More than coffee – a World Café to explore enablers of pharmacy practice research

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Authors contributions: This article is the reflections of the organisers of a world cafe event which the authors would like to distinguish as different to a formal systematic qualitative research study. The writing does not identify or compare the contributions of individual attendees. No ethical approval was sought to hold the world cafe. After the event, we contacted participants to make them aware that we were going to write up a reflection of the event for publication.
Abstract (word count 221)

BACKGROUND: Pharmacists are in demand now more than ever to provide high-quality expertise about the effectiveness, safety and use of medications. Amidst an increasingly complex and costly healthcare system, policy makers need robust evidence to justify public spending on pharmacy services. Research on the impact of existing and emerging pharmacy practices are required.

OBJECTIVE: To explore barriers and opportunities to enhance research among pharmacists in Ireland utilising a World Café methodology.

METHODS: A pharmacy research discussion day was held in November 2018, open to all pharmacists in Ireland. A World Café methodology was utilised as a mechanism to facilitate group discussions about pharmacy practice research.

RESULTS: Discussions with 63 attendees identified four themes and seventeen subthemes. The four themes were challenges undertaking research, research motivations, leadership, and training. Subthemes included robust evidence, clinical, economic and societal outcomes, alignment with national and international health system priorities, need for incentives from professional training bodies, competitive business model and embed within schools of pharmacy.

CONCLUSIONS: The most commonly discussed barriers inhibiting research were workload, technology limitations and financial considerations. Organisational leadership to prioritise and coordinate research efforts, training to build research capacity, building on existing examples of excellence and initiation of bottom up community-based research projects were identified in our study as opportunities to enhance pharmacist involvement in research and ultimately patient health outcomes.

Keywords: Pharmacy practice research, Leadership, Pharmacist research, World Café, Pharmacy research.
1. Introduction

The role of the patient-facing pharmacist in 2020 has shifted away from the preparation of various medicaments and their own nostrums to meet patient demand for high quality information about the effectiveness, safety and use of pharmaceuticals. Pharmaceuticals cost the health service in Ireland €2.8bn in 2017(1), a figure which has continued to rise over the last 5 years. In addition, adverse effects from medication are common, largely preventable and (sometimes) clinically harmful, and therefore medications and medication-related morbidity present an increasing cost burden on our health care system. This combined with shifts in population whereby people live longer with multimorbidity has resulted in the emergence of new fields of pharmacy practice, with a focus on: clinical therapeutics, evidence based medicine, pharmacoeconomics and patient care(2). Although there are many subspecialties within pharmacy, clinical roles that rely on these new skills make up the vast majority of pharmacist employment(3).

Canada, Australia, the United States of America and the United Kingdom (UK) have repositioned the pharmacist within their health systems, including the introduction of pharmacist prescribing, emerging opportunities in general practice (GP), and other advanced pharmacist practitioner roles(4–6). Ireland currently lags behind and career options for graduating pharmacists remain similar to those seen over a decade ago. This could perhaps be explained by the unclear leadership structure of pharmacy in Ireland. In contrast to the countries listed above, there are multiple organisations in Ireland who are involved in driving and creating pharmacy healthcare policy, with each representing different, diverse groups within the pharmacy profession. There is no clear unifying organisation to represent all pharmacists across traditional and non-traditional occupations.

In Ireland (and indeed globally), recent government policies are encouraging patient centred care, which presents an opportunity for pharmacists to contribute to enhanced care. However, for policy makers to justify spending public funds on the development of a service, robust evidence is required. Pharmacist involvement in health services research is needed to assess the feasibility and value of new pharmacy services and roles.

Robust research has often preceded practice development. Indeed, the unique perspective of the pharmacist in clinical medicine was perhaps first recognised in the early 1960s when Levy, Riegelman and others published a series of articles in journals such as the New England Journal of Medicine(7–11) which at that time, rarely (if ever) saw contributions from pharmacists(7–11). This work helped consolidate the impact of formulation on therapeutic efficacy, and indeed, the pharmacist as the expert on formulation. The concept of robust research has been illustrated previously(12–16) and will not be explored in this work.

