Southern African Journal of Anaesthesia and Analgesia. 2021;27(1)15-23
https://doi.org/10.36303/SAJAA.2021.27.1.2481

South Afr J Anaesth Analg
ISSN 2220-1181 EISSN 2220-1173

ORIGINAL RESEARCH

Anaesthetic nurse training in KwaZulu-Natal government hospitals: exploring strengths and deficiencies

A Maharaj, L Cronjé, S Jithoo

Department of Anaesthesia and Critical Care, Nelson R Mandela School of Medicine, University of KwaZulu-Natal, South Africa
Corresponding author, email: *maharajarusha@gmail.com*

Background: The anaesthetic nurse is a key assistant to the anaesthetist and integral to the provision of safe anaesthesia. Inadequate undergraduate training in South Africa necessitates anaesthetic nurses to acquire the requisite skills and knowledge in the workplace. Few studies explore the challenges faced by practising nurses to acquire such skills. This study sought to explore the experiences of working anaesthetic nurses to gain their perspectives on workplace-based learning, skills acquisition and how to improve anaesthetic nurse training.

Methods: We used qualitative methodology comprising an English-medium, self-administered, anonymous questionnaire. A purposive sampling method was used, and 73 anaesthetic nurses working in five government hospitals in eThekwini, KwaZulu-Natal were recruited. Questionnaires were thematically analysed, and simple statistical analysis was used for quantitative data.

Results: Most anaesthetic nurses received little or no undergraduate anaesthesia training and participants identified subsequent workplace-based training as inconsistent, and insufficient. Despite most participants' arbitrary allocation to the position of anaesthetic nurse, the majority found their work stimulating and identified themselves as team-players, adaptable, and willing to learn. Further training and hands-on skills acquisition were keenly sought. Factors impacting positively on their learning and job satisfaction included a confident anaesthetist who was willing to teach and collaborate on learning, provide positive feedback, and include the anaesthetic nurse in case planning. Participants identified crucial areas for further development. In-theatre teaching and practical group tutorials led by anaesthetists were suggested as preferred training modalities. Responses to hypothetical case scenarios demonstrated qualities in the participants that are valued in the anaesthetists' non-technical skills framework.

Conclusion: It is evident that there is insufficient formal training and inconsistent training methods of the current anaesthetic nurses in the five study hospitals. The workplace-based learning experiences of our study participants has given us a unique perspective from practising anaesthetic nurses and may be used to inform the formulation of appropriate training curricula and improve the learning partnership with anaesthetists. This should ultimately improve anaesthetic nurse job satisfaction and the theatre team experience.

Keywords: anaesthetic nurse training, technical and non-technical skills, interpersonal relationships, nurse education

Introduction

In South Africa, the importance of the role of the anaesthetic nurse has been recognised by the South African Society of Anaesthesiologists (SASA)[1] but no formal or accredited anaesthetic nurse training programme currently exists,[2] and a lack of suitably trained anaesthetic nurses has been identified.[3] As a key assistant to the anaesthetist, an anaesthetic nurse is integral to the performance of a complex set of skills and if appropriately trained, may reduce the occurrence of anaesthesia-related adverse events.[4,5] International anaesthesia bodies have instituted accredited post-graduate anaesthesia nurse training programmes where core competencies have been defined as well as programmes for continuing professional development.[3,6-9]

Locally, the role of the anaesthetic nurse is distinct from that of nurse anaesthetists or non-physician anaesthetists, who may administer anaesthesia independently or under physician supervision. Roles and duties of anaesthetic nurses are narrowly described in their job description and focus on preparation of the theatre for the anaesthetist, assisting the anaesthetist, administrative nursing duties and basic technical skills, but underplay the varied and specialised technical skills and non-technical roles required of them.

