

## A pilot study to determine the profile of recovery room nurses in Johannesburg hospitals

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### Abstract

**Background:** Apart from anecdotal evidence, very little is known of the recovery room nurses in South Africa.

**Method:** An exploratory, prospective, descriptive pilot study was carried out in the recovery rooms of six Johannesburg hospitals, three academic and three private hospitals, one from each of the major private hospital groups. An appointment was scheduled and data were collected from either the theatre nursing manager, sister in charge of the recovery room or the nursing manager. The data collected reflected a brief profile of the selected recovery rooms and the demographic and education profile of nurses working there in August 2011.

**Results:** Nurse:patient ratios were difficult to determine. Agency staff was used by one recovery room. The other recovery rooms used their permanent staff to work overtime. All the hospitals used anaesthetic nurses to double up when necessary. Only one of the recovery rooms had a supernumerary anaesthetist available during the day. A total of 49 nurses were working in the six recovery rooms during August 2011. The majority, 95.9% (n = 47), of the recovery room nurses were females and 4.1% (n = 2) were males. The average age of the recovery nurses was 44 years (25–63 years), with a median of 41 years. The experience of the recovery room nurses ranged from one month to 35 years with an average of 8.6 years. The majority of nurses, 57.1% (n = 28), were professional nurses, and 42.9% (n = 21) were enrolled nurses. Of the 28 professional nurses, 32.0% (n = 9) had no postgraduate training. The remaining 19 nurses had the following postgraduate qualifications: management and operating room technique 17.9% (n = 5), critical care 14.3% (n = 4), and education 10.7% (n = 3). The six-month anaesthetic nurse qualification, that is not an official South African Nursing Council-endorsed postgraduate qualification, was held by 35.7% (n = 10) of the professional nurses and 4.8% (n = 1) of the enrolled nurses. All the recovery rooms had an in-service education programme.

**Conclusion:** There is a need to determine the profile of recovery room nurses in South Africa and to establish an appropriately trained and competent recovery room nursing workforce.

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### Introduction

Do you know to whom you are entrusting your recovery room patients?

Before we can answer this question we first have to explore the question: Who should look after your patient in the recovery room?

The International Standards for a Safe Practice of Anaesthesia 2010,<sup>1</sup> as adopted by the World Federation of Societies of Anaesthesiologists (WFSA), states that an anaesthetist may transfer care in the recovery room to

appropriately trained personnel, but must retain overall responsibility for the patient during the post-anaesthesia recovery period, until the patient has recovered adequately.

The South African Society of Anaesthesiologists (SASA) guidelines stipulate that “it is the responsibility of the institution to ensure that the staff appointed to the recovery room is trained and competent” and that “...a registered or enrolled nurse trained and competent in the recovery room care must be present at all times.”<sup>2</sup> Furthermore, the SASA guidelines go on to state that “... the ratio of nursing staff trained in the recovery room care to patients needs to be

flexible,” that there should be at least one nurse for every two patients, but that, while the patient has not recovered protective reflexes, this should be one-on-one.<sup>2</sup>

The guideline from the European Society of Anaesthesiologists (ESA) is more specific, and states that staffing should depend on the established practices of the individual hospitals and the circumstances in which the patient is admitted to the recovery room. The guideline further acknowledges that nursing skill will vary, but advises that nurses should preferably have specialised training in disciplines such as intensive care and anaesthesia.<sup>3</sup>

The American Society of PeriAnesthesia Nurses (ASPA) states that “staffing is based on patient acuity, census, patient flow processes and physical facility. The perianesthesia-registered nurse uses prudent judgement to determine nurse:patient ratios, patient mix and staffing mix that reflect patient acuity and nursing intensity.”<sup>4</sup> Suggested nurse patient ratios in phase 1 post-anaesthesia vary among two to one, one to one and one to two.

The South African Theatre Nurse Organisation (SATN) is an organisation committed to improving the professionalism of perioperative nurses. However, their position statement only addresses the role of the perioperative nurse in operative care and staffing in the operating room, and there is no mention of the recovery room and the nurses working there.<sup>5</sup>

These guidelines are very vague and open the door to potentially unacceptable or marginal practices. What exactly does “appropriately trained” or “trained and competent” mean? Sometimes it is easier to determine when someone is “not appropriately trained” or “not trained and not competent.”