Research activity of pharmacists has been investigated previously and time constraints and the risk averse nature of the profession are often cited to explain this lack of research activity(17,18). This work seeks to explore barriers and opportunities to enhance research among pharmacists in Ireland utilising a World Café methodology.
2. Methods

2.1. Setting and design

A Pharmacy Practice Research Discussion day was held in Dublin, Ireland in November 2018 to facilitate discussion of these issues. The event was organised by the authors in coordination with the staff of the Irish Institute of Pharmacy to explore barriers and opportunities to enhance research among pharmacists in Ireland. This event was advertised as an open invitation on the Irish Institute of Pharmacy newsletter which is distributed to every pharmacist in Ireland (in 2018, 6220 pharmacists). The event was free of charge for attendees and included panel discussions on health system requirements and the importance of practice based research, and brief (one minute) presentations from each attendee on their research interests. The final session of the day was a facilitated workshop on “How we can optimise our efforts” in relation to pharmacy practice research. This article describes the discussions from the workshop with the aim of encouraging further conversations about how to develop pharmacy research in Ireland.

The discussions during the facilitated workshop were conducted using a World Café approach (19). The World Café has emerged as a novel modality to stimulate collaborative research (19–22). This approach assumes that the experts are already in the room and encourages creative thinking to provide solutions to the questions posed (20). It was for this reason that this methodology was selected; enabling participants to explore complexity (within their own profession) through conversation as pharmacists often do in their daily practice. The attendees were asked to randomly mix around the room and were then asked to consider the first World Café question and again reshuffled before considering the next question. Three questions were devised to enable discussions which would identify key issues or priorities relating to pharmacy practice research (PPR) and to stimulate debate around how these might be addressed (box 1). Each group had between 5-8 members and was facilitated by one of the event’s organisers (identified at the beginning of the World Café) who documented the discussions and sought feedback from the attendees on their views regarding the topic of discussion. The world café session lasted approximately two hours.

| 1. What do we need from pharmacy practice research? |
| 2. What specific steps should we take to progress Irish Pharmacy Research? |
| 3. What is needed to enable the steps we’ve discussed in previous sessions? |

Box 1 – World Café questions

2.2. Data collection and analysis

Discussions from each group were captured in written format by a member of the research team and verbal feedback was also provided to wider audience from each group on each question, which was captured by video. The videos and written feedback were analysed to identify key themes.

All data was independently coded by three members of the research team by identifying comments from the videos and written responses. All attendees were aware that responses were being
recorded and could opt-out of this if they wished. This was determined at the beginning of the day. Video recordings were uploaded to a private (password protected) site to allow any participant who opted-in to view and reflect on the discussions of the day. The team compared and discussed their findings to generate a set of codes which were divided into emergent themes and subthemes using a constant comparative method. The themes were then presented to the research team, then revised and reconstructed iteratively until a final set of themes emerged.

2.3. Ethics statement
Due to the anonymised nature of the reflections herein, this work carries little to no risk to participants. No ethical approval was sought to hold the World Café. After the event, we contacted participants to make them aware that we were going to write up a reflection of the event for publication. The writing does not identify or compare the contributions of individual attendees and great care was taken to maintain the right of all participants to confidentiality, including secure data storage.

3. Results
3.1. Attendees
Of the 6220 pharmacists emailed, there were 63 attendees (1% participation rate) from a mixture of backgrounds including academia/research (n=41, 37%), community pharmacy (n=28, 25%), hospital pharmacy (n= 24, 22%), administrative (n=9, 8%) and other roles, including locum, teacher practitioner and superintendent pharmacist (n=9, 8%) (some selected more than one practice area). Attendees were notified after the event that the proceedings would be written up.

3.2. Themes
The three questions yielded 4 central themes: (1) challenges undertaking research, (2) research motivations, (3) leadership, coordination and prioritisation and (4) training and education with 17 subthemes across these categories summarised in table 1.

3.2.1. Challenges Undertaking Research
It was recognized that although many pharmacists are actively doing research, some attendees expressed the view that it may be conducted in an ad-hoc fashion and the work often remains unpublished. Attendees identified the need for robust data and expressed a desire to improve research quality. There was concern that collecting robust data would be an onerous task and such activity would not be possible within a busy pharmacy. Many expressed that the practice of pharmacy is a full-time job in itself and perhaps it is unreasonable to expect a pharmacist to perform his/her duties and conduct high-quality research to the standard required.

One group reflected, that increased collaboration between academia and practice based pharmacists could be a fruitful solution. This increased collaboration would also give practitioners an
opportunity to influence the pharmacy student curriculum and serve as role models for the latest phase of new graduates which could enable the sharing of important practical information, via mentorship.

One group suggested that research modules could be added to popular pharmacy dispensing software to facilitate data collection as part of routine daily practice. Further, pharmacists should be taught how to integrate data collection strategies into daily practice (i.e. coding prescriptions with a unique identifier) to facilitate research.

