

Building a research agenda in health professions education at a Faculty of Medicine and Health Sciences: Current research profile and future considerations

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Background. To generate evidence in and for health professions education (HPE) that can enable reform and establish new relevance, a comprehensive HPE research foundation is required. Gaps identified in the sub-Saharan Africa (SSA) HPE literature should be addressed, while a need for more clarificatory and collaborative research to strengthen evidence has been expressed. Relatively few HPE centres exist in SSA. At Stellenbosch University's Faculty of Medicine and Health Sciences (FMHS) the Centre for HPE was established in 2006, followed by an HPE Research Unit in 2011. **Objectives.** To determine and analyse the current status of educational research in the FMHS, thereby contributing to conversations around an HPE research agenda for Africa.

Methods. A database of all HPE-related research was compiled, followed by a desktop analysis of all documents pertaining to current educational research projects in the FMHS in 2012, categorising projects according to: general information; sites where research was conducted; research focus; and research purpose. All data were recorded in an Excel spreadsheet and a descriptive analysis was performed.

Results. There were 106 projects, mostly aimed at undergraduate programmes. More than half focused on teaching and learning, while a few focused on assessment. A number of projects were community-based or involved national and/or international collaborations. Only 20% of projects were classified as clarification research.

Discussion. Educational research appears healthy in the FMHS, but more clarificatory and macro-projects are required. The profile of research is similar to the SSA profile. A research strategy relevant and feasible in our context has to be established with a shift to areas beyond our professional/institutional boundaries, posing HPE questions of relevance to South Africa and the African continent.

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At the start of the 21st century, Van der Vleuten *et al.*^[1] made a passionate plea for the need of evidence in health professions education (HPE). They voiced their concern that teaching is dominated by intuition and tradition, rather than by science, and that empirical verification is as important for the teaching domain as it is in professional clinical practice. In addition, recent calls have been made for HPE to reform and re-establish relevance through addressing population-based healthcare problems and keeping up with fast-changing contexts.^[2] Responding to these imperatives will require drawing on a foundation of evidence that has been established through research into HPE.

Greysen *et al.*^[3] describe the status of HPE in sub-Saharan Africa (SSA) in a review of the existing literature. They suggest that while certain topics are well described, including human resource planning priorities, curricular innovations, the 'brain drain', and internal drain due to the lop-sided burden of disease demanding most resources, key issues such as specialist training, programme outcomes, assessment and the establishment of HPE as a specific research domain have been largely neglected.

Simply increasing research outputs in neglected areas will not, however, be sufficient. The nature of the research that is undertaken in such areas,

as well as its focus and practical relevance are important considerations.^[4-6] Cook *et al.*^[7] explored the research performed in HPE and described a framework for classifying the purpose of educational research articles. Their work argued for a move beyond descriptive studies and comparisons of interventions (justificatory studies) to clarificatory studies from which models and theories are developed, and according to which predictions are made. These studies use every step of the scientific method, starting with observations, and building on previous research. O'Sullivan *et al.*^[8] join the conversation about the nature of HPE research by advocating for more collaborative research. They argue that, in the cycle of abstract theory generation to concrete practical needs and back, collaboration will enhance generalisability through obtaining a larger study sample and a shared intellectual process. The argument is no longer that we should perform HPE research, but that we need to engage more in clarificatory research, and to further strengthen the work, we also need to collaborate more frequently.

The origins of HPE research can be traced back to the 1950s. The development of HPE into an independent discipline occurred more recently, and was followed by the establishment of well-structured HPE units.^[9] Today, HPE research is typically led by an HPE researcher and/or development unit/centre/department. In South Africa (SA) it is only in the

last 15 - 20 years that HPE research has found fertile ground, and only in the last decade that HPE units have been established at various universities across the country. Yet, the reality is that all universities in SA function in a resource-constrained environment, and in this context, HPE and related research is still often regarded as an optional luxury, with the demands placed on practitioners often focusing on service.^[10,11]

Context

At Stellenbosch University (SU)'s Faculty of Medicine and Health Sciences (FMHS) the Centre for Health Professions Education (CHPE) was established in 2006. Since its inception the CHPE has committed itself to the promotion and support of HPE research, as is apparent from its vision statement: *'The Centre will provide outstanding academic leadership in health professions education, aimed at creating relevant health care provision in Africa'*.^[12] To this end a Unit for Health Professions Education Research was established within the CHPE in 2011. The purpose of the unit is to develop and drive a unified research agenda for relevant educational research in the FMHS. As a first step it was necessary to determine and analyse the current status of educational research in the Faculty. This profile could then serve as a departure point for developing a comprehensive HPE research strategy.

