

Quality Research: Improving Patients and Health System Outcomes

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Introduction

Health needs and challenges have dramatically changed in the past few decades. However healthcare professionals and the healthcare systems have changed at a much slower pace and often are not responsive enough to the current health needs of the population. In the past, health systems were more concerned with mortality. With the rapid decline in mortality, problems that cause significant morbidity have emerged as more important. Many of the health challenges for our time are largely related to lifestyle, genetic disorders or behavioural problems. Research into these areas is both challenging and requires a health systems approach.

Summary of the Development of Health Systems Research (HSR) in Malaysia

Health Systems Research (HSR) in Malaysia started as a programme in the mid 1980s, expanded into an institute (the Institute for Health Systems Research), one of the National Institutes of Health. HSR uses basic research methodology and frequently applies in a community interventional approach. It involves doing research to solve current concerns, with a focus on improving health systems, patient care and outcomes. It requires substantive stakeholder and policy maker involvement throughout the process, with emphasis on collaborative teams, dialogues and disseminating of evidence to facilitate knowledge translation.

Why should Pharmacists do Research?

There are many reasons for conducting research. Some of these involve meeting training requirements, "requests" of managers, academic or career advancement, etc. However, the primary focus of research must be to improve care by changing health system outcomes.

Pharmacists are uniquely gifted to do research; it is hardwired into their undergraduate training and outlook. In addition there is a strong commitment by the Pharmacy Division of MOH to encourage all pharmacists to do research as a routine part of their job.

Pharmacists' advantage in the research arena, they:

1. Are able to adapt to research and its methods fast, in part due to their undergraduate training curriculum and training to multitask.
2. Serve as a link/bridge for the patient's world from home to clinic to ward.
3. Are the last checkpoint in the medication use cycle; hence they have an important role in medication safety.
4. Understand the pharmacokinetics and pharmacodynamics in clinical trials/early phase trials.

Reasons for Conducting Research

- To meet training requirements
- To meet "requests" of managers
- For academic advancement
- For career advancement
- For pride/personal glory
- For research sake/a way of life
- For disease entity/problems
- For the client's needs

What Research should Pharmacists do?

There is a narrow perspective of thinking that pharmacists should only be involved in doing research that involves drugs. Hence most research by pharmacists in Malaysia is focused on this narrow area; involving some aspect of drug dynamics, clinician and patient abuse and compliance to drug guidelines, knowledge on a particular drug, pharmacist intervention in improving compliance, etc. In addition, many of these studies are repeated many times at local

Research usually done by Pharmacists:

- The impact of pharmacist intervention in, the effect of pharmacist counselling.....
- The effectiveness of MTAC...Drug XYZ (Gentamicin/Warfarin) levels
- Doctor's compliance to antibiotic use/antibiotic prescribing pattern
- Patients compliance to medication XYZ
- Patient's knowledge on a particular drug or condition
- Adverse events related studies without intervention
- Epidemiology of medication errors in a single centre
- Medication discrepancy ...

level, are often under-powered and ultimately result in little impact on healthcare and may even contribute to waste of healthcare resources.

Pharmacists, whose role is to provide pharmaceutical care to patients, should conduct research that improves the health system and health services that will ultimately benefit the patients. There are many areas of pharmacy-related research that pharmacists can delve into: pharmacy practice/clinical pharmacy, pharmacy education (for those in academia), pharmacology/physiology/toxicology, pharmaceutical technology (innovative research), social pharmacy, pharmaco-economics, pharmaco-epidemiology & drug safety etc. In addition to these pharmacy-related areas, pharmacists should venture into niche areas and work with other healthcare professionals to conduct larger scale studies involving multidisciplinary research areas, so that a more comprehensive intervention can be conducted. (See list of research suggestions below).

What is Quality Research and how can it Improve Patients and Health System Outcomes?

Research is a means to an end. Doing it is to achieve some goal, either implicit or explicit. If the goal is not to improve health systems, then should one be surprised when one cannot improve care? Research done for purposes other than the principles of a Health Systems Research is unlikely to yield results other than what it was designed for. The objectives, hidden agenda and aim of the research affect the outcome in some way.

How then should one proceed? Proceed with the aim in mind, and all else should fall in place. In this case, the aim of research to continually change health services to be relevant and in tune with client needs.

