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Goals and Methods of Research: The Challenge for Family Medicine

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This article suggests that motivations to engage in research, as in any other human activity, are both explicit and implicit. Explicit motivations tend to be objective and rationalist, concerned with such goals as the advancement and organization of knowledge. But implicit motivations, the 'hidden agendas' of research, also exist and can influence the objectives, methods, and conclusions of the research process. In addition, a highly affectively charged activity such as research also develops its own set of symbolic meanings, which further complicate its various expressions. In this article, three such symbolic meanings are identified: purpose and seriousness; maturity and adulthood; and legitimacy and belonging. The article highlights qualitative research as a methodology compatible with much of family medicine's philosophy and theoretical foundations; and discusses the role of behavioural scientists in participating in a research agenda for the field. The article concludes with a plea for the discipline of family medicine to opt for authenticity in research, rather than settling for a superficial legitimacy in the eyes of other medical specialties.

Research in family medicine has come of age. Although the question of research in family medicine has been actively raised for at least 10 years[1] most family physicians until recently defined themselves in terms antithetical to research. Family medicine was about people, their feelings, attitudes, and interrelationships as well as their illnesses, not cold hard data, rats in mazes, and multivariate correlations. But today research is the buzzword. Research task forces are assembled, research fellowships endowed, new family medicine journals devoted to research established—and a standard theme at national conventions is now . . . research!

What is happening? How will it affect family medicine? What opportunities are opened by this shift of orientation? And what dangers?

The explicit goals and motivations of research are always impeachable and laudable. According to Kerlinger, 'Research should be about knowing, a heuristic pursuit serving to discover or reveal'.[1,2] Odegaard defines research as '. . . man's most persistent effort to extend and organize knowledge by reasoned efforts that ultimately depend on evidence that can be consensually validated'.[3] Such characterizations of research allow and even encourage widely diverse methodologies, with equally disparate foci, as long as there is a commitment to authenticity of investigation and to the deepening of understanding of a complex reality. Certainly, outstanding research of this calibre currently is being performed in family medicine.[4–6]

Nevertheless, the history of science warns us against the dangers attending a big push for research, in any field. Beyond the announced explicit goals, there are also the hidden implicit agendas that guide investigation and publication. These can affect objectives, methods, and conclusions. Therefore, it is necessary to study the phenomenon of research itself from a social science perspective to uncover psychological and emotional roots not ordinarily visible.

The key to understanding this issue is the concept of 'implicit meaning', the highly symbolic, connotative, and affective significance with which objects are often unconsciously invested. We know from clinical experience that the implicit meanings which patients (and families, and physicians) attach to a given illness may radically alter, for better or worse, the patients' prognosis, compliance, satisfaction, and outcome. The implicit meanings we attach to research will have a similarly significant impact on determining the course and shape of the discipline of family medicine over the next decade.

For family medicine, research has at least three inter-related symbolic meanings: high purpose and serious intent; maturity and adulthood: a response to the search for identity; realness, legitimacy, and a sense of belonging.

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PURPOSE AND SERIOUSNESS

For years, family medicine has been plagued by an image-problem within the larger community of medicine. Family practice has often been accused of being routine, trivial, a specialty without a specialty. Even being specialists in 'the family' rarely gained family physicians credibility in the world of academic medicine. But with the "discovery" of research, family medicine has stumbled upon the true coin of the realm. For some in the field it may appear as a means of proving the seriousness and high purpose of which they have been deprived for so long.

MATURATION—A RESPONSE TO IDENTITY CRISIS

Family medicine is a relatively young specialty. In its early years, favoured by an indulgent federal government, family medicine was a pampered child. In adolescence, the discipline revelled in its outsider status. Research represents the most significant rite of passage that family medicine has yet to face.[7] Entering early adulthood, family medicine is no longer protected but besieged, faced with the reality of surviving as a co-equal in the world of academic medicine. The question in many minds at the moment is the following; How can we become one of them? How can we prove we have grown up? Again, for some, research may be a way of providing answers to these questions.

REALNESS, LEGITIMACY, AND BELONGING

Family medicine has a long history of periodically questioning its own reality, its own legitimacy, the accusations of other medical specialties fuelled by the self-doubt generated within the field itself.[8] In a children's story called *The Velveteen Rabbit*,[9] the rabbit asks a stuffed compatriot, 'What is Real?' In family medicine, it is not clear that we have found a completely satisfying answer to that question.

There may be a temptation to see research as a medicinal salve for that sense of differentness, the magic which will miraculously transform all of us into being real. Instead of being relegated to the periphery of activity, we will at last be respected, part of the power elite. Research seems a small price to pay.