The aim of this article is to share the results of this analysis and in so doing contribute to prevailing conversations around an emerging HPE research agenda for Africa. Furthermore, we hope to inform the ongoing development of HPE research in SSA through critical reflection on the implications of our findings.

Methods

During 2011 the principal investigator met with all the heads of divisions, centres and departments ($n=35$) in the FMHS to introduce the HPE research unit and to determine what HPE research was performed in the departments/divisions/centres. None of them was a non-responder at this stage. A database of all HPE-related research was subsequently compiled and followed up with a desktop analysis of all documents that pertained to educational research projects in the FMHS that were current in 2012. To complete the database the SU and FMHS websites were searched for documents with information related to current HPE research projects (e.g. research proposals, descriptions of research in progress, etc.). In addition, all divisions, departments and centres in the FMHS were contacted in 2012 and requested to provide any additional information relating to HPE research in their environments that was available internally and had not yet been documented. As all the departments/divisions/centres had already provided information in 2011, non-responders to the supplementary request in 2012 were not followed up. During analysis, any reference in the texts to students and lecturers, teaching, learning, assessment, supervision, educational faculty development (FD) and curriculum were taken as being indicative of HPE research.

Ethical approval was obtained from the Human Research Ethics Committee at the FMHS (ethics reference No. N12/04/017). Four main categories (Table 1: (1) general information (title of research project; academic programme in which the research was done; participating divisions/department/centres); (2) sites where research was conducted; (3) focus of the research; and (4) research purpose of the project) were regarded as relevant to provide us with a comprehensive profile of HPE research in the FMHS. These categories would answer the questions: In which programmes was the research conducted? Where was

it conducted (e.g. on the teaching platform, collaborations external to the institution)? In which areas of HPE and for what purpose was HPE research performed? The available information was organised into these categories by one of the authors.

The programmes in which HPE research was being performed included MB,ChB (undergraduate medical); four allied health programmes (physiotherapy, occupational therapy, speech, language and hearing therapy and dietetics), MMed (resident training) and other postgraduate programmes, collectively grouped (PG). To classify the different research focus areas (category 3), we used a framework (Table 2) that was developed at the FMHS to identify focus areas for HPE research in the rural clinical school (RCS).^[6]

Based on the titles of the research projects, each research project was also classified according to its purpose, as proposed in the framework by Cook *et al.*,^[7] described above. All data collected were recorded in a spreadsheet in Excel and a descriptive analysis was performed.

Table 1. Criteria used to classify existing HPE research projects

1. General information of research project
 - a. Title of research project
 - b. Academic programme in which research is performed
 - i. Undergraduate programmes:
 - MB,ChB (Medicine)
 - Physiotherapy
 - Occupational Therapy
 - Dietetics
 - Speech, Hearing and Language Therapy
 - ii. Postgraduate programmes:
 - Research Masters
 - Masters in Medicine (MMed)
 - PhD
 - c. Participating disciplines/centres/divisions/departments
2. Site where research is conducted (rural, Cape Metropole/TAC) and collaborations beyond FMHS (national, African continent, international)
3. Research focus, according previously developed research framework^[6]
4. Research purpose according to Cook *et al.*^[7]

HPE = Health Professions Education; TAC = tertiary academic complex; FMHS = Faculty of Medicine and Health Sciences.

Table 2. Research focus according to research framework^[6]

Framework	<i>n</i>	%
Assessment: design	3	2.8
Assessment: evaluation	1	0.9
Curriculum: design	12	11.3
Curriculum: evaluation	8	7.5
Faculty development	9	8.5
Teaching and learning innovations: design	30	28.3
Teaching and learning innovations: evaluation	31	29.2
Student recruitment and retention	12	11.3
Total	106	

Table 3. Classification according to academic programme and place where research was performed

	Academic platforms				Collaborations			Total (%)
	Rural [†] only	Cape Metropole [†] only	TAC only	TAC, Cape Metropole and rural	National	Africa	International	
Undergraduate								
MB,ChB and at least 3			7	1				11 (10.3) of which 6 focus on IPE
two of the allied health programmes								
Allied health (one of the four programmes)	1	3	10	4				18 (16.9)
MB,ChB	2	1	38	6			2	49 (46.2)
Postgraduate			12	1	3	2	1	19 (17.9)
Faculty development			5	1	2	1		9 (8.5)
Total (%)	6 (5.7)	4 (3.8)	72 (67.9)	13 (12.3)	5 (4.7)	3 (2.8)	3 (2.8)	106

TAC = tertiary academic complex; IPE = interprofessional education.

[†]Rural refers to sites removed from the central Faculty and outside the borders of the Cape Metropole.

[†]Cape Metropole includes teaching sites within the borders of the Cape Metropole, but not at the central site. These sites are usually in poor, underserved communities.