The position of 'anaesthetic nurse' is most often filled by ad hoc allocation of enrolled nursing assistants (ENA) or enrolled nurses (EN) who receive no formal anaesthetic training and are expected to acquire the requisite skills 'on the job'.[2] Anecdotal information from anaesthetic nurses in our unit suggested that their limited undergraduate training often results in a significant shortfall between the knowledge and skill expected of them and the training and preparation they were exposed to. Three broad areas of importance in the training and performance of the duties of an anaesthetic nurse have been identified: the acquisition of technical skills, competency in non-technical skills and interpersonal relationships between anaesthetists and anaesthetic nurses.[4,5,10,11]

The main aim of the study therefore was to explore the learning experiences of anaesthetic nurses in their theatre work environment in urban government hospitals in the eThekwini Metropole to gain their perspectives on how to improve anaesthetic nurse training.

Methods

This qualitative study comprised an English-medium, self-administered, anonymous questionnaire. A purposive sampling recruitment method was used. Inclusion criteria were all nurses, with any level of qualification or experience, working in the position of 'anaesthetic nurse' in operating theatres at five eThekweni government hospitals. Ethics approval was obtained from the relevant authorities (BREC: BE004/18), and informed consent from the study participants. A pilot study of five participants was conducted and feedback used to refine the questionnaire. These participants were not used in the final study.

An interpretive research paradigm was adopted and a predominantly phenomenological theoretical approach was used.[12] The responses to open-ended questions were categorised based on the themes that emerged, initially by the first author, then independently by the two co-authors. Themes were further developed through discussion between all authors, and through comparison to the literature. The study was reported using the Standards for Reporting Qualitative Research (SRQR) guidelines.[13] Simple descriptive statistics were used to analyse quantitative data. Categorical data were reported as number (n) and percentage (%), generated from a 5-point Likert scale using SPSS statistics version 25 (IBM, Chicago, IL, USA).

Results

Demographics and career profile

Data was collected from August to October 2018. One hundred and thirty-six questionnaires were distributed to five hospitals comprising three regional, one tertiary and one central level hospital. The overall response rate was 54% (73/135). Table I displays the characteristics of our study participants.

Table I: Participant characteristics

Total number of participants	***n* = 73 (54%)**
Age range (median)	25–59 years (39)
Gender	
Female	62 (87%)
Male	9 (13%)
First language	
isiZulu	55 (75%)
English	14 (19%)
isiXhosa	2 (3%)
Afrikaans	2 (3%)
Level of nursing qualification	
Enrolled nursing assistants (ENA)	3 (4%)
Enrolled nurses (EN)	51 (70%)
Professional/Registered nurses	6 (8%)
Operating theatre nursing science course	5 (7%)
Answer omitted	8 (11%)
Number of years spent working as an anaesthetic nurse	2–20 years (mean 7 years)

For most participants (52; 71%), nursing was stated to be their first career choice, motivated by a sense of responsibility to community or a passion to 'help people'. In contrast, the majority of participants (62; 85%) indicated that the process of allocation to the theatre domain or to anaesthesia itself was done without them being given a choice. While most participants did indicate a desire to further their nursing studies, many expressed frustration at the challenges and long waiting times involved in achieving this within a government institution.

Based on the structure of the questionnaire, findings are presented in seven sections; (i) training and curricular issues; (ii) workplace-based learning and satisfaction with allocation; (iii) interpersonal relationships exploring experience, gender, race and language; (iv) workplace role and interactions with the anaesthetist; (v) theatre preparation; (vi) skills acquisition and further training; and (vii) case scenarios. Addendum 1 provides a breakdown of the questionnaire and Likert scale responses.

Training and curricular issues

The majority of participants (50; 76%), whether trained in government or private colleges, stated that no or minimal anaesthetic modules were taught at nursing college and that the theory learnt was insufficient for their day-to-day practice (Q1.14). Participant suggestions for curricular topics included a basic introduction to anaesthesia and equipment, recognition of common anaesthetic-related complications and difficult airway management.

Workplace-based learning and satisfaction with allocation

As newly allocated anaesthetic nurses in each of the hospitals, participants described being paired with more senior, experienced anaesthetic nurses in order to familiarise them with their duties (Q1.16). The duration of this 'shadowing' or 'informal supervised training' varied from one week to six months. With the exception of one institution, very few participants received any formal tutorials or orientation from the anaesthetic doctors themselves.