IMPLICIT MEANINGS OF RESEARCH FOR BEHAVIOURAL SCIENTISTS

The implicit meanings which a behavioural science faculty can bring to research are surprisingly similar to those of the specialty as a whole. For example, some behavioural scientists have at times expressed dissatisfaction with their somewhat curtailed, peripheral role in family medicine. Research may easily be seen as the vehicle through which we can prove 'seriousness of intent' to the physicians who hire us, the vehicle through which we can finally prove our usefulness and high purpose. For behavioural scientists, too, research in family medicine may represent a rite of passage, in this case from being viewed as intriguing, but ultimately insignificant members of the clan, to individuals with co-equal status. Finally, for behavioural scientists who increasingly may lack a sense of belonging, a sense of legitimacy and credibility in family medicine, research may represent a way to carve out a secure and esteemed position.

One might well ask: What does it matter whether our research efforts are driven by pursuit of knowledge or by the desire to be approved, to be taken seriously, to belong? (see fig. 1). It matters a great deal, and we would do well to carefully and wisely consider which of the many implicit meanings and motivations attached to research we wish to validate.

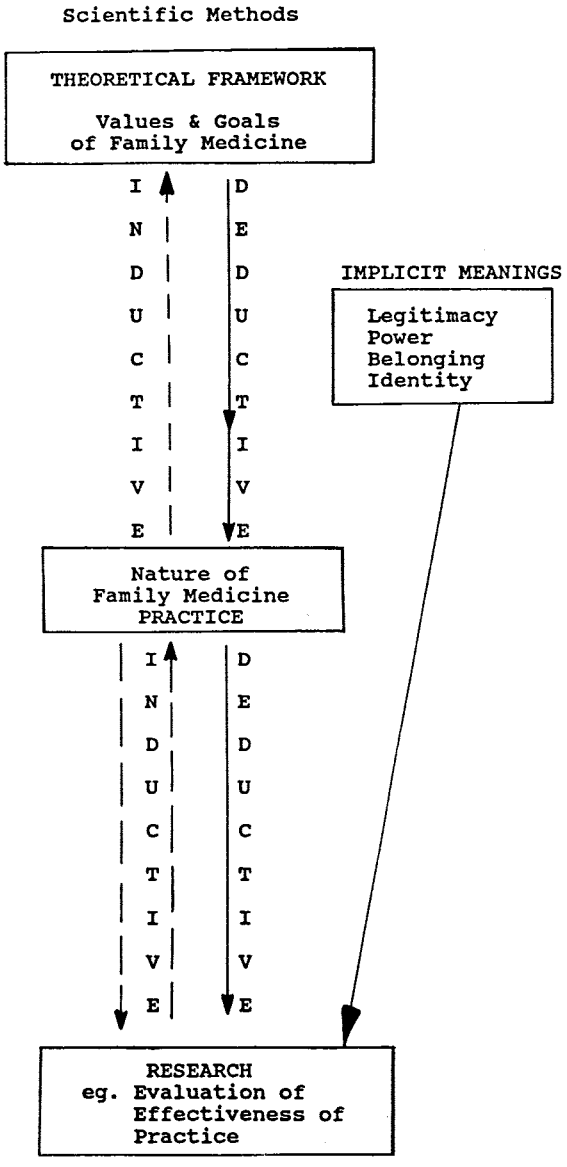

FIGURE 1 *Scientific methods*

FOCUS ON ENDS

Of course, motivations are always mixed, and mixed motivations may certainly produce high-quality research. Also, the academic system itself has many built-in safeguards guaranteeing the quality of research produced. Thus, the following comments are considering worst case scenarios and are clearly exaggerated to facilitate easier recognition.

Responding to the imperative of implicit meanings, some research in family medicine may run the risk of being driven from the outside-in; i.e., from a need to respond to the pressures and expectations of the larger academic medicine establishment.