Results

The study identified 106 active educational research projects in the FMHS in 2012. Table 3 shows the distribution of the projects in terms of programmes, undergraduate or postgraduate, sites of research and external collaborations. Most projects were being conducted at undergraduate level with 49 (46%) of the projects focusing on the MB,ChB programme. In 11 of the projects at least 3 undergraduate programmes were collaborating on the research. Of these 11 projects, 6 focused on interprofessional education (IPE). Eighteen (37%) of the projects in the MB,ChB programme were led by a CHPE staff member.

There were 19 (17.9%) research projects in HPE at postgraduate level, the majority of these in disciplines that were performing research on the MMed (resident) training and 9 (8.5%) projects that focused on FD.

Although 72 (67.9%) of the research projects were concentrated at the tertiary academic complex (TAC), there were a number of projects with a wider reach that included clinical training sites in the Cape Metropole (3.8%), rural training sites (5.7%) such as Worcester and Hermanus, or represented collaborations with other SA (4.7%), African (2.8%) or UK-based (2.8%) institutions (Table 3). Thirteen projects (12%) involved collaborations between the TAC, Cape Metropole and rural areas.

In terms of the research areas, the results showed that HPE research in the FMHS in 2012 focused mainly on teaching and learning innovations, with 30 projects (28.3%) on the design and 31 (29.2%) on the evaluation of such innovations, followed by research on aspects of the curriculum, with 12 (11.3%) that focused on curriculum design and 8 (7.5%) on its evaluation. Student recruitment and retention received some attention with 12 (11.3%) of the projects, while there was less focus on FD (9 projects, 8.5%) and assessment (only 3 projects (2.8%), 2 focusing on development of assessment and 1 on the evaluation of assessment). Table 2 provides details on the results of the analysis of the research focus according to the RCS framework.

Regarding the purpose of research according to Cook *et al.*^[7]'s classification, 54 (50.9%) projects were classified within the justification group. Descriptive research projects represented 31 (29.2%), with 21 (19.8%) clarification studies. Table 4 provides more details on these categories.

Table 4. Classification according to the purpose of the research as described by Cook *et al.*^[7]

	<i>n</i> (%)	MB, ChB	Allied health	All UG	PG	FD
Description	31 (29.2)	11	5	3	7	5
Justification	54 (50.9)	27	10	5	8	4
Clarification	21 (19.8)	11	3	3	4	0
Total	106	49	18	11	19	9

UG = undergraduate; PG = postgraduate; FD = faculty development. Allied health includes physiotherapy, occupational therapy, dietetics and speech, hearing and language therapy.

Discussion

We were heartened to find 106 research projects on HPE in the FMHS at the time of the study (2012). In addition, the extent of HPE research activities in the MB,ChB programme was equally pleasing, perhaps reflecting an emerging need for evidence-based HPE in our faculty. The high percentage of MB,ChB-related projects led by a member of the CHPE can partially be ascribed to the fact that the current director of the MB,ChB programme is also the director of the CHPE. Additionally, the clinical skills laboratory, the coordinator for IPE and service learning, most RCS-related research and MB,ChB student support are all located in the CHPE. The smaller allied health programmes also showed positive embracing of HPE research. While only 11 of the 106 projects involved three or more undergraduate programmes (MB,ChB and at least two of the allied health programmes), the fact that 6 of these focused on aspects of IPE could be interpreted as a positive move towards fostering interprofessional learning as a first step towards the interdependence of health professionals.^[2]

In the review of existing HPE literature in SSA, Greysen *et al.*^[3] emphasise the lack of scientific publications on HPE and the need for addressing important, neglected topics, such as solution implementation, specialist training, programme outcomes, assessment and the development of HPE as a specialised field of inquiry. The results of our study show some alignment with these recommendations. When examining the projects according to

the RCS research framework (Table 2), it is worthwhile noting the emphasis on teaching/learning innovations and their evaluation. Secondary emphasis was on student recruitment and retention, particularly student support (11.3%), and on curriculum design and curriculum evaluation (18.8%). The dearth of projects on assessment (3.7%) is, however, a cause for concern. In 2004 Schuwirth and Van der Vleuten^[14] advocated for a return to an emphasis on underlying concepts and reflection when investigating assessment. In the context of transformative learning and interdependence it becomes even more relevant to interrogate existing assessment practices, and to develop assessment strategies and practices that will stand up to such scrutiny.

