

for residents in family medicine a focus on the dyadic doctor-patient relationship should respect the physician's own integrity regarding their professional commitments, both intellectually and ethically.

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Personal Epistemology and Uncertainty

To the Editor:

This letter is in response to the interesting paper "Epistemology and Uncertainty in Primary Care: An Exploratory Study."¹ Epistemology, epistemological beliefs, and uncertainty are three concepts that are ubiquitous in all human activity, even more in clinical activities that involve the use of diverse types of knowledge. Because some of these concepts have different kinds of referents (concrete elements [real] and theoretical elements), the clarity and the precision used in the elaboration of the constructs that define them are of vital importance.

Epistemology as a theoretical construct is a branch of philosophy and an interdependent discipline whose referent is the scientific knowledge. Some of the epistemological problems are gnoseological questions: What do we know? How do we know? What is truth? But also they are methodological questions: What are problems, methods,

approaches, hypotheses, theories, and rules? What is testability: confirmability, refutability, or either?² In contrast, epistemological beliefs (personal epistemology) are constructs that represent a set of informal individual beliefs, which are explicit and implicit; the referents of these constructs are mental processes.³ Epistemological beliefs are not conditions of knowledge since we do not always know what we believe. A study carried out in Lima, Peru suggests that physicians do not know what epistemological beliefs they assume, although of course they are not unconscious.⁴ Personal epistemology has been deeply studied by cognitive sciences; cognitive studies have contributed to the elaboration of the theoretical model in their description and exploration of their relationships with many other aspects of the learning processes (as academic success, reading comprehension, etc).³ It is remarkable that the construct used by Evans and Trotter is not the one proposed by cognitive sciences, particularly because several instruments have been developed, and cognitive sciences have been able to categorize epistemological beliefs into subjectivist, relativistic, realistic, naive, and sophisticated. The instrument used by Evans and Trotter does not describe this construct; it just describes a set of beliefs regarding two social approaches to medicine. In the case that the authors claim that their questionnaire measures not only physicians' beliefs about social aspects of patient care but also physicians' epistemological beliefs, factor analysis should be included to confirm the multidimensionality of the construct.

The referents of uncertainty are concrete things, mental processes. Uncertainty is a mental state, as it represents a state of doubt between two choices and is expressed by anxiety. Therefore, that which lacks a mind cannot be uncertain. In medicine, uncertainty can restrain physicians' therapeutic actions and

at the same time stimulate diagnostic actions, such as requesting auxiliary tests. This occurs because uncertainty derives from a lack of knowledge. Because uncertainty is a reactive mental state to a specific, actual situation, it is difficult to study it using a retrospective questionnaire; by doing this, we can only study the physicians' past reactions, attitudes, and beliefs toward uncertainty but not their experiences of uncertainty. It can be better studied by presenting simulated or real problems to the physicians. I suggest that by using a questionnaire survey, the authors have found a relationship between beliefs but not between uncertainty and epistemology.

Nevertheless, raising the issue of whether there is a relationship between epistemological beliefs and uncertainty is a great merit of this paper, as it represents a heuristic question that should not be ignored and that biomedical research must study in the future.

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Authors' Reply:

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