The recovery room is defined by De Witt as a “high-activity critical care environment where patients recover in the immediate postoperative period.”<sup>6</sup> This environment typically has rapid turnover, high volume and, often, high acuity patients.<sup>7</sup> The complexities and variables of recovery room patients are unique and pose a challenge when providing adequate nurse staffing.<sup>8</sup>

There should be no doubt that patients in the recovery room require, as in intensive care units (ICU), specialised nursing care. Barone et al are of the opinion that: “The specialized intense nursing care provided in the post-anaesthesia care unit (PACU) is now well recognized as crucial to optimize outcomes for the patient undergoing modern anaesthesia and surgical techniques.”<sup>9</sup> Specialised nursing care is not just task orientated but entails a deeper scientific understanding “of the what,” for example charting the

vital signs vs. understanding the vital signs that the patient presents with and taking the necessary action.

We return to the original question: Who should look after your patient in the recovery room? Given the level of care that recovery room patients require, it is highly recommended that specialised nurses should be part of every recovery room staff establishment. Furthermore, should the guiding principles for recovery room staffing (numbers and skill mix) not be determined by the specific context of individual recovery rooms?

For example:

- If it is standard practice to extubate patients in the recovery room, then the skills mix must emphasise specialised nurses with training in intensive care or anaesthesia and recovery. More nurses will clearly be required to maintain appropriate nurse:patient ratios.
- If there is a supernumerary anaesthetist available for the recovery room, then a less specialised skills mix and fewer nurses might be acceptable.

Apart from anecdotal evidence, very little is known of the recovery room nurses in South Africa. Therefore a pilot study was undertaken with the aim to describe the demographic and educational profile of recovery room nurses.

## Method

An exploratory, prospective, descriptive pilot study was carried out in the recovery rooms of six Johannesburg hospitals. Convenience sampling was used to select the recovery rooms from three academic and three private hospitals, one from each of the major private hospital groups.

Approval to conduct the study was obtained from the Ethics Committee of the University of the Witwatersrand and the respective hospitals.

An appointment was scheduled and data were collected from either the theatre nursing manager, sister in charge of the recovery room or the nursing manager. The data collected reflected a brief profile of the selected recovery rooms and the demographic and education profile of nurses working there in August 2011. Data were captured on a structured spreadsheet and descriptive statistics were used.

## Results

The contact people from whom the data were collected were amenable to meeting with the researchers, and the perception was that they experienced the interview as “somebody is listening.”

### Recovery room profile

Only one recovery room had 1.5 recovery bays per theatre. The remainder of the hospitals had fewer recovery bays than the ratio suggested by the SASA guideline. No recovery room bay:theatre ratio could be determined for these recovery rooms, as recovery bays are used creatively, the staff doing “the best they could to accommodate patients.”

Nurse:patient ratios could not be determined either. All the recovery rooms reported that a nurse:patient ratio of 1:1 and 1:2 was appropriate. When confronted about how they managed to achieve this with the available staff complement, one of the responses was: “We cope with what comes our way.”

Agency staff was used by one recovery room. The other recovery rooms used their permanent staff to work overtime. All the hospitals used anaesthetic nurses to double up when necessary during the day. Staffing over weekends and night duty in five of the recovery rooms was provided by an “on-call system” of day staff or scrub nurses and anaesthetic nurses that doubled up as recovery room nurses. One recovery room had a dedicated night duty team.

Only one of the recovery rooms had a supernumerary anaesthetist available during the day. Another recovery room had access to an ICU doctor; the ICU is located across the corridor from the recovery room.

### Recovery room nurses’ demographic profile

A total of 49 nurses were working in the six recovery rooms during August 2011. The majority, 95.9% (n = 47), of the recovery room nurses were female, and 4.1% (n = 2) were male.

The average age of the recovery nurses was 44 years (25–63 years), with a median of 41 years. Of this sample of 49 recovery room nurses, 10 nurses were 60 years and older, and six were 30 years and younger (Figure 1).

The experience of the recovery room nurses ranged from one month to 35 years, with an average of 8.6 years. There were 11 nurses with more than 20 years of experience (Figure 2).

### Recovery room nurses educational profile

The majority of nurses, 57.1% (n = 28), were professional nurses, and 42.9% (n = 21) were enrolled nurses.

