GENDER PERSPECTIVE IN MEDICINE – A CONTRADICTION?
A useful model for comprehending structures and hierarchies within medical science

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During the last few decades, research has reported unjustified differences between women and men in various areas of clinical and academic medicine. To avoid such gender bias, a gender perspective in medicine has been asked for. However, difficulties and resistance have been reported from implementation attempts. In this paper we theorise about and try to understand this resistance in relation to what is considered good and valid research in the medical society.

The concept of gender
The concept of gender has been used in the social and humanistic sciences since the 1960s. It was originally introduced to designate how different societies and cultures interpret biological sex [1,2]. It refers to the constantly ongoing social construction of what is considered “feminine” and “masculine” [3], based on sociocultural norms and power. Gender implies that differences between women and men are not to be seen as naturally occurring or unchangeable. Instead gender is subject to change and negotiation. We all “do gender” in all kinds of social interactions [4,5].

Thus gender is a wider concept than sex [4] and a gender perspective in medicine implies that living conditions, positions in society and societal expectations about ‘femininity’ and ‘masculinity’ are to be considered along with biology in professional relationships, as well as when theorising about women and men. Yet, in medical research and education the term gender is often wrongly used as being synonymous with biological sex [6]. Sometimes sex is simply replaced by gender and used as a variable even in experiments on animals [7].

Research about unmotivated differences between women and men in various areas of clinical and academic medicine has led to a growing awareness of gender bias in medicine [8-16]. Consequently, there are good reasons for a gender perspective to be included in medicine in the same way as perspectives regarding social class, ethnicity, and age are. However, in reports from attempts to introduce gender issues in clinical medicine and into medical curricula and medical research, hard work, difficulties and resistance have been experienced and described [17-20].

A theoretical model
In this paper we utilise a theoretical model, originally introduced by Johansson [21] to illustrate plurality and rationality of the social sciences, to understand structures of scientific medicine and how they might influence the resistance to gender issues. The original model was used to illustrate that a scientific field can embrace different kinds of research with different scientific rationalities, defined as the means to obtain truth or “truthlikeness”. The presumption behind the theoretical model is that science as a social phenomenon is influenced by competition like the rest of society. Four kinds of competition are described and related to each other in pairs.

The first competition pair deals with to whom the research is addressed in the first place: to fellow researchers in the same field (actor-oriented) or to those who might benefit from the results of the research (public-oriented). The second competition pair deals with how the research is pursued: within the prevailing paradigm (parallel competition) or outside (counter-
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competition). When social sciences were analysed through this competition model, Johansson distinguished four different research approaches, each with its own scientific rationality (figure 1).

(Figure 1 here)

The theoretical model applied to medicine
When applying the combinations in the model to medical science, we identify the following research areas in medicine (figure 2): basic research, applied (clinical) research, medical philosophy, and ‘action research’.

(Figure 2 here)

The biomedical framework versus other research paradigms
Basic and applied research is performed within the biomedical framework, the dominating paradigm in medicine. Researchers use the quantitative hypothetico-deductive method with epistemological roots in positivism and logical empiricism. Knowledge is defined as facts that can be verified. Explanation and proof are looked for. These traditional biomedical methods have been, and are, very successful in producing useful medical knowledge, but they are not suited for all kinds of medical research. For example, they are often not fitted to studies of “soft” data like patient experiences or patient-doctor interaction, which are important elements of clinical medicine. Nor can they help researchers to discover, interpret and understand the character and meaning of social phenomena, such as the reluctance to consider gender issues in medicine or to understand comprehensive processes in their contexts [22,23].

Medical researchers within medical philosophy and action research recognise these limitations of the biomedical methods. They see paradoxes and medical anomalies, phenomena that do not comply with established biomedical explanations, for example undefined musculoskeletal pain [24]. They adopt other research traditions, such as social constructivism, hermeneutics, or phenomenology where knowledge is seen as interpreted, contextual and situated. The aim is to understand, not to prove. A paradigm conflict arises not only because of the epistemological difference from biomedicine, but also due to the character of the research subjects and because qualitative methods that are uncommon in the biomedical contexts are often used.

Actor- versus public-oriented research in medicine
Medical scientists within basic research and medical philosophy use a scientific language with a very specialised interdisciplinary terminology and a high theoretical abstraction in their research, which is often difficult to grasp for those who are not in the field. Thus, their primary scientific communication is with their fellow researchers in the same sector. In applied and action research within medicine, on the other hand, researchers try to communicate with and address more directly those who might benefit from their scientific findings, since they are the ones that could evaluate the usefulness and efficacy of the research results.