First, design and plan the research as best you can, with lots of search and re-search thrown in. Then put it up to be thrashed, i.e. a good scientific review. Then redesign it. Again. All parts of the research is crucial, skimping on some phases will affect the impact on some way. A common pitfall: problem identification and prioritization. A vital step that requires much thinking and deliberation, this phase is conversely usually invested with minimal time, and approached in a sometimes rushed or slapdash fashion. Another common trap: inadequate search and re-searching of the issue at hand, ending with repeated projects; just more of the same. No amount of copy paste manoeuvres can camouflage the lack of scientific rigour; empirical evidence without adequate dissemination and conversion to knowledge dooms the product to gather dust on shelves. Therefore, strategies to promote utilisation of the research needs to be incorporated right from the beginning.

What Barriers do Pharmacists Face in the Conduct of Research?

There are many obstacles for pharmacists who want to be recognised as a valid member of a research team, especially those that aspires to do quality research that improves patient and health system outcomes. Some will attempt to limit a pharmacist's contribution; others may attempt to "use" them.

Key obstacles include:

1. Inadequate support from managers (immediate superior)
There is a common managerial perception that for the pharmacist, "pharmacy job comes first, research comes second". Hence, research is not encouraged or supported by many. While this may be clinically correct (for patients' benefit), in the current climate of increased workforce this reason is no longer so tenable. It does not recognise the genuine desire and ability of some pharmacists who wish to explore research as an important part of their career, either part-time or full-time.
2. Scope of research limited by work environment
Often in MOH research by pharmacist was done to meet KPIs. With this aim, time is often inadequate to conduct large studies, or for a longer duration. Each trainee pharmacist (provisionally registered pharmacist or PRP) must complete a research project at the end of the 1-year pupillage. However, the 1 year includes training in all departments, leaving very limited time for research and its activities such as collecting data etc. Research conducted is often on own initiative, working after office hours, or during break time. The results are often limited in quality.

3. Pharmacists, their own enemies
Many pharmacists 'enjoy' doing research related to their field but seldom think out of the box. They wish to solve problems in their field, using research as the tool. They seldom think of collaborating with other professions to conduct better studies, or studies extending beyond their job scope, unless approached.
4. "Abuse" by doctors
Pharmacists are often taken advantage of by clinicians to do research for them, and they run into the risk of having their good ideas hijacked, or being used as data collectors (Armour, et al, Pharmacy Practice 2007). This is very prevalent in clinical trials.

There is a 'price to pay' for pharmacists to become an equal partner in the healthcare profession, including in the area of research. There will be a need for champions and trail blazers from within and without to support the profession.

Moving Forward – Some Suggestions

(Thinking Outside the Box)

For pharmacist to move forward, they must think and do research outside their narrow confines, 'outside the box'. In essence, stop thinking like 'just a pharmacist'. Some key suggestions for change include:

1. Don't worry about your KPIs and what others in the hierarchical structure will think. Become patient and system-centered.
2. Target areas with real health needs. Take time to identify and conduct meaningful research projects. This requires taking time to explore and ask interesting questions with others. Remember that "*developing a good research question is the most important part of the research process*" (Lipowski, Am J Health-Syst Pharm, 2008).
3. Start from the perspective of the decision-makers even before devising the questions. This means "*getting practice into research*". Consider doing research that impacts national programmes. (Walley, Khan, Shah, Witter, Wei, WHO Bulletin, 2007).
4. Have research partnership with meaningful colleagues, clinicians and policy makers. Have clear boundaries to protect you especially from managers or doctors who may opportunistically 'take over' your work. Choose your research partners carefully.
5. Do not stop when the research is completed; carry your research to policy. Be an advocate of your research to influence policy. Translate key findings into knowledge that can be used.

Note: In presenting this paper, some examples of pharmacist led or related research that has impacted patients' care and health system outcomes will be presented.

