

Factors influencing the development of practical skills of interns working in regional hospitals of the Western Cape province of South Africa

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Abstract

Background: Clinical skills and the ability to perform procedures is a vital part of general medicine. Teaching these skills to aspiring doctors is a complex task. It starts with a good theoretical preparation and some practical experience at university. On graduating from university, each doctor is faced with the task of transforming theoretical knowledge into the practical, procedural skills of a competent professional. This study aims to assess the perceptions of intern doctors working in regional hospitals in the Western Cape of their skills training both at undergraduate level and during the intern year.

Methods: Focus groups involving 25 interns with 11 months' experience from five regional hospitals were used. Six themes were identified. These were undergraduate training, the student's attitude, the intern's approach to learning skills, opportunities for interns in regional hospitals, backup and support, and personal growth in procedural skills.

Results: The majority of the participants found that their training at medical school prepared them adequately for the intern year. An obstacle to skills training at university was the structure of the teaching tertiary hospital, with its emphasis on rare diseases and lack of opportunities for hands-on experience. The amount of skills that were learned at university was related to the enthusiasm of the student.

Once the student had qualified and was employed in a regional hospital, opportunities to learn skills were available in excess. The benefit of doing an internship in a regional hospital was described as a fine balance between opportunities, responsibilities and backup. In all the focus groups, the interns remarked on the high level of responsibilities that they had to bear, but this spurred them on in the learning of skills. The relationship between intern and senior doctor was important when it came to learning procedures. In most hospitals, the junior doctors perceived the backup cover available to them as adequate.

Consensus existed as to the value of such an intern year and its importance in gaining procedural skills. At the start of the year, most interns experienced a lack of confidence, together with a sense of fear that they might not be adequately prepared to do the work expected of them. Confidence seemed to grow as the year progressed, and this was linked to experience and the successful completion of procedures, as well as adequate backup. It was found that, by the end of the year, graduates from different universities with varying emphasis on practical skills all performed at a similar level.

Conclusion: The findings of this study affirm the literature in suggesting that skills training at university needs to be standardised by the introduction of a core curriculum in procedural skills. Learning outcomes should be fashioned around the relevant competencies required in the pre-registration year. It is vital for the training of new doctors that the internship year be optimised in terms of opportunities and backup as part of a strategy to improve skills training. The value of regional hospitals in teaching junior doctors clinical skills is emphasised.

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Introduction

On graduating from university, each doctor is faced with the task of transforming the theoretical knowledge gained during training into the practical, procedural skills of a competent professional.¹ These procedural skills will ultimately benefit the patients and leave the doctor with a sense of self-worth and accomplishment. It is impossible for a university to teach every potential skill a doctor may need. Instead, the student is armed with a theoretical framework that empowers the doctor to deal with the practical aspects of health care in a safe, systematic way and to seek help when out of his or her depth. There are many types of hospitals where a newly-qualified doctor may perform her or his pre-registration house officer year in South Africa. These range from academic tertiary hospitals to rural, secondary-level hospitals. It is hoped that, in these accredited hospitals, an intern will be exposed to various aspects of clinical problems, supported by enthusiastic, experienced senior doctors, so as to round off the medical training and allow independent practice from there on.

As part of a quality control and feedback strategy, it is important that intern doctors be asked whether they perceive their training at university as adequate and relevant to the situational demands of being a houseman. The quality of teaching at the training institutions may be gauged by directly asking intern doctors about their perceptions regarding their clinical skills training. Recommendations may be offered to the policy makers of the undergraduate curriculum as well as to health department officials and the Health Professions Council of South Africa (HPCSA), which are responsible for these hospitals and the interns. As stated by one research team, 'medical education has largely escaped from the quality control rigours imposed on clinical practice'.²

Literature

Much has been written about the role of an internship, clerkship, residency, housemanship or pre-registration year. This exposes a newly-qualified doctor to the realities of hospital practice, under a degree of supervision by senior colleagues, in preparation for independent practice. It takes place under supervision in approved hospitals and under the responsibility of the HPCSA. By rotating through different disciplines, the exposure to clinical medicine prepares the newly-qualified doctor for entering medical practice.³

To date the HPCSA has not published guidelines detailing the procedural skills expected of South African medical students upon graduation.⁴ In Britain, the General Medical Council (GMC) has laid down a core curriculum that all medical schools are expected to cover in its document titled 'Tomorrow's Doctors'.⁵ In it, the essential knowledge, attitudes and skills expected from a graduate are laid out. This makes it more transparent for medical students to meet expectations. In South Africa, though, the skills expected to be mastered by interns are far more complex and varied than those laid out by the GMC. A South African study monitored 51 procedures that were encountered by interns in rural hospitals.¹ This list included technical skills like administering an anaesthetic and performing a caesarean section, and communication skills like bereavement counselling and giving talks at a weekly clinical meeting. According to the findings of this study, significant improvements in experience and confidence regarding these procedures took place over the intern year.

