the truth that no other forces are acting in the organism than the plain physicochemical ones" [12]. Since then the concentration of research on the elucidation of physicochemical structures and functions has resulted in the enormous progress of modern medicine, but also in the reductionistic conception of medical anthropology. The more it became clear that the phenomena of life and consciousness all *depend* on specific genetic, biochemical, or neurophysiologic processes, the more one believed that they are *caused* by them. The organism is essentially seen as an "intelligent robot of the gene pool" [13], the brain as an "engine of reason" [14], the human mind as a "virtual actor" caused by brain processes [15] or a "cultural construct" [16], but certainly not as a real self-active entity, and freedom of the human will is declared an illusion. In other words, what is subjectively experienced by human individuals as belonging to their human *reality* and what also used to constitute the "humanness" of persons in classical anthropology has been abolished from science or delegated to personal belief systems or philosophies. Consequently, the main focus of medical theory, education and practice lies on the physical issues of medicine, with a corresponding neglect of the more humanistic sides of health care. It is understandable that this can be experienced as a lack of humanism by patients, and that more holistic approaches which include such aspects might be felt to remedy this lack.

3.2. Medical anthropology and professional education

Reductionism has profoundly influenced professional education. The core curriculum is almost exclusively built upon the physical and biological sciences, with a corresponding neglect of psycho-social and existential human issues. The humanities are usually left to the role of add-ons and not acknowledged as an integrated part of the "proper" and "scientific" curriculum [17]. In consequence, medical anthropology is overwhelmingly based on physical and biological concepts.

But the basic understanding of the human being conveyed during education cannot remain without influence on the shaping of conceptions, inner attitudes, professional conduct and concrete actions in health care. Thus it is not surprising that the development of empathy as a competence of future physicians appears to be stunted instead of fostered through our present science based medical training [17,18].

At present, the awareness for this problem seems to be growing. As Halperin recently wrote: "Immersion in science is a necessary part of medical education but not sufficient. Courses in the history of medicine, the medical narrative in literature, bioethics, medicine and art, and spirituality and medicine will train physicians who will temper technological medicine with a humanistic touch" [11]. For similar reasons "patient-centeredness" has become an important desideratum of good medicine. This necessitates the deliberate cultivation of qualities such as "compassion, empathy, and responsiveness to the needs, values, and expressed preferences of the individual patient" [19].

However, it will not be sufficient to "temper technological medicine with a humanistic touch" by *just adding* humanities to science (which by itself would be an enormous, necessary and highly welcome achievement, of course!). *Science itself* will have to immerse more deeply into the central question of any form of humanism: what constitutes a human being? How, for example, can "holism" be developed, if the "whole" is held to be nothing but the result of its interacting parts, with no ontological value or causal role by itself? How can the "psyche" or the "spiritual" be considered ontologically real if "no other forces are acting in the organism than the plain physico-chemical ones" [12]? How can the human individual become a main focus of patient-centeredness, if ontologically the "individual" or "person" is only seen at the level of biological markers, genetics and molecular biology such as in "personalized medicine"? In his Lancet essay of 2000 John Martin stated: "Perhaps the great problem of the next 100 years in biology will be to understand what makes the human being a human being" [20]. But to understand the human being comprehensively, it will be necessary to go beyond physical sciences and biology.

3.3. "Emergence", an optional basis for a non-reductionistic medical anthropology

From a factual and epistemological point of view this seems possible when considering the well-known fact of emergence in the systemic build-up of inorganic, organic and human nature. "Emergence" is an expression for the phenomenon that the properties of hierarchically higher levels of a self-organizing complex system are completely new ("emergent") with respect to the properties of lower levels [21]. An example for this is the appearance of specific new properties through the transitions between elementary particles and atoms, atoms and molecules, macromolecules, organelles, cells, cell systems, organs, organ systems, organisms, and super-organisms. Each of these emergent levels has its own and specific properties.

Epistemologically, higher and lower order properties are equivalent: on each level, certain specific phenomena can be observed, e.g. the white and amorphous powder of sodium as well as the stinking gas of chloride on the lower level, and the fairly transparent cubes of salt crystals on the higher one. And all of these phenomena obey to their specific laws, and not to others. Reductionism has hoped that emergent higher-order properties can be deduced from lower order properties ("strong" reductionism). However, the essential point in the systemic built-up of matter is that this is not possible [21]. As to their phenomenological and lawful content, higher order properties *cannot be logically derived* from those of the lower levels; they are only *compatible* with them ("weak" reductionism). For example, the properties of molecules cannot be logically calculated from the first principles of quantum-mechanics; mathematically, the transition between them can only be operationalized by "asymptotic boundary transitions" [22].

This of course limits the "bottom-up" interpretation of reality in reductionism: ontologically, the "whole" is not just the sum of its parts, but a reality in its own right, equivalent to the reality of its conditional parts [23]. The task of science then is not to "reduce" reality to its smallest particles, but to observe the phenomena of each of its levels separately as well as to find the laws according to