

# The Professional Doctorate of Pharmacy in a developing country: the Sudan Initiative

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*This paper discusses the development of a professional doctorate of Pharmacy at Pharmacy Specialization board (PSB) part of Sudan Medical Specialization Board (SMSB), Khartoum, Sudan. The initiative for this new doctorate was led by Professor Abdalla Elbadri chairman of the PSB. The curriculum of the undergraduate programme was drug oriented and this necessitated the establishment of professional postgraduate training, which was in the responsibility of the PSB. The first degree approved was the fellowship in pharmacy. This innovation from fellowship in pharmacy to professional doctorate came about because the fellowship was not able to meet the present demand for pharmacists throughout the pharmacy practice in the country, as when graduated, many choose to migrate to western countries. The new professional doctorate in pharmacy introduced the concept of professionalism as a corner stone throughout the study period. Currently there are four available specialties in the Professional Doctorate including; Clinical Pharmacy, Hospital Pharmacy, Quality Assurance of pharmaceuticals and Management of Pharmaceutical Services. The programme is flexible so that candidates with a master degree, fellowship or even a Bachelor's degree can be admitted, with differences in study period, for example, those with a Bachelor's degree may gain the full professional doctorate within four years. Assessments include theoretical knowledge, practical skills and research. The professional doctorate development team at Khartoum University feel that regional and international collaboration is needed in order to overcome obstacles characteristic to developing countries,*

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*for example in terms of academic recognition or a professional doctorate (where the PhD is the single most popular doctoral degree).*

## **Introduction**

This paper was first presented at the 6<sup>th</sup> International Conference on Professional Doctorates, in London on 22<sup>nd</sup> March 2018. The presentation was given by Professor Abdalla Elbadri and Professor Magdi Awadalla. The professors secured funding from SMSB in order to attend the conference. Over the last five international conferences on professional doctorates, there has been no substantial participation from developing world universities in developing and offering professional doctorates. The Sudan Medical Specialization Board (SMSB) team led by Prof. Abdalla in the Pharmacy Specialisation Board (PSB) have developed and introduced a professional doctorate in pharmacy in response to the increasing demand for pharmacists in a range of professional routes. The professional doctorate of pharmacy is intended to also respond to the need to professionalise the pharmaceutical practice. The new approach offers the opportunity to upgrade from undergraduate , fellowship or master's degrees and to choose to focus doctoral research around a particular pharmacy specialism.

## **Background**

Sudan, officially called 'The Republic of the Sudan' is at the heart of Africa covering a land mass of 1.8 km<sup>2</sup> at the crossroads of Sub-Saharan Africa and the Middle East. Sudan borders seven countries and has a natural coastline on the Red Sea, with a population of around 40 million people. The average annual income is \$ US = 960 (NSW Migration Heritage Centre 2011).

The health service is largely underdeveloped, for example with only one pharmacist per 2000 people (Sudan Health Observatory, 2019). The SMSB comprises expertise in Health care including Nursing care, Pharmaceutical care, Medical care, with the overall aim of providing a better quality of life for patients. Pharmaceutical care requires an integrated team of professional providers including Clinical & Community Pharmacy, Hospital Pharmacy, Quality Assurance (QA) of Pharmaceuticals and Management & Industry.

Undergraduate pharmacy education has been available at the University of Khartoum since 1963. However, until the early 2000's, the curriculum was highly drug-oriented, with little recognition of patient interaction.

Early attempts at introducing courses that were more practice oriented, at postgraduate level, had limited success as experience in practice was not available. This necessitated the establishment of a professional postgraduate training initiative, which was the responsibility of the PSB in SMSB.

The Sudan Medical Specialisation Board (SMSB) was founded in 1995 with the aim of training medical graduates up to clinician specialist level. The SMSB includes 50 medical councils across Sudan. To date, from the different councils, more than 5000 specialists have graduated and more than 6000 candidates are currently under training. The Pharmacy Specialization Council was established in 2003. The first pharmacy degree approved was a fellowship programme. The Fellowship in Pharmacy involved World Health Organisation experts and stakeholders in designing and delivery. The new pharmacy fellowship programme involved a more transformative approach through moving to participatory workshops and away from conventional lecture mode in order to build on a more informal insider researcher practitioner approach to learning (as discussed by Costley et al., 2009). This enhanced the move from an academic and transactional orientation to a more transformative and professional orientation reminiscent of the Mode 1 (transmission, transaction) and Mode 2 (practise knowledge, transformational) orientation discussed by Gibbons et al., 1993). The new professional orientation also enabled the potential for capacity building through the use of learner centred learning practise workshops. The first fellowship training of pharmacy started in 2003 and by 2015, over 100 candidates graduates with the fellowship.