The first year as a doctor may be a stressful, overworked and poorly-supported experience.⁶ More recently, though, newly-qualified doctors have found their first year to be positive and educational when they are placed in a general practice rotation that provides supervision and clinical experience.⁷

Many authors feel that the pre-registration year is not primarily the place to learn practical skills and that these should rather be taught at undergraduate level using a more structured approach.^{1,4,5,8,9,10,11} Evidence shows that inadequate exposure to practical procedures and common clinical conditions and insufficient training in difficult communication skills lead to a high incidence of emotional distress.^{1,11}

Traditionally, medical schools emphasised the understanding and recall of content, although there were no agreed criteria at the conclusion of training to assess the procedural competence of doctors.^{4,9,12} Furthermore, medical schools are commonly situated in urban areas, attached to hospitals that are usually well equipped and with set systems of supervision and referral. Here, medical officers, registrars and consultants compete for the same pool of procedures in a hierarchical and competitive atmosphere that is haphazard and sometimes involves humiliation.^{2,12,13}

More recently, researchers have suggested using lists or logbooks of basic skills, drawn up from consensus amongst clinical staff, that the students are required to master by the completion of their studies.⁷ These researchers found that a problem-based learning environment, combined with community-based education and the use of skills laboratories, allowed medical students to perform more skills during their clerkships and develop greater confidence.^{7,14,15} Problem-based learning methods have also shown an increased percentage of long-term recall.¹⁶ When comparing traditional courses with problem-oriented, context-based courses, the latter generally have been found to be superior.^{15,16}

In South Africa, there is consensus on the deficiencies of medical training in the procedural skills needed for clinical practice.^{3,4,12,17,18} Burch et al. found that most of the South African medical graduates participating in their study were unable to perform the technical procedures expected of a house officer on entry to the intern year. No significant variations in results were found between the five medical schools represented, and there was a big difference in competence among the participants.⁴ These findings are believed to result in the significant skills gap found in a survey of South African doctors working in district hospitals.^{4,19,20,21}

This study aims to explore the perceptions of South African interns working in regional or level-two hospitals of their skills training, both at undergraduate level and during the intern year. A year into the internship, participants will be in a good position to comment on whether their medical training was adequate in preparing them for their internship. They will also be able to make suggestions on how to improve the skills training component of the undergraduate courses and how regional hospitals can improve the acquisition of procedural skills. The objectives were to identify the areas of undergraduate skills training that were useful and those that needed improvement. The role of regional hospitals in procedural training will also be assessed. An exploration of the barriers and difficulties involved in the learning of clinical skills will be made.^{22,23,24,25,26,27,28,29,30,31,32,33,34,35}

Method

Qualitative data

The study was qualitative in nature. Focus groups were used as the method of data collection.^{36,37,38}

Sample

The study was conducted among interns nearing the completion of their internship year. Participants in the focus group discussions were recruited from five regional hospitals in the Western Cape, namely George Hospital in George, Eben Donges Hospital in Worcester, Paarl

Hospital in Paarl, Hottentots Holland Hospital in Somerset West and Victoria Hospital in Wynberg, Cape Town. These hospitals all mainly use general practitioners to deliver primary and secondary in-patient health services and have between four and eight intern posts. Working in the casualty department forms a considerable part of the work done by interns in these hospitals, as do rotations through most major specialities. Five group discussions were held and this was regarded as an adequate amount as no new information was expressed by the fifth one.³⁹

Fieldwork

Superintendents of the above mentioned hospitals were sent a letter explaining the purpose of the study and asking them to arrange a suitable time and place for the sessions and to involve all interns in their hospitals. Participation was voluntary and the focus groups took place at a pre-arranged time at the hospitals where the interns worked in November 2004. This meant that the interns already had 11 months' experience. The focus group discussions were led by the researcher. The major role of the leader was seen as posing questions, encouraging input from all participants and ensuring that they all felt comfortable.

The group discussions were audio-taped for their content, but confidentiality was maintained. The interviews took place in two languages, namely English and Afrikaans, according to the preference of the participant. The following exploratory question was used in various forms, namely: "Do you feel you were trained adequately in practical procedures to cope with the intern year?" The contents of the audiotapes were transcribed verbatim and field notes on each session were also kept.

Analysis

The analysis of the data involved the 'immersion and crystallisation' technique^{40,41} as described by Miller and Crabtree.⁴¹ In this intuitive analysis style, the researcher organises the data by examining the text thoroughly and then crystallising the most important aspects. Major and recurring themes are identified. No themes were identified in advance for this research.