A key challenge to the pharmacy profession is that although research conducted may have benefits for patients and society, there are commercial realities within community pharmacy that must be considered. Attendees suggested pharmacists may be reticent to invest in research as it rarely produced commercial benefit and any innovations in practice could be adopted by competitors who had not contributed to these developments.

Across the groups there was a number of comments relating to a perceived lack of funding for PPR. It was felt that it is currently difficult to compete for funding particularly as medical and nursing colleagues have well established research cultures resulting from national and international frameworks coupled with strong links between academia and clinical practitioners.

3.2.2. Research motivations

Attendees discussed carrying out research to generate robust evidence on the process of care in a pharmacy setting with a specific focus on patient outcomes, harm reduction measurements, cost effectiveness, clinical effectiveness, patient safety and impacts on public health. It was noted that appropriate clinical, economic and societal outcomes were important in order to carry out meaningful research. Allied to that, many people expressed a desire to focus on the unique contributions of pharmacists to patient care when designing research projects.

Attendees identified the need to ensure research activities are of a high quality. The PINCER cluster randomised trial(23) of a pharmacist interventions was used as an example of the type of robust research design to aim for. It was felt that research needs to have measurable benefits and interventions that were scalable would be important. Replicating studies at multiple pharmacy sites was also seen as important to generate robust evidence for interventions.

The benefits of taking a multidisciplinary approach to research was discussed and attendees were keen to engage with doctors, practice nurses, physicians’ associates and pharmacy technicians. Furthermore, it would be paramount to extend these collaborations to include methodological experts, the advantages of which has been studied in great detail in the literature(24–27). Attendees also felt that research offered an opportunity to explore the value of pharmacists in healthcare delivery. In particular, they felt that research would allow pharmacists to document innovative practices, explore unanswered questions about the profession and communicate the value of pharmacists. The link between pride and empowerment of pharmacists and the need to document professional activities via research publications was also highlighted.
Pharmacy-led research in community or hospital settings was also seen as a way to promote best practice, which in turn may benefit the overall standard of pharmacy practice. Attendees observed how meaningful research is facilitating the development of specialisations within pharmacy e.g. prescriber role in some countries and emerging specialisations in hospital setting.

The communication of research to non-academic audience via social media was seen as an important stage of research. The importance of communicating the benefits of research to pharmacy practitioners in the community was seen as a way to encourage increased participation of practitioners in research. It was felt that researchers could also work to improve how they communicate the benefits of research to the wider profession and the public.

Attendees discussed the need to have research that leads to actionable outputs that feed into the Irish healthcare system. This led to a discussion about the value of two-way communication between research and policy. Research was seen as both informing policy and also implementing new policies and emerging health system priorities.

### 3.2.3. Leadership, coordination and prioritization

The importance of a coordinated and cohesive approach for developing PPR in order to yield the greatest potential benefit was discussed. Identifying areas of greatest need would be helpful so that resources could be targeted. This could be achieved by identifying three or four tangible goals to produce actionable outputs that could contribute to or form the basis for policy. It was highlighted that there should be an awareness and understanding of policies and priorities (nationally and internationally) and linkage of research to these so that projects could feed into the bigger picture and drive the pharmacy policy agenda. A means of achieving this would be increasing pharmacist involvement in policy working groups and clinical programmes.

It was recognised that organisations may pursue different and potentially opposing or divergent goals (e.g. a pharmacy business may wish to develop a revenue generating service while the government may wish to reduce costs), allocating tasks, roles and responsibilities, and putting structures in place for parties to come together to identify mutual goals and activities were mentioned as key to maximising research impact, and ensuring sustainability. A key structure to coordinate this would be some type of leadership body. While existing organisations, such as the Irish Institute of Pharmacy, Affiliation for Pharmacy Practice Experiential Learning (APPEL), and schools of pharmacy were identified as having a role, a specific body, such as a College of Pharmacy Practice or Faculty of Medicines Management was proposed. Such a body could provide direction, develop an agenda, support coordination and prioritisation of research activities, and ensure good governance. This body could also have a role in providing or facilitating training and accrediting sites and pharmacists as “research ready”. One question to be resolved was how such a body would be funded, and by whom, and whether there was a will within the profession as a whole to move this forward.
3.2.4. Training and education

Attendees discussed capacity-building and skills in relation to research. The willingness of pharmacists in practice, e.g. community and hospital settings, to contribute to practice research was highlighted, but that a lack of experience and knowledge of research may hinder this involvement. It was suggested this could be addressed by standards, in terms of research conduct, and that there was a need for training to develop skills to facilitate involvement. A further need identified was educating the profession regarding the benefits of research and research involvement, in order to drive participation.