Of the 28 professional nurses, 32% (n = 9) had no postgraduate training. The remaining 19 nurses had the following postgraduate qualifications: management and operating room technique 17.9% (n = 5), critical care 14.3% (n = 4) and education 10.7% (n = 3). The six-month

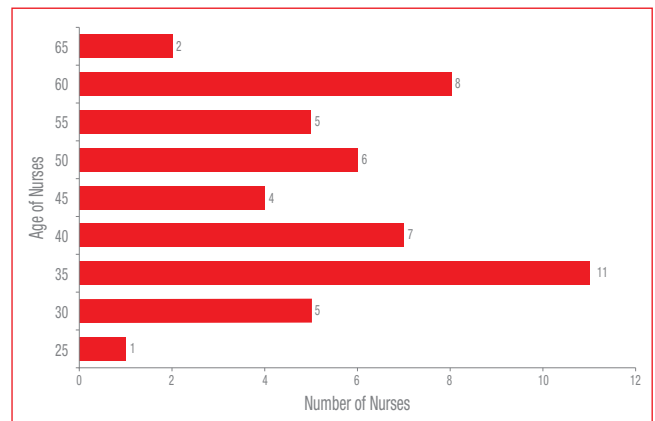


Figure 1: Age of recovery room nurses

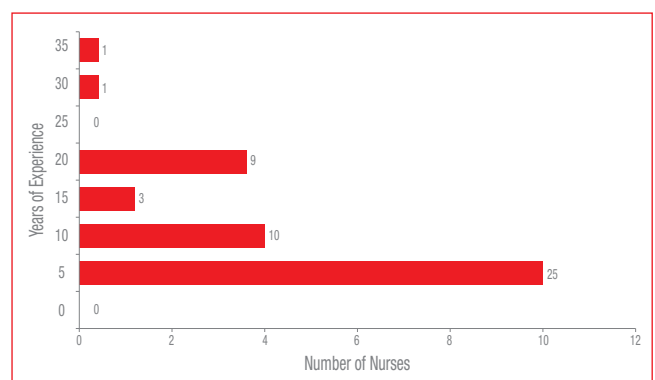


Figure 2: Years of experience of recovery room nurses

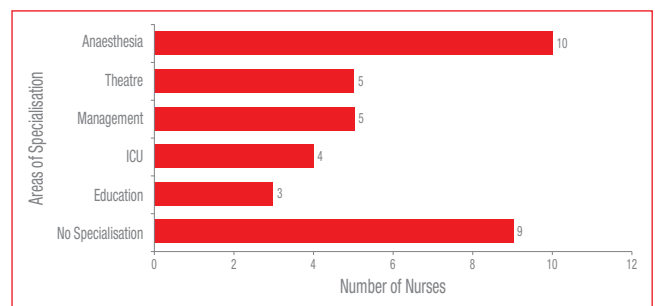


Figure 3: Areas of specialisation of professional recovery room nurses

anaesthetic nurse qualification, which is not an official South African Nursing Council (SANC) postgraduate qualification, was held by 35.7% (n = 10) of the professional nurses and by 4.8% (n = 1) enrolled nurses. Some nurses also had more than one postgraduate qualification (Figure 3).

All the recovery rooms reported that the following education was offered to their nurses:

- An orientation programme
- In-service training (this was general training for all theatre nursing staff and included some recovery room aspects)
- “On-the-spot training”
- Protocols.

In one recovery room an anaesthetist was involved in the weekly in-service training programme of the recovery room nurses. Another recovery room encouraged their nurses to do the Advanced Cardiovascular Life Support (ACLS) course. The nurses working in the private sector were encouraged to do a six-month anaesthetic nurse course offered by a private hospital group. SATS has regular Saturday morning education programmes that sometimes address specific recovery room topics.

## Discussion

It was not possible to determine what nurse:patient ratios are applied in these six recovery rooms. Poor staffing ratios impact on nurses' ability to perform nursing duties safely.<sup>10</sup> The guidelines of WFSA, SASA, ESA and ASPAN suggest various nurse:patient ratios for recovery rooms. However, Mamaril et al searched the literature for scientific staffing evidence in an attempt to validate ASPAN's staffing ratios. One of their conclusions was that there is a paucity of evidence related to safe staffing ratios.<sup>11</sup> It is important that in the South Africa, where recovery room context and practice differ across hospitals (e.g. where patients are extubated), scientific nurse:patient ratios in recovery rooms should be established.