All too easily, when we, as individual investigators and as a field, seek to gratify certain pyschological and emotional needs through the execution of research, we run the risk of succumbing to the lure of the product/process dilemma. In this situation, research is often undertaken with insufficient preparation, the result of deficit motivation. Tangible, but superficial criteria may become the sole measure of contribution: first authorship, prestige of journal, length of paper, complexity and sophistication of data analysis, number of data-based publications. In satisfying these requirements, it is easy to lose sight of the larger, more timeless criteria which one hopes ultimately inform research driven from the inside-out: for example, careful formulation of the theoretical framework of the research to be conducted, reflection on the values motivating it, contemplation of the awe and wonder inspiring it.[10]

OVER-RIDING CONCERN WITH CONFORMITY

When one is responding to a compelling desire for acceptance, legitimacy, and credibility, one wishes to avoid deviance in the negative. Unfortunately, this may result in avoidance of originality as well. Commenting on the limitations of a conventional wisdom approach to scientific inquiry, Alfred North Whitehead wrote, '(In this case), the sole criterion for judgment is that the new ideas shall look like the old ones'.[11] In approaching the question of research, there is a pyrrhic security for us in family medicine in thinking that the more we couch our ideas in well-worn terms, the more our new ideas resemble the old, the more acceptable the ideas will become, and the safer we will feel. While this approach may win us some passing nods of approval, ultimately it will lock family medicine into a model of research which is essentially limiting and self-defeating. If family medicine allows its research to be defined exclusively in terms of the goals, standards, and approaches of disciplines and fields which may have very different values and orientations, it will never achieve the recognition for which it longs, and will in fact produce, as have other disciplines, a great deal of research which is uninspired and pedestrian. At this developmental moment in the life cycle of family medicine, when many of the pressures of maturity are encouraging us towards academic conservatism and conformity, we must not lose sight of the value of creativity and risk-taking in generating the scientific process.

RIGOR OVER RELEVANCE

Urie Bronfenbrenner, the renowned developmental psychologist, wrote of his own field of specialty, 'We risk being caught between a rock and a soft place. The rock is rigor, and the soft place is relevance . . . The emphasis on rigor has led to experiments that are elegantly designed but often limited in scope . . .' He continued to describe developmental psychology as 'the science of the strange behavior of children in strange situations with strange adults for the briefest possible periods of time'.[12] Do we want it said of family medicine that it is the science of strange patients in strange situations with strange physicians for the briefest possible periods of time?

When methodologies are chosen for their impressiveness, rather than their relevance, multiple difficulties ensue. As JC Gibbs has observed of educational research, 'The pursuit of certainty to the detriment of authenticity has resulted in the lopsided prevalence of method over meaning'.[13] We have an opportunity in family medicine to make other choices, but unless we learn to make explicit and understand the forces fueling our research behaviour, we will not make these choices. As clinicians and practitioners, we must remember that it is sometimes preferable to choose relevance over statistical significance. Thus, I am suggesting that we must not only walk through doors opened to us by other established disciplines, but we must also open a few doors on our own. Three such doors will be considered.

QUALITATIVE RESEARCH

A case in point[14–16] is the potential role for naturalistic investigation in family medicine. Naturalistic inquiry refers to ethnographic, phenomenological research which emphasizes qualitative rather than quantitative data, and is concerned with accurate understanding of phenomena as well as verification of hypotheses.[17] Biomedical research, for example, is reductionistic, rather than naturalistic. Social science research, with its complex statistical modelling, emphasizes hypothetico-deductive logic, places a high value on causal inferences, and is best expressed in well-controlled, short-term, experimental studies.[18] These approaches rely on a technical–rational, objectivist framework for understanding reality and have little patience for investigation based on more relative and constructivist premises.

Viewed from the outside in, therefore, naturalistic inquiry is somewhat of a research stepchild. However, as Kuzel, Engel, Candib and others have pointed out, an inductive examination of the philosophic and value underpinnings of family medicine reveals many commonalities with the naturalistic method.[19,20] Qualitative research aims at discovering the meanings

of social phenomena as experienced by the actors themselves, and thus is ideally suited to family medicine because of its essential focus on the meanings patients place on illness events in relationship to themselves and their environments. The naturalistic approach emphasizes understanding rather than explanation, relationships rather than causality, processes rather than content. This description is not unlike at least certain dimensions of the practice of family medicine.

Family medicine may perhaps best be understood not as a reductionistic science, to which one can continually apply Occam's razor for cleaner and cleaner results; but rather as an ecological science, in which, as the well-known ecologist Barry Commoner has observed, 'Everything is connected to everything else.' Candib's article rightly realizes that the clinical experience of family medicine is based on what has been referred to as 'connected knowing,'[21] a way of apprehending reality which emphasizes issues of context, longevity, believability, and empathy. Research derived from the logico-scientific model may not always do justice to these values; eg., to the uniqueness of each physician–patient encounter, or to the inherent interrelatedness of observer (physician) and subject (patient). Instead, family medicine research may need to pay more attention to individual case studies and n of 1 designs, which seek to analyse the contextual diversity, rather than homogeneity, of family medicine practice; to studies which focus on small numbers of subjects studied longitudinally rather than cross-sectionally; and to studies in which the scientist-physician is not isolated and separate from but empathic with and connected to the subject-patient.