In this study, an attempt was made to increase the understanding of the complex nature of the research question by involving different sources of intern doctors, namely from five different hospitals.^{8,37} The quality of the interpretation of the data is limited by having a single researcher analyse the contents, translate the relevant text and identify the common categories and themes.

Results

A total of 25 interns nearing the completion of their intern year participated in five separate group discussions at five regional hospitals during November 2004. Of those, 17 were women and eight were men. The smallest group had three participants and the largest had seven. Group discussions lasted between half an hour and an hour. All came to a natural conclusion. The universities that were represented are listed in Table I.

Table I: Universities from which the participants had graduated

University	Number of participants
Stellenbosch University	6
University of the Free State	5
University of Pretoria	5
University of Cape Town	4
University of KwaZulu-Natal	3
University of the Witwatersrand	2

Walter Sisulu University and Medunsa were not represented in the regional hospitals chosen for this investigation.

Six themes were identified using the immersion and crystallisation technique of data analysis. These were undergraduate training, the student's attitude, the intern's approach to learning skills, opportunities for interns in regional hospitals, backup and support, and personal growth in procedural skills.

• Undergraduate Training

The majority of the participants found that their training at medical school adequately prepared them for the intern year. At the same time, however, they said that nothing could prepare one for the decision making involved in and the responsibility of hospital practice.

Some felt that they had had good exposure to the various aspects of medicine and opportunities to learn skills, although a lot depended on the hospital rotation of the student. They had exposure to both tertiary and secondary-level hospitals, and procedural skills learning was described as being based on using opportunities.

On the other hand, a few of the participants mentioned the importance of a good theoretical grounding. The implementation of the new procedural-based curriculum was referred to as a positive development in a few discussions. However, it was also stated that this approach sometimes resulted in a lack of academic grounding. The use of logbooks that ensured that a student performed a list of essential procedures by the completion of medical studies was seen as a useful process.

An obstacle to skills training at university, stated on numerous occasions, was the structure of tertiary hospitals. The focus always seemed to be on rare diseases and not on the common presentations that one saw in a casualty setting. It was suggested that family medicine could play a more important part in the training of skills.

Suggestions were made as to how university training could improve training in procedural skills. It was felt that ACLS (Advanced Cardiopulmonary Life Support), ATLS (Advanced Trauma Life Support), APLS (Advanced Paediatric Life Support) and surgical skills courses in the final year of university would go a long way towards preparing students for the practical aspects of the intern year. The benefits of skills laboratories at university were also described in the majority of the focus groups.

Prescribing was noted by all groups as being a skill that was not well developed at university and was only practised for the first time as an intern.

Lastly, students from particular universities described how they had persistently been called useless. This had led to these students feeling inferior and having to build up confidence during the intern year.

• The Student's Attitude

From the discussions it was clear that the amount of skills that were learned at university was related to the enthusiasm of the student.

Some students actively sought opportunities to gain procedural experience. This led to them being able to insert a central venous pressure line and do caesarean sections on qualifying from medical school, whilst others could hardly put up an intravenous line.

The fact that students never had responsibilities or were never made to feel a part of the ward team also contributed to a failure to acquire skills

and dampened any existing enthusiasm. This seems to be changing with the new curriculum, where logbooks ensure that skills are learned and that students are involved in ward work.

The relationship that one had with the registrar or consultant was also named as a factor that determined whether one would be allowed to do certain procedures or not. Positive support from experienced clinicians was seen as vital in developing confidence. But it was also mentioned that some consultants showed favouritism toward certain students, and it was a matter of luck as to which group one landed up in.

• The Intern's Approach to Learning Skills

Once the student had qualified and was employed in a regional hospital, opportunities to learn skills were available in excess. It was pointed out that the main focus at university was to learn, whilst as an intern it was to work. There was a general feeling that, placed in the situation of being a junior doctor, one adapted quickly and acquired the necessary skills in a short period.

By the end of the intern year there was a strong sentiment that ultimately everyone could perform the same procedures, no matter which university one came from. Some participants acknowledged that they learned quicker than others.

One of the factors that made the experience so valuable was the responsibility that they were given. The responsibility was also difficult for some to carry. In one hospital an intern could not cope with the responsibility of working alone in a neonatal intensive care unit. It was pointed out, however, that this was due to the unrealistic expectations placed on interns in this department and not as a result of inferior training at university.

However, confidence was built through these experiences. By accepting the challenge of working on their own without turning to the available backup, the interns learned to cope and grow in strength.

According to one participant, the learning process seemed to take place almost on its own. Because they were exposed to such a wide variety of conditions, there was ample opportunity to practise and master the skills. The 'see one, do one' method of learning was described as the most common way to learn new procedures.

