Implementing family practice research in countries with limited resources: a stepwise model experienced in Crete, Greece

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The need for a cost-effective decision-making process is increasingly seen as a challenge within modern family practice. The role of family practice research is well recognized in countries with readily available resources and capacity. However, the situation is different in a number of countries with limited financial resources and current low research capacity. This article reports on an empirical model of 10 steps developed and applied in Crete, Greece. It aims to exchange views on how to better design and undertake actions in order to develop future family practice research in countries with limited resources.

Keywords. Capacity, family practice, research, resources.

Introduction

Research within family practice is progressively seen as a major medical scientific priority, needed to effectively provide health care for everyday conditions within the setting of primary care.1,2 Additionally, in the current era of global economic deceleration, the need for a cost-effective decision-making process, based on sound evidence, is increasingly addressed as a day-to-day challenge for family practice and justifies the development of high-quality primary care research.

The role of family practice research is well recognized in countries with readily available resources and capacity. In these countries, progress in primary care research has been mainly achieved through the strengthening of academic family practice, the launch of training programmes for primary care researchers, the creation of interdisciplinary links among researchers and research centres, the building of practice-based research networks and the distribution of funding for research in primary care settings.3 Recently, a World Organisation of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians (WONCA) conference, focusing on improving health care globally, stressed the necessity of research in family practice and issued several recommendations to develop research capacity.4 The promotion of research expertise, training and mentoring was included among these recommendations.4 Similar actions have also been encouraged through the recognition that European general practice research training programmes should be further developed.5 For example, the creation of a Primary Care Research Network in the UK was intended to further improve the quantitative and qualitative determinants of the national overall research capacity.6 Currently, the adoption of such initiatives is reported to occur in a wide range of countries with available resources and an increasing interest in their effective implementation is expected.2

However, the situation is different in a number of countries with limited financial resources and current low research capacity, where the recognition of family practice research remains an unmet need.7 Published work has noted some of the reasons for the under-representation of countries with limited resources in the research literature, which include among others ‘research barriers such as lack of funding, poor facilities, limited technical support and inadequate training’.8 The implementation of research findings in practice and the access to up to date information are issues that also deserve emphasis9 especially whenever research capacity in family practice is discussed. Not surprisingly, in areas with limited capacity and resources, there is the risk of losing the opportunity to strengthen the links between health care providers and academics.2 Such links are an important
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prerequisite in the process of shaping the clinical and research identity of a developing medical specialty.

Within this article, we wish to reflect on some lessons learned from past experiences and to offer a perspective on how to better design a package of actions in order to develop future family practice research efforts, in countries with limited resources and capacity, as in the case of Greece.

Primary Care and Family Practice Research in Greece: Influential Factors

During the last two decades, a number of pioneering innovations and pilot actions in family practice training and research have been developed by the School of Medicine, University of Crete, the first academic institution in Greece to recognize general practice/family medicine (GPR/FM) as a discipline. Since 1986, through the development of the Clinic of Social and Family Medicine, our initiatives have been focused on developing and promoting the recognition of the clinical and academic nature of general practice at a national level. Great efforts have been made to provide evidence-based care derived from high-quality research at a local level, and actions have been undertaken towards the development of a research network of rural practices. The aim of the network is to formulate a research ‘culture’ within regional primary care and to link academic researchers to the community.

Exposure to the primary care systems of countries, in which the discipline of GPR/FM is well developed, has helped to guide the introduction of observational research in rural Crete. In particular, research initiatives with foreign universities (particularly Universities in Sweden such as the Universities of Lund and Linköping) led to the development of large comparative research projects and subsequent educational activities. In 1989, a structured collaboration began between the Department of Community Medicine at Lund University and general practitioners (GPs) in a health care region of Southern Sweden, resulting in a formal course of developing knowledge within basic research methodology. The Swedish educational initiative within primary care was perceived as an ideal opportunity to learn how to produce research and build ex novo research capacity in a region such as Greece, with developing health care potential but under-described community health needs. The development of joint research projects through the collaboration of the University of Crete, Greece, and Lund University, Sweden, led to a successful model of know-how transfer which substantially assessed pattern similarities and differences of health care use between countries with different cultural, financial, and social backgrounds. This was the first time that pioneering primary health care efforts in rural Crete allowed for data comparisons with findings of the Seven Countries Study. The collaborative work continued with the University of Linköping, where new instruments were developed and hypotheses were tested.