Investigation which cannot be statistically quantified, or in which statistical relationships do not hold paramount importance, can nonetheless be approached in a rigorous and responsible manner if we take the time to master the rules of inquiry which govern this particular method. We should not be deterred by the implicit motivations discussed earlier, but should evaluate such an approach on the basis of its utility and relevance to family medicine. Studies which are observational and descriptive in nature may be seen not only as means to more rigorous, more scientific, and more statistical ends, but can be viewed as the most appropriate modality for capturing certain intangible, ephemeral, but essential qualities which characterize the specialty. For example, it has frequently been argued that the practice of family medicine is somehow different from primary care internal medicine. How to measure or even identify this difference? Qualitative approaches may be best suited to tapping the subtle but significant nuances which exist in these situations for both patients and physicians.

THE ROLE OF THE BEHAVIOURAL SCIENTIST IN RESEARCH

Family medicine is unique as a medical specialty in that certain aspects of its essence have been defined and explored as much by non-physicians as by physicians. This very special relationship opens up new vistas in the research realm, and suggests new possibilities and a new intimacy to the concept of collaborative research. We run the risk, however, of again relying exclusively on older, more traditional models of research. In these, research is viewed as a highly specialized function performed by experts who do nothing else; and collaborative research is conceived of as a very discrete and limited interface based on specific skills of the individual collaborators.

Family medicine has at times turned to PhDs with strong methodological backgrounds to 'do research,' whatever that might mean, and in some respects has expected these individuals to provide the research justification for the specialty. Eager to carve a niche in the world of medicine, behavioural scientists may too hastily assume that we can apply our skills and ideas wholesale to our adoptive specialty. This 'quick-fix' approach courts disaster. It absolves the practitioners of the specialty from the responsibility for generating meaningful research questions and it encourages the behavioural scientist to regard family medicine simply as a subset of his or her discipline of training. Working in isolation, the behavioural science specialist, no matter how well-intentioned or well-trained, will continue to have great difficulty in adequately identifying and articulating the core research questions of another specialty. The attempt to do so, if left unchecked, may lead to a body of research which, although legitimate methodologically, progressively decreases in relevance to the specialty of which it is nominally a part.

In family medicine, we also have the opportunity to extend ourselves far beyond traditional models of collaborative research. For example, in the case of engineers and physicists, the practitioner independently generates the research problems, and then seeks expert advice on specific theoretical or methodological questions. Collaboration in family medicine, on the other hand, has the potential to be deeper and richer, more mutual and involving, because the field contains on an ongoing basis professionals with different expertise and world views, but who share certain common values and perceptions, and who work side by side to explore and refine ideas and concepts that have not yet been fully articulated.

At the same time we must recognize that it is not easy for two disciplines to truly understand and communicate with each other. Creating an environment in which authentically collaborative research can occur requires time and trust. It also means a willingness to focus on difficult questions such as how to value and recognize the different contributions physician and behavioural scientist may make to a given research endeavour; and how to ensure that the relationship between the two disciplines remains collaborative and mutual, rather than unilateral and subordinate. All this requires a process of dialogue and exploration that is not fully in place. Again, we must resist the

temptation to allow our unconscious needs and longings to rush us past what is one of the most important and exciting phases of research development. It is quite possible that the careful and systematic development of this collaborative process might generate a few valuable papers in itself.

RESEARCHER/TEACHER/CLINICIAN

Another open door which is in danger of being prematurely shut is to explore methodologically family medicine's interest in combining scientific research and clinical practice (and at times teaching) in the person of one individual. This approach has been viewed with scorn by specialties with more established research traditions. However, their contempt derives from a dualistic assumption about the nature of science and the nature of practice, one which posits these in an essentially antithetical relationship. This assumption has been challenged from several directions.

George F. Engel, for one, has suggested a model in which clinical practice itself becomes a rigorously controlled, carefully designed form of research.[22] Engel attacks what he calls the antiquated 17th century view of science, which attempts to isolate the observer from the phenomenon under investigation. He argues that the clinical interview should be understood as a scientific enterprise just as much as any laboratory trial. Engels makes the provocative claim that science is relational as well as observational, and points out that empathy and active listening skills are not only humane practices, but are also skillful strategies for eliciting the most complete and reliable data base from the patient.