• Opportunities for Interns in Regional Hospitals

The benefit of doing an internship in a regional hospital was described in a number of discussions as a fine balance between opportunities, responsibilities and backup. In these hospitals there was no competition between doctors wanting to acquire skills.

In all the focus groups, the interns remarked on the high level of responsibilities that they had to carry, but that this spurred them on in the learning of skills. It was apparent, however, that the level of responsibility demanded of the participants differed considerably between the various hospitals.

The point was raised in most of the groups that fellow students now working in other hospitals throughout the country did not have the same experiences and opportunities. Specifically, working in a casualty department seemed to be a large part of an intern's work and this was seen by the majority of participants as a good place to learn skills. Being left alone as an intern in this setting was seen as irresponsible by some. This was because of the difficult conditions that presented themselves, combined with the lack of backup from a senior doctor.

One point of criticism was that the two weeks of anaesthetics was too short to really master the skills and to function independently, as would be expected in the following year.

• Backup and Support

Vital to the intern's functioning within a regional hospital is the backup and support provided by experienced senior colleagues. In most hospitals the junior doctors perceived the backup cover available to them as adequate.

In some cases, the interns mentioned that even though backup was available, they preferred to soldier on alone. The senior cover available to the interns took the form of consultants in some departments and registrars or medical officers in others. In other hospitals, community service doctors who had been interns the previous year were teaching the procedural skills. However, it was recognised that this form of skills transfer was inferior.

In many hospitals there seemed to be a good atmosphere between the different levels of doctors, resulting in an environment conducive to learning. However, the attitude of the trainers was not always positive.

The relationship between intern and senior doctor was important when it came to learning procedures. The intern had to show a level of enthusiasm to spur the colleague on. The empathy required for teaching was also recognised. The junior doctor seemed to be in a vulnerable situation, where she or he was dependent on the goodwill of senior doctors to teach the skills vital to independent practice.

• Personal Growth in Procedural Skills

At the start of the year, most of the interns had experienced a lack of confidence, together with a sense of fear that they might not be adequately prepared to do the work expected of them.

Confidence seemed to grow as the year progressed, and this was linked to experience and the successful completion of procedures, as well as adequate backup. The year was also perceived by many as exciting or stimulating. There was a good sense of humour throughout. It was also clear that the participants went through bad stages.

But, ultimately, the participants felt they had achieved what they set out to do and had acquired the skills they needed to take them to the next step, namely community service doctor and independent practice. Appreciation was expressed towards the hospitals that had made this possible.

Conclusion

Acquiring procedural skills as a medical doctor is a complex issue. At university, a large body of theoretical work is mastered, including anatomy, physiology and pathology. In the clinical years, this knowledge is combined with patient care and the first rudimentary procedural skills are learned. In South Africa to date, this has been done in a haphazard manner without determining an end point or list of core requirements. Little has been written about the actual process of transferring skills to the aspiring doctor. Generally this is done in a spirit of an apprenticeship, requiring a willing teacher and a receptive learner. Tertiary hospitals form the main backdrop for introducing and learning clinical skills, which are then mastered during the pre-registration year.

It is an accepted fact that the undergraduate curriculum is only the first stage of medical education, forming the foundation for future learning and practice as a professional. The findings of this study

affirm the literature in suggesting that skills training at university needs to be standardised through the introduction of a core curriculum in procedural skills. This would be the responsibility of the HPCSA, as is the case with the GMC in the United Kingdom. Learning outcomes should be fashioned around the relevant competencies required in the pre-registration year. It is also vital for the training of new doctors that this internship year be optimised in terms of opportunities and backup as part of a strategy to improve skills training.

To better understand the process of learning procedures, it is essential to include the pre-registration year in the undergraduate training. The progression from medical student to intern doctor is characterised by an exponential growth in the acquisition and mastery of clinical skills. This is accompanied by a certain level of anxiety and fear, as interns are often left on their own. A newly-qualified doctor needs to learn a host of procedures and practical skills that arise from managing patients in their allotted hospitals. This is usually achieved by the end of the pre-registration year. The role played by regional hospitals in training junior doctors cannot be emphasised enough.

The findings of this study suggest that, after following a year of internship, junior doctors working in regional hospitals in the Western Cape perceived themselves as being competent and ready to progress to the community service level, where they will have to help teach the new interns. It was also found that the level at which interns functioned in these hospitals was very high when compared to other countries.^{7,13,24} This implies that, with sufficient support and supervision, the combination of university training and an internship year is adequately preparing junior doctors for independent practice in this region. It may be of interest to repeat this exercise in a couple of years, when all universities will follow a new format of teaching with greater focus on practical skills. 🧑🏻

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