A further strategic and equally fruitful collaboration was developed with the Department of Cultural and Social Studies of the University of Leiden in The Netherlands based on the ERASMUS/SOCRATES Programme of the European Union. This substantially contributed to the implementation of certain utilization models in Crete and guided health care planning in the field of research and towards a European orientation. Additionally, the European General Practice Research Network (http://www.egprn.org), where the first attempts in implementing research have been presented and appraised, had an additional input on the development of research ideas and methodology on Crete.

The number of medical students choosing to follow a career in family practice in Greece has been shown to be very limited. It is possible that this discrepancy may reflect gaps within the primary care undergraduate and postgraduate teaching at a national level and the lack of academic positions within the discipline of family practice. More recently, inputs from the Department of General Practice and Primary Care of King’s College London have led to the development of the first Greek master’s course (MSc) in family practice and primary care (http://www.mastergeneralpractice.gr), which is offered at the University of Crete. This is the first postgraduate training opportunity for GPs in Greece. The programme aims to assist in creating a pool of academically trained GPs and independent future researchers who will gain valuable experience in the transfer of evidence-based knowledge into their practices. Moreover, it is anticipated that the programme will contribute to the development of a network of GPs in Greece and Mediterranean countries and will have a significant impact on the development of academic GPR/FM as well as on the improvement of the provided health services’ quality.

A SWOT (Strengths, Weaknesses, Opportunities and Threats) demonstrating the current research potential in academic research on Crete is illustrated in Box 1.

In describing all these initiatives a posteriori, an empirical strategy, consisting of a conceptual trinity of steps summed-up as ‘watch, learn and apply’, seems to incarnate the key content of the research building capacity process in Crete and is literally based on observation, appraisal and immediate implementation. Analysis of the experience gained and its implementation helped launch parallel research activities with those running elsewhere—despite the existing gaps in
terms of infrastructure, funding and resources—so as to promote capacity improvement and potential within rural clinical practice.

The Cretan Stepwise Model

Primary care research requires committed leadership to maintain and promote capacity. It is certain that there will be limitations and frustrations to face and to learn from. For this reason, in describing our own experiences and reflections, we provide an empirical and inductive methodology, which has been found to enhance the feasibility of research efforts undertaken in rural Crete. Consequently, this has led to a stepwise model of various indispensable actions for developing family practice research (Box 2) as follows:

**Use of an electronic patient record system**
The creation of an electronic patient record system is effective for the classification of the reasons for which patients seek care, the management of clinical information and the day-to-day registration of performed interventions. Furthermore, this can provide a framework for the structural organization of the data, which can then be utilized in primary care and health services research, at a national and international level. While such an application is not necessary or sufficient to answer the question to what the patients feel about the quality of care they receive, it can be seen as an imperative step so as to further improve the overall clinical performance and enhance community-based research. Use of the electronic patient record system provides a first impression with regard to common health problems and use of primary care services and facilitates health planning at a local level.

**Explore opportunities to work together with an academic department**
The collaboration between the Spili Health Centre (a rural community health unit), the Clinic of Social and Family Medicine at the University of Crete and the Dalby Health Sciences Centre of the University of Lund in Sweden has provided a suitable paradigm for the development of common research protocols, personnel exchange and the interchange of know-how between two distant areas of Europe. Moreover, this has created a research platform, allowing local physicians and researchers to compare their data with that of other countries. Such collaborations provide an ideal way to benefit from other departments experiences and to further promote the possibility of interactions, a necessary evolitional step in a young researcher’s career.