Training and skills development at a range of career levels (undergraduate, postgraduate, and continuing education) and using different modes (how-to guides, online modules, virtual learning environments, workshops, training fellowships, and higher degrees) were discussed. A number of existing training resources were identified which could be leveraged to address this need. As well as identifying what existing tools are available, it was felt that it is also important to identify what is lacking, in terms of resources, and in terms of the skill set of pharmacists generally. It was suggested that a repository of training resources could be hosted by the Irish Institute of Pharmacy.

For the practicing pharmacist who wants to be involved, training should address how to do research, and could demystify research conduct (for example, what a principal investigator is, data management and governance, and other aspects of good research practice). This could feed into the development of research-ready pharmacy practice sites and pharmacists, and training could form the basis of accreditation of these sites, much like what occurs with training placement providers for pharmacy students. The importance of ensuring that front-line pharmacists are aware of research ethics such as obtaining consent and ensuring patient confidentiality and access to ethics committees or formation of an additional ethics committee was suggested.

It was felt that research training and skills development should start with students as well as recent graduates. Attendees highlighted that while the undergraduate curriculum does address research, it is important for this to continue in a pragmatic way i.e. including student involvement and experience in research and the development practical skills. While undergraduate training in research provides a basis, alignment between undergraduate, postgraduate, and continuing education was highlighted as important.

Attendees discussed the benefits of cooperation and collaboration, particularly engagement between students, universities, student placement providers, and pharmacists more broadly. For example, this could involve multi-site research studies, practicing pharmacists inputting on the topics for student research projects, and matching students and placement providers with common research interests to produce more meaningful research. The importance of cooperation with other healthcare professionals in research was also highlighted, and that a major facilitator of this was inter-professional education at undergraduate level. This helps to develop a respect and understanding for the different...
roles and skills across professions which would provide a solid foundation for collaborative inter-
professional work and research.

4. Discussion

The most commonly discussed barriers inhibiting research were workload, technology limitations and 
financial considerations. The potential of organisational leadership to prioritise and coordinate 
research efforts and facilitate training to build research capacity was also highlighted. This could be 
realised by building on existing examples of excellence in academic pharmacy and initiation of bottom 
up community-based research projects, as well as collaborations with well-established research 
networks with methodological expertise to enhance pharmacist involvement in research and ultimately 
patient health outcomes.

4.1. Strengths and limitations

The use the World Café methodology is a novel and highly effective method to provide evidence to 
stimulate national and international conversation on this important topic. While the invitation to this 
event was circulated to all registered pharmacists, academic and research roles were over-
represented among attendees, and we acknowledge the likely implicit research positive bias. The 
views of non-research active pharmacists should be sought. The attendees were homogenous in being 
limited to pharmacists, and neither other pharmacy-based roles (i.e. pharmacy technicians) or other 
health and social care professions were represented. While the focus on Ireland allowed the unique 
challenges within this health system to be examined, the discussions did not consider the development 
of pharmacy practice research internationally.

4.2. Addressing challenges in undertaking research

The most commonly discussed barriers inhibiting practice research were workload, Information 
Communication Technology (ICT) and financial considerations. Although these barriers have been 
identified previously for pharmacists(28–30) and other healthcare professionals(31) these studies 
identified that the establishment of research networks which enable collaborations between academia 
and clinicians could support pharmacist participation. Further, one study suggested that when 
pharmacists believe a project has intrinsic value they tend to be more willing to invest time, even in 
the absence of financial compensation(32). Participants at the World Café highlighted that economic 
justification of research is often necessary in the context of private businesses, particularly for 
community pharmacies.

As healthcare is currently undergoing a digital transformation(33), pharmacists recognised the 
essential role ICT should play in the development of pharmacy practice research. A comprehensive 
publication by Beck et al. explores the pathways to bridge the gap between healthcare and research
using ICT(34). Specifically, incorporating data collection methods into our current ICT systems to generate data for research.

4.3. Promoting engagement in research

It is evident that there is a clear appetite amongst pharmacists to conduct pharmacy practice research. The benefit of the pharmaceutical perspective has been illustrated in geriatrics(35,36), polypharmacy and deprescribing(35–37) and again across a range of disease states(38,39). This work has coincided with the firm establishment of the pharmacist within teams tackling these conditions. In addition to helping form professional identity(40), collaborative, multidisciplinary research has enabled practice based pharmacists to showcase their contributions to the health system(41–43).