Only one of the recovery rooms used agency staff, but it is known anecdotally that, nationally, recovery rooms do make use of agency staff. No research or evidence is available on agency nursing staff in South Africa, but what is generally known is that the use of agency staff has increased, and that the majority of the agency nursing workforce comprises nursing staff permanently employed elsewhere who are moonlighting, often without their formal employer's official awareness or consent.<sup>12</sup>

The majority of recovery rooms in this study used their permanent staff to work overtime or an on-call system to provide an after-hour recovery room service. Managers should be aware that working long hours contributes to stress and burnout in nurses.<sup>13</sup> Increased risk of error has been reported in nurses working more than 12.5 hours per day, or working overtime.<sup>14</sup> This risk increases when long shifts and overtime is combined.<sup>10</sup>

One recovery room had a supernumerary anaesthetist available. The ESA guideline suggests that an anaesthetist, supernumerary to the requirements in the operating theatres, should be immediately available for the recovery room.<sup>3</sup> If it is standard practice for patients to be extubated in the recovery room, the guideline emphasises that the extubation procedure is the responsibility of the anaesthetist. Supernumerary anaesthetists are not commonly available in

recovery rooms in South Africa but, if they are available, a less specialised nursing skills mix and fewer nurses might be acceptable in the recovery room.

The average age of nurses working in the six recovery rooms was 44 years. This is in keeping with the 40–45 age range of perioperative nurses stated by SATS.<sup>5</sup> It is extremely important to note that 10 of the 49 nurses in this sample were 60 years and older and are, therefore, near mandatory retirement age. The average years of recovery room experience in this study was 8.6 years. The average years of experience of the nurses younger than 50 years was 3.8 years. A recent study of nurses that enrolled for a postgraduate critical care diploma in Johannesburg showed that the average age of these nurses was 39 years.<sup>15</sup> In South Africa it seems that we have more and more older nurses with less experience in the workplace.

Morrison suggests that nursing care without expertise may be considered a potentially harmful intrusion for the patient. They concluded in their study, looking at the effects of nursing staff inexperience on the occurrence of adverse events, that errors are more likely to occur when nursing inexperience is combined with staff shortages, poor supervision and lack of support staff.<sup>16</sup>

In South Africa there are different categories of nurses, professional or registered nurses, staff nurses and auxiliary nurses, that work in recovery room. The training of the different categories of nurses varies remarkably, resulting in widely differing outcomes. It is also important to note that the different categories of nurses function legally within respectively very different scopes of practice, an aspect which is not widely understood. Again there are no national data available on which categories of nurses work in the recovery room and to what extent they function within their specific scope of practice. De Witt reported on a programme where licensed practical nurses (equivalent of South African staff nurses) were successfully introduced in a recovery room in the United States. However she emphasises that these nurses must be carefully selected and their roles and scope of practice must be understood by the entire recovery room team.<sup>6</sup>

The competencies needed to be a successful recovery room nurse have been compared to those required by an ICU nurse.<sup>17</sup> Of the sample, only four registered nurses had an ICU qualification and 10 had completed a six-month anaesthetic nurse course. Currently there is no SANC-endorsed postgraduate training for recovery room nurses in South Africa. Frederico describes the successful incorporation of advanced practice nurses in the peri-anaesthesia setting. The qualifications required of the

advanced practice nurse in this programme were: a master's degree, certification for prescriptions, recovery room or ICU experience, certification by a national credentialing organisation and a current Basic Life Support and ACLS.<sup>18</sup> In South Africa, where recovery rooms will increasingly be challenged with a lower than desired skills mix, advanced practice nurses might be of value as, for example, a career path for competent registered nurses.

In a contextual study in northern Gauteng, Van Huyssteen and Botha determined that the recovery room nurses lacked knowledge regarding six specific airway emergencies in postoperative adult patients. The average score obtained by the nurses was 43%, and only one respondent had a score of above 70%. All recovery room nurses in this study were exposed to several ongoing education initiatives.<sup>19</sup> Perrie, in a study determining the knowledge level of critical care nurses, established that the average score of nurses working in ICU was 47.6%, and 94.1% of the nurses took part in one or more continuing professional development orientated activities.<sup>20</sup>

## Conclusion

Odam described the nursing shortage as follows: "The current and future nursing shortage is very different from the shortages of the past, because it is not only about the number of nurses but also about nurses with the needed skills and experience. This shortage is more complex and will be much more difficult to remedy."<sup>21</sup>

The anaesthetic community and especially SASA has a long-standing relationship with nursing and was instrumental in the 1960s in establishing ICU nursing training in South Africa.<sup>22</sup> The question arises: Is it not time for SASA to get to know who is looking after their patients in the recovery room? Should SASA also not be working together with recovery room nurses to establish a more appropriately trained and competent recovery room workforce that can render safe patient care?

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