**Start with assessment of population health needs**
A comprehensive practice-based and public health-oriented approach to assess health needs was considered as crucial at the time when newly developed general practice was meeting public health in Greece. Theoretically, the public health profile within primary care can create viable pathways to effectively address emerging problems and challenges. Not surprisingly, complex issues ranging from the exploration of

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**A SWOT analysis has revealed issues of priorities and indicated actions that should be undertaken to improve the existing research capacity and potential of the Clinic of Social and Family Medicine in Crete**

<table>
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<th>Strengths</th>
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<tr>
<td>• The newly approved MSc/PhD programme in GPR/FM and primary health care.</td>
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<td>• Recently developed Practice-Based Research Network.</td>
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<td>• Ongoing collaborations with international and national counterparts.</td>
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<td>• High capability of elevated scientific productivity (from epidemiological studies to health service quality assessment).</td>
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<td>• Increasingly large demand for research activities and career opportunities by undergraduates, postgraduates and young researchers.</td>
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<td>• Ever-growing number of PhD students.</td>
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<th>Weaknesses</th>
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<td>• Limited national funds to support research activities and educational opportunities.</td>
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<td>• Limited human and material resource allocation.</td>
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<td>• Geographical and language peculiarities influencing the communication with other research entities in the European region.</td>
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<th>Opportunities</th>
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<td>• Potential to participate in upcoming European Framework Package proposal calls.</td>
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<td>• Increasing interest to entwine with European and International networks and research centres.</td>
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<th>Threats</th>
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<td>• Limited primary health care-oriented funding opportunities that would permit research on biological, environmental and social determinants of health.</td>
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sociocultural determinants influencing health consumption, to the practice-led organizational approaches aiming at overall quality improvement,21 deserve to be discussed in parallel with every effort to assess the real and current health needs of a community. A commitment to improve the health status of the population in primary care requires both understanding and consensus among practitioners, researchers and community leaders. The cooperation between the Department of Social Medicine at the Medical Faculty, University of Crete, and a number of primary care centres in rural Crete invited GPs to cooperate with public health providers. A set of recommendations were issued to both primary care practitioners and local authorities, enabling efficient monitoring of the populations’ health needs overtime. In addition, such cooperation involves medical students practicing in rural primary care, in the engagement of public health approaches (http//:vml.med.uoc.gr).

Identify common ill conditions and health problems
The natural history of disease, through the monitoring of care episodes, and the outcomes of care are issues that reflect the role of family practice in supporting clinical decision making.22 The impact of electronic medical records can exceed covering certain domains including public health surveillance and clinical research.23 Thus, they might help primary health care providers identify common ill conditions and to access disease management. This can assist them in the effective management of common disorders or episodes of care by calculating a priori probabilities on the basis of local epidemiological features and sociocultural determinants on a number of frequent clinical entities. This approach may upgrade clinical performance. It is also an essential step towards the formulation of research hypotheses and working assumptions for observational studies. It is known that observational studies based on databases are subject to unmeasured confounding; however, newly reported analytical techniques worked well in reducing the effect of confounding, thus making electronic patients records suitable for investigation of therapeutic interventions.24

Select and adapt into local language appropriate questionnaires
It is known that questionnaire can serve research either as sole research instruments (as in cross-sectional studies) or within clinical trials.25 The use of standardized and validated diagnostic instruments has been seen on Crete as an imperative component of the development of primary health care research capacity.26 They served epidemiological cross-cultural comparisons at an international level and offers common tools and definitions suitable to each culture. With this in mind, diagnostic tools commonly referred to in the literature could be adopted, translated and back translated for use in non-English societies with the aim of providing a standardized and comparable methodological approach to common clinical issues.27

Start to identify the burden of common diseases and measure diagnostic probabilities
The clinical uncertainty within primary care diagnoses, the burden of common disorders, the likelihood of their occurrence when non-typical symptoms are present and the dynamics of the consultation seem to be a challenge for research in countries with limited resources, as in Greece.28,29 Reporting local practice-based research data assists health practitioners in assessing population health needs and can help formulate diagnostic probabilities and nomograms30 to improve quality of care and patient safety. These flowcharts may promote effective and focused health interventions, which may lead to the development of international research interactions at a later date.
Discuss opportunities to publish initial non-experimental work

Although the non-experimental research conducted at a local level is of limited interest to wider readership, there is an important need to disseminate internationally findings of family practice research. This may benefit research and quality of care, allowing GPs to learn from international findings. It may seem idealistic to assume that all family practitioners could be trained as researchers; however, it is realistic to encourage them in analysing data from their everyday practice. Projects including guidelines adoption studies and local epidemiological analyses are likely to lead to improvements regarding the health care system, even if these do not include an advanced technical design or are not enrolling thousands of participants.