"...the ACCP is advocating for increased pharmacist participation in all types of clinical research, not just practice based research. It is clear that while we continue to use the term "pharmacy research", it carries no universally accepted meaning. Perhaps we also need to re-examine our approach to research as a profession. Instead of undertaking so-called "pharmacy research", we should develop a system of pharmacist-researchers and scientists and describe research as any research activity done by pharmacists, regardless of the topic. As health care professionals, pharmacists represent only one aspect of the complex and interdependent health care system. Focusing our energies and resources solely on studying the practice of pharmacy may or may not help in developing our practice, but it will likely add little to the entire health care system. Pharmacists must be involved in all aspects of health research, from basic laboratory investigations to population-based studies. Our unique set of skills and our focus will ensure that we have distinctive research topics."

American College of Clinical Pharmacy Position statement. Pharmacotherapy 2007

Meaningful Research Areas

(Research Areas that Pharmacists should consider Focusing on)

- Any area a doctor would consider – evaluation of any MOH programme (pharmacy related or otherwise), evaluation of any clinic or public health area (primary care is not well-researched)
- Principal investigators for pharmacotherapy research, clinical trials*
- A systematic review on many of the areas already explored by existent local studies
- Evaluation of, and mechanisms to improve systems for medication use – prescribing, dispensing, medication reconciliation (implementation of a regular system-smaller studies have shown their effectiveness in reducing discrepancies), extemporaneous drug preparations (safety, stability, etc.) etc., at primary, secondary or tertiary care
- Evaluation of existing drug purchase systems and drugs quality
- Impact of existing drug purchase systems on supply of drugs to MOH facilities (chronic limited supply of drugs)
- Role of, and abuse, at community pharmacies (limited research done in community settings)
- Harnessing patient empowerment for medication safety (especially medication education among geriatric patients and/or patients with limited literacy), adverse drug reactions reporting, per support for medication adherence
- Current systems for pharmacist training, both at undergraduate and during the provisionally registration period
- Exploring new methods to improve use, e.g. Validation of a new self-report adherence methods
- Effect of electronic prescribing on the quality of prescribing, errors, and responsiveness
- Statistical process control to analyse and glean knowledge from the legions of available data
- Lean strategies to reduce waste in healthcare—pharmaco-economics (a growing area)
- Impact of the electronic medical database or electronic prescribing on prescribing errors
- Quality use of medicines in various conditions (medication taking behaviour, drug utilisation, optimal dosing strategies, etc.)
- Diagnostic studies (comparing devices-sensitivity & specificity etc.)
- Pharmaco-epidemiology and drug safety (requires large scale studies but meaningful)

* American College of Clinical Pharmacy Position statement. Pharmacotherapy 2007 (see above)

Will Doctors Allow Pharmacists Roles in Research to Grow?

(The Perspective of Doctors towards Research Pharmacists)

A genuine concern is that doctors and health managers may not see the extended scope or role that pharmacist can play in research. To evaluate this perspective locally, the authors conducted a pilot survey of 30 clinicians and managers. Of the doctors approached, 17 (56.7%) responded. Those that responded were all MOH staff, had worked for 18.1 years (mean, SD=10.6), 52.9% were CRC staff, 64.7% Specialists, 76.5% active in research, and 82.4% had worked with a research pharmacist.

The results of their opinion showed that the majority were comfortable with pharmacists:

- Doing proposal/study design consultation (94.1%)
- Offering statistical consultation (88.2%)
- Being principle investigators of pharmacy research (94.1%) or multidisciplinary research (88.2%)
- Reviewing research of non-pharmacy projects (64.7%)

The doctors surveyed expected that research pharmacist roles would include:

- Early phase (I, II) trials (70.6%)
- Drug discovery & development (70.6%)
- All types of research (70.6%)

When asked about research as part of the pharmacy profession, 82.4% stated there was a place for pharmacist to be involved in research full time; 70.6% said as part of specialisation for pharmacists.

This initial survey suggests that some doctors are very supportive of the role of pharmacists in research and have no limits to their scope.

Conclusion

“A culture change is needed whereby pharmacists see research as a core part of their normal daily practice.” (Roberts, Kennington, The Pharmaceutical Journal 2010).

Pharmacists in Malaysia, especially those in MOH, have come to a crossroads. They are already heavily involved in research but need to take a step back to consolidate this activity by focusing on fewer, more relevant, health transforming areas. In addition there is need for MOH and senior pharmacy managers to encourage full-time and part-time involvement of pharmacists in research. A formal career pathway for pharmacists is required, as is needed for doctors.

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