Scientific rationalities
In the original theoretical model (figure 1) the scientific rationalities emerging from the analysis are classified as normal scientific, technological, philosophical, and political respectively. Considering the divergent patterns regarding competition outlined above, we find that the scientific approaches of medicine and their rationalities can be described as follows (figure 3):
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(Figure 3 here)

1. Basic medical research: Most researchers in this sector do their research in pre-clinical departments of, for example, cellular morphology, biochemistry, physiology, molecular biology or immunology. In their laboratories they conduct experiments and test hypotheses to gain new knowledge. The results seldom have immediate application in clinical praxis. This research often uses the traditional ‘orthodox’ biomedical design, dominating modern medical science since the late 19th century, thus applying the ‘normal’ scientific rationality within medicine.

2. Clinical (applied) research: A considerable part of medical research is within this field. It is carried out in clinical, public health and epidemiological departments and in primary health care. It represents a wide range of research subjects, for example the prevention of and more efficient treatment of global health threats like HIV-AIDS, tuberculosis, malaria and cancer, as well as the prevention and treatment of ‘welfare disorders’ including adiposity, diabetes and hypertension. The research rationality is technological in a wide sense. It encompasses not only technical issues like investigation methods or techniques to distribute medical technology and know-how, but it also includes various kinds of medical treatment and care.

3. Medical philosophy and theory of science: This research area is not very widely represented in the core of medical science. The research has to do with the humanistic side of medicine: our choices, decisions and actions, critical self-reflection and widening of perspectives. Researchers also problematise the definition, production and development of knowledge and the handling of possible biases. Such research can be found in medical ethics, medical sociology and medical anthropology and in gender theory studies. The philosophical rationality implies doing analyses to elucidate different alternatives, not to provide distinct and given answers.

4. Action research: An important purpose of action research in medicine is to empower subordinated and oppressed groups or individuals as one way to ensure better health. For example, researchers within this area pay attention to the importance of position, living conditions and life experiences for health and disease. The power asymmetry between the patient and the caregiver is also focussed on. Much consultation research and research from a gender perspective is found here. The political scientific rationality holds action and change as significant constituents.

Discussion

Understanding the resistance to a gender perspective in medicine

In the original article on the theoretical model, Johansson concludes that a scientific community as a whole is rational when there is an interaction between the different sub-rationalities and when the different research approaches respect each other and have no hierarchies between them [16]. He states:

- It does not matter too much, then, if some scientists doing normal science are stubborn or dogmatic. Neither does it matter much if some theoreticians working with paradigm conflicts are highly speculative and totally insensitive to empirical findings. Nor does it matter if some scientists /…/merely think in terms of usefulness. /…/as long as there is an interaction between the different kinds of rationalities.

As we see it medical science is not quite there yet. There is a clear hierarchy between different medical research fields. Basic research and, to some extent, traditional clinical research, are classified as genuine medical science. There is a special assortment of distinguished scientific journals with high impact, publishing preferably basic medical
research. Lately medical journals have also shown an increasing interest in clinical research where results can help combat global health problems in the developing as well as in the industrial world [19]. The other two research approaches, medical philosophy and ‘action’ research, are often considered as metaphysics or politics by authorities in medical academia, i.e. as something other than science.

Similarly, this is probably what has been the attitude when trying to introduce into medicine the concept of gender as something more than biological sex. Attempts have ended up outside the prevailing paradigm, a low-status area, sometimes even ruled as non-scientific. The tradition of positivistic science seems to be a strong excuse for making medical research and medical education ‘immune’ to the gender discussion taking place in the academic world in other disciplines, and in society at large [27].

A wider application of the model

As exemplified in this paper, the theoretical model gave us a better understanding of the resistance to a gender perspective in clinical and academic medicine. This understanding has given us tools to use when handling gender issues in our work as faculty members and researchers.

We suggest that the model can be applied in a wider medical context when different research traditions collide and when misunderstandings between them arise, for example when there is scepticism about the scientific rigour of qualitative methods. Used in this way, the model could contribute to shape a medical community where plurality is seen as a fruitful scientific challenge and benefit, not as a non-scientific disturbance or threat.

Summary points

• Research has revealed gender bias in many areas of clinical and academic medicine.
• To avoid such bias a gender perspective in medicine is needed.
• Resistance, difficulties and hard work have been reported from attempts to introduce gender issues into the medical world.
• The structures and hierarchies of medical science, where the biomedical framework is dominating, can unfortunately contribute to negative attitudes to gender issues and a gender perspective in the medical society.
• More of scientific pluralism in medical science may help prevent gender bias in medicine.

Competing interests

None declared.

Authors contributions

This article is an extension of a section in GR’s thesis “I am solely a professional – neutral and genderless”: On gender bias and gender awareness in the medical profession (Umeå University 2004). KH and EJ were supervisors for GR while working on the thesis. All three authors contributed to the conception, design, and drafting of this article. GR is responsible for the final draft of the article.

Acknowledgements

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Figures

Figure 1. Competition and rationality model modified from Johansson.

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