Look at possibilities to work together with other teams and researchers in a neighbouring country

Networking may begin from cooperations developed with neighbouring countries and the organization of the first Greek–Turkish meeting was seen as an urgent priority for both national associations of GPR/FM. This ‘experiment’ was regarded as a promising pathway in identifying a field of potential cooperation and shared experiences, in terms of training, research, quality improvement and innovation within clinical practice. Such regional initiatives may represent some good reasons to promote interdisciplinary and interprofessional collaboration in research, bringing together qualified and motivated collaborators that have backgrounds from different organizational and administrative contexts but share the ‘scientific culture’ and the willingness to work ‘in tandem’ and to enhance research potential.

Try to expand your networking to other larger research bodies and consider a solid partnership with European and international organizations

Strategic partnerships with academic institutions in Greece and abroad as well as with professional organizations including WONCA Europe (http://www.woncaeuurope.org), the International Federation of Primary Care Research Networks (http://www.ifpcrn.org) and the European General Practice Research Network (http://www.eugprn.org) are imperative so as to increase and maintain research capacity. Such professional and research organizations are capable of assisting practice-based research groups in building their research capacity and applying for funding to implement international research projects. This is the key message of the strategy to improve both health care and research capacity globally as issued by WONCA. Continuous efforts towards the solidification of primary care research partnerships with well-established institutions in the European Union are in alignment with the reinforcement of local scientific potential within GPR/FM and primary health care.

Supporting the idea that the invasion of academia requires strategic and stepwise planning, such initiatives should aim to create a critical mass of candidates for professorships in an academic general practice future.

See to what extent your collaborative work should be the starting point in looking for funding from those international bodies, including the European Union

This last step in our empirical model is consistent with the university department’s committed leadership to promote and expand practice-based networking through international research alliances and explore funding resources. Such initiatives aim to further develop cross-border cooperation between health care systems, as well as to improve already implemented practices by recommending effective evidence-based changes beyond national limitations. The application within the FP7 Cooperation Work Programme in the field of primary care and family practice is an example of such an opportunity that can contribute to tailor-made pilot interventions towards achieving better health through the dissemination of unbiased research findings. FP7 capacity can assist regional departments to increase their research potential based on experiences gained from developed European countries. Looking for funding from the European Union is unlikely to be a feasible option for many countries with limited resources. However, developing specific joint research proposals, which invest in the development of strategic partnerships, is the best way to increase the chance to promptly upgrade research capacity on stable platforms of organization, external evaluation and scientific consensus.

Conclusive Remarks

The viability of this model is corroborated by the fact that all the described department and practice-based activities were supported by limited national funding and low-cost technical support. The proposed model should be seen as a distillation of knowledge and experience within primary care, where barriers to develop academic family practice research still exist. It is also imperative to note that this effort is motivated by a great will to equally face research challenges within the context of the European family. Building on the experience, producing the evidence and transmitting the values are not aspirations but feasible objectives for general practice, especially when the past experience is preserved in order to better prepare the future.
research was used to orient the Cretan experience, nurturing our empirical stepwise model and helping us to overcome day-to-day limitations.

In conclusion, by opening a discussion in ‘Family Practice’, we wish to promote the interchange of views from other parts of the world with similar limitations and restrictions in an effort to deal with the existing concerns of implementing family practice research in countries with limited primary care capacity and to work towards joint research projects and future common development. However, we acknowledge that this empirical model may include elements that may not be necessary in order for other countries to undertake research, and we would not claim that our own reflections provide sufficient evidence in all suggested steps. Therefore, our experience is intended as a model to translate experience into knowledge, rather than strict compliance to the order of the 10 steps of the Cretan model, which, obviously, should not be seen as evidence-based guidance to develop research capacity wherever is lacking.

Acknowledgements

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Declaration

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