Another aspect that attracts attention is the paucity of projects focusing on FD (7.6%). The reasons for this were not pursued in the current research. However, potential explanations may include the lack of capacity in the CHPE at the time of the study to focus on FD interventions and consequently perform research in this area. Anecdotally, the argument is often made by staff that there is no time to attend FD activities because of the emphasis on clinical service-related activities. This could be discouraging to potential researchers. McLean *et al.*^[13] clearly demonstrated the relationship between FD and the overarching outcomes of HPE, and it is therefore important to further interrogate this shortcoming. Research into the faculty's understanding of, and commitment to, FD requires urgent attention. This was also emphasised by Frenk *et al.*^[2] in their recommendations to bring HPE into the 21st century. We are, therefore, pleased to report that since completion of this study, additional support to develop a strategy and plan for educational FD has been secured, and that this strategy and plan have been developed. We are currently implementing the plan and this implementation is being researched.

In view of Greysen *et al.*'s^[3] recommendations, it is unsatisfactory that less than 20% of projects focus on postgraduate education, mostly on resident training programmes. On the other hand, on a continent where there is a chronic shortage of even general medical practitioners, it is perhaps justifiable that the current emphasis on educational research is predominantly at undergraduate level.

The focus on interventions and their evaluation represents, based on Cook *et al.*'s^[7] classification, description or justification studies, but not clarification. Although we identified more projects as clarificatory projects than Cook did (19.8% v. 12%), our classification was based on the titles of the projects only. In addition, our focus was on active research projects, not on completed, published work as was the case in his analysis. It may also be argued that less clarificatory projects reach publication as they are more likely to be complex studies, and therefore more vulnerable to the difficulties associated with reaching the submission for publication stage.

Innovative educational interventions such as the RCS and other decentralised clinical training platforms, afford us the opportunity to base research projects in these environments, and to investigate aspects of the interventions that are of interest, especially in relation to the retention of health professionals in rural^[15] and underserved areas. It is therefore not surprising that 23 of the projects are situated rurally or in the Cape Metropole.

The question arises as to whether our findings are relevant to other institutions or environments in Africa. As suggested earlier, a comparison of our results with Greysen *et al.*'s^[3] demonstrates that the pattern of research at the FMHS, SU mimics that of HPE publications from Africa. One of the important issues when designing HPE research is that, although description and evaluation of interventions are

essential, it is vital also to progress to the level of clarification. Much of our innovation and creativity is based on unique solutions for specific problems in our context, but often many can be used in other situations or other contexts as well, and thus do not have merely local relevance. However, to demonstrate this effectively we should not only describe and evaluate the interventions, but also explore the underlying theory, or use the interventions as a springboard to develop models and generate new theoretical perspectives.

To investigate the transferability of research in the local context or to strengthen research by conducting multi-institutional studies, joint planning at inter- and trans-professional and inter-institutional level is important – from silos and competition to collaboration and success.^[13] As only 10% of our projects include partners outside of the institution, this is clearly an area that offers opportunities for further development. However, collaboration can be difficult, and it is hard work. There is often a culture of competition that starts at discipline and profession level and can hamper efforts to collaborate. It therefore requires commitment, perseverance and skills in leadership, conflict and change management, and project management. In the spirit of interdependence and to ensure the most effective use of capacity, it is logical that collaboration will be beneficial.^[8] In addition, collaboration models interdependence and teamwork to our students.^[16]

One of the benefits of collaboration is that it will also assist in building relationships internally and externally, locally and internationally. To facilitate collaboration, existing networks like the Foundation for the Advancement of International Medical Education and Research (FAIMER), Association for Medical Education in Europe (AMEE), Association for the Study of Medical Education (ASME), the Network Towards Unity for Health and the Medical Education Partnership Initiative (MEPI) can be of great value. If competitiveness and collaboration are not regarded as 'either/or' problems to be solved, but rather as polarities to be managed so as to leverage the strengths (upsides) of both and to steer away from the downsides, this may also contribute to success.^[17]

Conclusion

In conclusion, we described a process of determining the status quo with regard to educational research in a faculty of medicine and health sciences with a view to developing an agenda for HPE going forward. The profile of our active research is similar to the profile of published literature on HPE in Africa. The next step will be to develop a research strategy that is relevant and feasible in our context. An effective CHPE and specifically an HPE Research Unit will play a crucial role in driving this process that will endeavour to generate theory and provide results that can be translated into improved practice.

At the heart of this approach should be collaboration at interprofessional and inter-institutional levels. As previously stated, O'Sullivan *et al.*^[8] make a strong case for collaborative research as the research questions we typically address in HPE are often interdisciplinary in nature.^[8] We may argue that our work is inherently collaborative, but that such collaboration is often only within our institutions. We infrequently cross the boundaries to other institutions and countries to work on truly collaborative endeavours.^[18] A move towards areas beyond our professional and institutional boundaries and to posing HPE questions in the context of health in SA and Africa could address the arguments made for evidence and scientifically sound information. This evidence can then be used for the advancement of understanding HPE and decision-making regarding educational options.^[1,19]

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