Research Notes

WHY RESEARCH? WHAT RESEARCH?

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Introduction

This article is the first of a series on research methodology aimed at helping those in primary care who are planning to do research for the first time. The term "primary care" will be used in this article to include general practice, family practice and the specialist discipline of family medicine.

What is research?

Research can be defined as "organized curiosity" or a process to find answers to questions. A more complete definition is a careful systematic study to discover new information and making it public.

Aim of research

The aim is to add to existing knowledge and advance understanding. Research helps to shape and guide academic and clinical disciplines with the ultimate objective of providing better patient care.

Types of research

Research can be pure or applied to real situations, problems or issues. It can be further divided as in Tables 1 and 2.[1,2] Details, including definitions of the various research designs listed, will be discussed in another article.

Brief history of primary care research

Individual primary care practitioners often tested their research interests in their community.[3] Amongst famous primary care researchers were Jenner who identified the etiology of smallpox and contributed to its eradication in the 18th century. Finlay, in the 19th century, discovered that yellow fever was transmitted by mosquitoes. He also researched into the causes of typhoid fever. Mackenzie researched the epidemiology of heart disease while practicing in a disadvantaged neighbourhood. He invented the polygraph, the origin of the electrocardiograph. In the early 20th century, Pickles provided rich data into the morbidity and mortality of a defined community and identified the spread of infectious hepatitis.

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When clinical science research came to the forefront in the 20th century, primary care lost ground[3]. However the development of academic primary care and primary care research networks have facilitated research in primary care.[4] In addition qualitative and multidisciplinary research into areas such as doctor-patient communication have emerged. The formation of a primary care research group locally[5] provides a platform for local researchers to develop their research ideas and for collaborative research. There is also evidence of an increasing number of primary care articles published locally.[6]

Why research in primary care?

Research in primary care contributes to the understanding of the origin and natural history of disease and identifies factors that enable health, determinants of seeking and receiving health. It provides evidence to support the provision of primary care services and improves the quality and effectiveness (including cost effectiveness) of care.[7]

Findings in specialist research may not be applicable to primary care as many problems in primary care present in early stages where the prevalence of serious illness is low, many problems are self limiting, and co-morbid conditions are often present. Hence decision making is different from secondary care settings. Also low probabilities reduce the predictive value of many diagnostic tests in primary care. Existing randomized control trials are often of little use to primary care as patients used in the trials have well defined illnesses and meet specific inclusion / exclusion criteria which most primary care patients may not fit.[8]

Primary care doctors also want answers to questions asked in the course of their clinical practice. As Socrates said "An unexamined life is not worth living."

Primary care doctors role in research

A primary care doctor can be an *informed consumer*. This requires critical appraisal skills to answer whether the research done is valid and applicable to the primary care setting. He / she can also be a

Table 1: Types of Research

Primary (obtain your own data)			Secondary (study data published by others)
Quantitative (involve numbers e.g. how many, how often)		Qualitative (feelings, beliefs, behaviour)	Meta-analysis
Non experimental Observational/ descriptive	Experimental Interventional or Clinical Trials	In depth interviews, Focus group, Ethnographic studies, Action research	

Table 2: Observational Studies

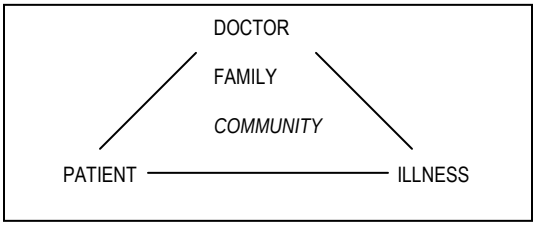
	Cohort/ Prospective	Case Control/ Retrospective	Cross Sectional
Exploratory			
Descriptive			
Analytical			

contributor involved in data collection and in collaboration with other primary care doctors in group projects organized by practiced based research networks / academic institutions. Finally he / she can be a *principal investigator* involved in original research or practice audit.

Domains of research in primary care

Domains of research in primary care have included studying the doctor patient relationship, the consultation and diagnostic process, the natural history of common illnesses, the integration of medical, psychological, social and behavioural sciences with research on patient centred outcomes and the alternative models of health care, health needs of disadvantaged groups and preventive care.[9]

Areas of research in primary care can also be derived from a simple framework used by Howie (refer Figure 1).[10]



A beginner in primary care research, can start by looking within his/her own practice into areas of his/her interest. There are vast and rich untapped data in the practice medical records such as patients' demographic and morbidity data and management data which can form the first research project, for example, looking at the morbidity patterns of elderly patients[11] or studying the quality of diabetic care provided.[12] Other areas may include preventive care and patient education.

Research Process

The research process is defined as a planned structured approach to inquiry or an accepted systematic logical way of doing research.[1] There is no perfect way or single model. It consists of a broadly accepted series of stages which include the following:

- Identify topic which should be relevant, interesting, researchable, ethically justifiable and in a priority area.
- Review literature on the topic identified to get background information. If research has already been done and published, it may not be worth repeating unless there is a new aspect to it.
- Identify research question / objectives.
- Choose research design and data collection methods
- Carry out detailed planning including writing a research proposal for approval, including ethical approval
- Conduct pilot study
- Seek funding
- Conduct actual study – collect data
- Analyse data
- Write up for presentation and publication

The above steps will be discussed in detail in subsequent articles by other writers.

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