One of the implications of these assertions is the viability of practice based research, perhaps best exemplified in Huygen's classic work *The Medical Life History of Families*. In this, Huygen demonstrates that his clinical involvement with the patients he has studied, far from being a methodological liability, provides an essential context for interpretation of the findings.[23] It is also true that such practice-based research provides investigators with limitless opportunities for natural replication.

Lucy Candib has argued convincingly that the disturbing trend of practitioners who do not publish and researchers who do not practice has resulted from a fundamental alienation of means from ends, the means in this case being traditional research methodologies, and the ends being the actual practice of family medicine. She believes that the trend toward specialization of research functions, and the separation of clinician and researcher can only be reversed when there is room for research methods which accurately reflect the phenomenology of practice. In this view, the close identification of researcher and practitioner, so problematic in other fields, is in fact dictated by the ecological, interwoven nature of the subject matter of family medicine. Thus, from the interior perspective of family medicine itself, the combination of clinician/teacher/researcher reflects surprisingly well the biopsychosocial model in which the discipline is grounded. Clearly, it is an approach to research fraught with complexities and complications, but one which accurately mirrors certain core dimensions, assumptions and values of family medicine.

CONCLUSION

What then must we do, to avoid some of the pitfalls inherent in an unconsciously driven pursuit of research? There are several things to keep in mind which may help us in our efforts to produce a meaningful and significant body of research.

Focus on Beginnings

Research in family medicine is a relatively new endeavour, and we should not be afraid to admit as much. Indeed, the freshness and newness of beginning can provide us with many opportunities. It is too early, for example, to insist that as a specialty, we have moved beyond case studies and descriptive reports. On the contrary, we need more, not less focus on the 'toward what' of research in family medicine. As Albert Einstein observed,[24] 'The scientific method can teach us nothing else beyond how facts are related to, and conditioned by, each other. Knowledge of what is does not open the door directly to what should be. Objective knowledge provides us with powerful instruments for the achievement of certain ends, but the ultimate goal itself and the longing to reach it must come from another source.' In family medicine, we need to continue the process of reflecting on the goals and values which family medicine pursues, so that this context can inform approaches to research, and help us in the formulation and creation of research concepts.

The Nature of Family Medicine Research

Research in family medicine does not have to be a static body of preordained, pre-existing knowledge, waiting to be mastered. Rather, it may be understood as an emergent process grounded in the search for the unique truths of family medicine, a process which is constantly evolving and changing in a dynamic interchange between a range of methodologies and the specialty they serve.

Although we normally regard science as the study, in Martin Buber's terms, of I–It relationships, other models are possible. John Dewey, in his general paradigm of problematical inquiry, speaks of being willing to struggle with the problem under investigation, trying it out, 'living with it'.[25] He comes astonishingly close to describing not an I–It, but an I–Thou relationship[26] between researcher and subject matter, a dynamic, involving, passionate process, inspired by awe and wonder, whose goal is greater knowing and greater understanding. These criteria form a context for investigation that cannot be measured by amount of papers produced, or number of analyses run.

Ultimately, it is the nature and vision of family medicine itself that afford us an opportunity to keep our research both meaningful and relevant.

Method vs. Meaning

Of course, family medicine should understand and benefit from the research approaches and methodologies of other disciplines. The crux of the matter is not methodological, but attitudinal. It is not a question of right or wrong approaches, but the philosophical and contextual attitudes with which family medicine investigators approach their science. A family physician once described a successful family physician as one who has 'crossed the barrier between practicing medicine and practicing family medicine'. I would suggest that a successful researcher in family medicine will be one who has crossed the barrier between conducting research and conducting family medicine research. In order to accomplish this, it is crucial to remain vigorously question-oriented, rather than method-oriented, and to be motivated by a commitment of integrity toward the goals and values of the specialty, rather than the need to prove oneself in the eyes of the larger medical world.

Being Real

Perhaps in the end it comes down to the Velveteen Rabbit's poignant query about reality. That great scientist, and master of naturalistic observation, the Skin Horse, another character from the same children's story, says, 'Real isn't how you are made. It's a thing that happens to you. You become. It takes a long time.' And he adds that sometimes it can hurt. In the realm of research, family medicine is still struggling to feel real. To the extent that we are driven by some of the symbolic meanings discussed earlier, perhaps we are not going about our search for research reality altogether in the right way. We need to be guided more by the Skin Horse's advice: Be patient with the time-consuming process of producing our own research reality; allow our own standards and values to be continuously emergent and relevant; be willing to accept the pain of censure or misunderstanding. Although we might become a bit battered and worn in this process, we would almost certainly begin to feel more real.

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