Despite the seemingly arbitrary allocation to the anaesthetic nurse position, and the majority not specifically having chosen anaesthesia, it was encouraging to note that 58 (84%) participants did in fact find anaesthesia an interesting, dynamic discipline with many learning opportunities (Q1.17). Participation in airway management, gaining insight into pharmacology, management of trauma and resuscitation, and the appeal of working as part of a team were some of the highlights mentioned in the free text section of this question.

Interpersonal relationships exploring experience, gender, race and language

Almost 80% (54) of participants indicated that the anaesthetist they work with affects their daily work performance in theatre (Q2.1). Attributes of the anaesthetist that impacted on participants' performance included their organisational skills and mannerisms toward the nurses. In-theatre teaching by the anaesthetist improved the participants' morale, confidence, and interest in anaesthesia. External factors that affected participant

performance negatively included the complexity of the surgical case or equipment problems.

More participants (46; 67%) preferred working with a 'senior' anaesthetist (Q2.2.2); reasons included a more efficiently run slate, competent responses to emergencies, better knowledge and hence learning opportunities. In contrast, comments from those participants (21; 33%) who preferred working with a junior anaesthetist, described a feeling of 'learning together' with the junior doctor, an atmosphere more tolerant to mistakes, as well as a manner of communication that was felt to be more respectful and 'less superior'.

Participants' preference for working with an anaesthetist of the same first language (Q2.3), race (Q2.4) and gender (Q2.5) were explored. Just over half the participants did not express a preference for working with an anaesthetist who spoke the same first language (40; 56%). In the free-text section of this question, reasons cited included English being the accepted medium of communication in the workplace as well as the benefit of being able to learn a new language and interact with people of different backgrounds. Those participants who did indicate a preference for working with an anaesthetist sharing the same first language indicated that speaking this language led to greater clarity of communication and hence allowed them to work more efficiently.

Neither the race (67; 96%) nor gender (60; 90%) of the anaesthetist was identified as making the working relationship 'easier'. Explanations conveyed positivity around being able to work in a multiracial, multicultural environment as diversity fostered learning and good relations between people. Participants indicated that good communication, rather than race or gender, enabled cooperation and working well together. Only one participant noted that s/he felt more comfort, approachability and ease of communication with colleagues of the same race.

Work-place role and interactions with the anaesthetist

While some participants indicated that they did not always feel involved in the anaesthetist's plan and decision-making (Q2.6), the majority indicated that their anaesthetists were approachable if they had questions about the case (Q2.8,) and were willing and eager to teach (Q2.7).

Only 47 (57%) participants indicated that the anaesthetist let them know when they had done a good job or showed appreciation for their effort (Q2.10). Perceptions existed that the anaesthetist sometimes directed their frustrations at the anaesthetic nurses, e.g. for defective equipment. Feedback about their performance during a case (Q2.11) was important to most participants (57; 83%), as it helped them improve knowledge, skills and hence work performance. However, many stressed that feedback should be constructive and delivered in a professional and sensitive manner.

Theatre preparation

Participants mostly received advice and assistance in the preparation for emergencies and major cases (Q2.9), (51; 78%). Several responses indicated that the anaesthetist simply requesting drugs/equipment timeously made a considerable difference to preparation. Reasons for inadequate theatre preparation were investigated along with the anaesthetist's potential responses in such instances. These were then rated by participants as happening rarely, sometimes or often. Findings are shown in Table II below.

Table II: Reasons for inadequate theatre preparation and anaesthetists' responses

Q 2.12 If my preparation for a case is inadequate, the anaesthetist usually responds by:	**Frequency of occurrence (%)**		
	Rarely	**Sometimes**	**Often**
a) Giving me time to make additional preparation	15	51	34
b) Explaining to me what was expected or what was to be done	17	44	39
c) Teaching me at the end of the case	39	41	20
d) Shouting at me	33	49	18
e) Complaining to others in theatre	58	30	12
f) Description of other examples (free text)	–	–	–