Recent work in other jurisdictions has explored how to support pharmacists taking the first steps towards research activity(44,45) and the Royal Pharmaceutical Society have outlined their idea of what ‘research ready’ means(46). In addition, the co-production model of delivering and improving public services through partnerships between the people using the services, clinicians and researchers strongly promotes the involvement of pharmacists in research as stakeholders(47). Under this model, the commitment of pharmacists to upskill in research methodology is less important and the emphasis is on contributing from their experience as practitioners. It is imperative that we encourage this intrinsic motivation and create opportunities for pharmacists to come together with other healthcare disciplines in frontline patient facing settings to undertake research.

4.4. Leadership, coordination and prioritisation

Strong leadership been linked to research success(48–50). Our discussions on the day focused on leadership at an organisational level. Similarly, a recent paper by Dolovich et al. setting goals for the development of the profession of pharmacy in Canada, identified organisational change and better external relationships as two key priorities for improving the future of pharmacy(2).

 Discussions regarding organisational leadership likely emerged as there is no formal professional body to support the pharmacy profession in Ireland. Despite this, there are pockets of research excellence throughout the country(51–60). These range from individual community pharmacists to hospitals to third level institutions. We can learn from these bright spots. While individuals and teams could provide leadership by example, the need for national coordination and leadership in Ireland was a theme that appeared during discussions throughout the World Café.

 Many attendees made reference to the split of the regulatory and advocacy functions of the Royal Pharmaceutical Society of Great Britain. The new Royal Pharmaceutical Society supports the development of research in the UK with their faculty programme, advanced pharmacy framework and guidance and support resources. Other models for this exist both nationally (Irish College of General Practitioners) and internationally (American Pharmacists Association (APhA)). The establishment of a research network is another commonly implemented model which has demonstrated success within
pharmacy(61–63) and other professions(64). A white paper from the APhA Foundation explored what leadership might look like within a PPR network detailing how a volunteer vs. leader directed model might function(65).

4.5. Training and education

Lack of research capacity was also highlighted as a significant challenge facing pharmacists. Cooke has explored how we might approach research capacity building in healthcare environments and her six principles of capacity building such as supporting research close to practice, developing infrastructure and encouraging partnerships and collaborations is a useful model that could be adopted(66). It was also clear from the discussions that there are repositories of learning resources available which could be shared to build foundational research skills.

In the literature, a Canadian study highlighted ways in which advanced practice could be achieved within the context of new Pharm.D. programmes. Namely, by incorporation of new teaching strategies, increased inter-professional education and a greater focus on experiential learning to establish strong mentorship links(67). Independently, Ireland has embraced these ideals with the introduction of experiential learning placements within the new 5-year pharmacy programme – facilitated by the Affiliation for Pharmacy Practice Experiential Learning (APPEL) group. Further, the Northern Ireland Centre for Pharmacy Learning and Development (NICPLD) has developed a Foundation Programme which specifies the development of skills around gathering and analysing information in addition to research and evaluation as key competencies. Further, the Health Research Board’s Clinician Scientist programme or its Applied Partnership Award also present as opportunities for all healthcare professions to engage in applied research. Perhaps these programmes need to be promoted or reinforced with additional funding to meet the training needs of pharmacists with an increased focus on research skills.

During the emergence of Pharm.D. programs some commentators noted that these programs might not be suitable for all pharmacists(68,69). Indeed, as it requires significant investment of resources and time to develop a competent researcher it may be realistic to develop only some research ready pharmacists and pharmacies(68,69).

5. Conclusions

In 1981 Gerhard Levy wrote, “I believe sincerely that pharmacy is on the threshold of either a great and exciting future or mediocrity and oblivion. Much will depend on how future pharmacists are educated and trained.”(68) Perhaps pharmacy in Ireland is at another one of these crossroads and pharmacists urgently need to look beyond day to day operations or the profession may face a slow decline into irrelevance.

It was evident from the discussion day that there is a clear appetite amongst pharmacists to collaborate with peers and across disciplines to conduct pharmacy practice research and build research
skills. Lack of prioritisation of issues and coordination of research issues was highlighted. This has led to an environment whereby pharmacy has been reactive rather than proactive to new technology and workforce planning(70). Indeed, many of the discussions were centred around the lack of a formal professional body to support the pharmacy profession in Ireland. This leads us to a number of questions; what will leadership look like in Irish pharmacy? Do we need new structures (or perhaps none at all), or do we need to reconfigure existing frameworks? These questions can only be answered by the profession, and answers need to be sought urgently. We recommend a collaborative approach, with pharmacists engaging more within the profession and connecting with external stakeholders to stimulate pharmacy research and take meaningful steps forward to enhance pharmacy practice.

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