The Professional Doctorate of Pharmacy started in 2015 and was an unprecedented programme for a developing country, which offered an upgrade for undergraduate and master's/fellowship level and the chance to specialise in the various pharmacy related approaches, including Clinical Pharmacy, Hospital Pharmacy, Quality Assurance of pharmaceuticals and Management of Pharmaceutical Services. The new professional doctorate offers the pharmacy professional the chance to upgrade their skills through taking a higher level qualification and to specialize in a particular field of pharmacy. There are two admission tracks which cater for those with a bachelor's degree (track 1) or fellowship or Masters degree (track 2).

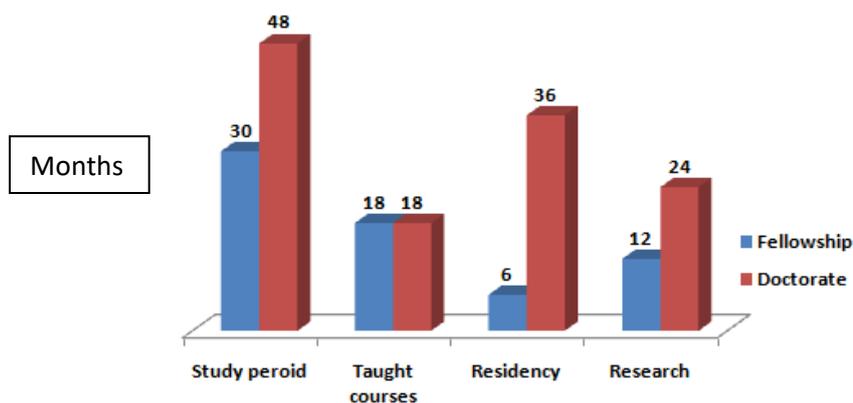


Figure 1: Bar chart depicting the time duration and entry mode for both the fellowship of pharmacy and the doctorate of pharmacy.

Admission to either fellowship or doctorate depends on the degree qualification the candidate holds; admission to the doctorate is normally focused upon those who have completed a bachelor’s degree in pharmacy and have established experience. The fellowship offers a more flexible route to those who wish to study up to master’s degree level.

Specialist validated pathways (SVPs) available for the doctorates currently include:

1. Professional Doctorate in Clinical Pharmacy.
2. Professional Doctorate in Hospital Pharmacy.
3. Professional Doctorate in Quality Assurance of Pharmaceuticals.
4. Professional Doctorate in Management of Pharmaceutical Services.

Admission for those who hold a bachelor’s degree is shown in Figure 2 below (track-1):

	First Year	Second Year	Third Year	Fourth Year
<b>Courses</b>				
<b>Residency</b>				
<b>Research</b>				

} 6 months

Figure 2: Track 1: for candidates holding a bachelor’s degree.

Admission for those who hold a fellowship or master’s degree is shown in Figure 3 below, as track-2:

	First Year	Second Year	Third Year
<b>Courses</b>			
<b>Residency</b>			
<b>Research</b>			

6 months

Figure 3: Admission to Track-2: for candidates holding a fellowship or master’s degree

Assessment involves a range of theoretical and practical capabilities, including:

- **Theoretical knowledge:**
  - Written exams including, Multiple Choice Questions (MCQs) , Extended Multiple Choice Questions (EMCQs), short - long cases and assignments.
- **Practical skills and attitude:**
  - Well-structured competency based portfolio of practice.
  - Objective Structured Clinical Examinations (OSCE’s)
- **Research capability:**
  - Questioning and critical appraisal, presentation skills, problem solving, scientific writing and reporting.
  - The thesis is examined by a panel of external & internal examiners.

### Challenges and Future Prospects

Obstacles include Immigration restrictions on visiting trainers and experts as well as lack of funding to further develop the professional doctorate concept. Limited availability of in-house training facilities and resistance to change on the part of academics and Ministry of Health administration are also challenging.

International recognition is required in order to have impact and legitimacy across all pharmacy practice fields. The academic team are looking for collaboration both regionally and internationally in order to develop more professional doctorate specialist pathways in health. There is much potential for professional doctorates in the developing world, which has been relatively slow to adopt a practice orientation at doctoral level. It is hoped that there might be further representation of professional doctorates at the next international conference on professional doctorates, with a greater focus on the impact and sustainability of health related education and systems.

### **Conclusions**

The fellowship programme has been upgraded to an unprecedented professional doctorate of pharmacy programme, which is flexible (where Bachelor, Fellowship and Master candidates are various eligible starting points). Overall, the curriculum has been designed to meet the three corners of professionalism (Knowledge, Skills & Ethics, for example as outlined by the UK General Pharmacy Council, 2017). There is an urgent need for regional and international collaboration to overcome obstacles characteristic of developing countries. However, with encouragement and support from western partner institutions, the professional doctorate could have a key place in health care and other professional sectors in the developing world. The authors would like to hear from any prospective partner institutions who might wish to share in this initiative.

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1