Q 2.13 If my preparation for a case is inadequate it is usually because:	**Frequency of occurrence (%)**		
	Rarely	**Sometimes**	**Often**
a) I am not familiar with the case and what is needed	52	44	4
b) The anaesthetist did not instruct me adequately on the set up	25	65	10
c) I did not understand the anaesthetic plan or the anaesthetist's instructions	57	35	8
d) I understood the instructions, but I did not know how to do the tasks or preparation that the anaesthetist asked of me	66	31	3
e) I was given too many duties to do at once	18	50	32
f) Equipment was not available	25	35	40
g) There was not enough time to prepare	20	55	25
h) Description of other examples (free text)	–	–	–

If the theatre preparation was felt to be inadequate by the anaesthetist, only 39% of them explained to the anaesthetic nurse why this was so or provided corrective teaching (20%) at the end of the case. Participants experienced this as a lost teaching opportunity, hindering their ability to improve for future cases. It was also disconcerting to note that 67% reported that anaesthetists 'often' or 'sometimes' responded by 'shouting' at the anaesthetic nurse and by 'complaining to others in theatre'.

Common reasons for inefficient theatre preparation selected by anaesthetic nurses included having too many duties to perform at once (51; 82%), not having enough time to prepare (51; 80%) and non-availability of equipment (39; 61%). Notably some participants stated that working with more than one anaesthetist at a time brings about the challenge that the anaesthetic nurse has to respond to multiple requests at once.

Skills acquisition and further training

Participants agreed that learning new skills improved their confidence (66; 90%) (Q3.2) and job satisfaction (64; 88%) (Q3.3). The benefits identified were having better insight into the conduct of the anaesthesia, being of greater assistance to the anaesthetist (their ability to perform certain tasks freed up the anaesthetist to attend to more complex matters) and being able to work independently without requiring the assistance of a senior anaesthetic nurse during more complex cases. Learning new skills reduced the boredom of routine and repetitive job tasks, and added to a sense of motivation, accomplishment and enjoyment in their job. A few participants noted that if courses for anaesthetic nurses were available, such additional qualifications could also possibly aid toward job progression.

Anaesthetic nurses agreed that additional training would be beneficial in the following five areas (Q3.4): airway management, requirements for paediatric anaesthesia, preparation for major trauma cases, anaesthetic emergencies and cardiac cases. Participants also listed further skillsets in which additional training was needed: set up for placement and transduction of arterial lines and central venous catheters, use of infusion pumps, and 'trouble-shooting' on the anaesthetic machine.

In addition to the content of the learning that nurses desired, we enquired as to how they would like to be taught when learning a new anaesthetic skill (Q2.14). Teaching modalities that were favoured by participants (i.e.: rated as "Best" on the 3-point Likert scale) included being taught by an anaesthetist, practical group sessions and in-service training. Lectures at nursing college and being taught by fellow anaesthetic nurses were less favoured methods due to perceptions that anaesthetists were more certain of their knowledge and skills than their nursing colleagues.

Case scenarios

The final part of the questionnaire judged participants' responses to typical work-based case scenarios (Table III). These were included to provide us with a means of assessing potential use of non-technical skills as well as to gain an impression of anaesthetists' interactions with anaesthetic nurses.

Table III: Case scenarios and responses

Scenario 1: (Q4.1)	**Action and responses**
A junior anaesthetist is having a problem with intubation and is becoming a bit panicky. What will you do?	*Positive responses* Calming down the anaesthetist Ensuring appropriate airway equipment is available Call for help *Negative responses* Do nothing (two responses)
Scenario 2: (Q4.2)	**Action and responses**
The anaesthetist mentions that the obstetric patient on table is very hypotensive and may have lost a lot of blood. How would you assist the anaesthetist?	*Positive responses* Fetch intravenous fluids Assist with intravenous access Fetch vasopressors Prepare for blood crossmatch *Negative responses* Nil
Scenario 3: (Q4.3)	**Action and responses**
The anaesthetist appears unaware of an abnormality developing on the monitor. Has this happened to you before? What was your response? How did the anaesthetist respond to you?	*Positive anaesthetist responses* Appreciative Happy to have 'second eye' monitoring *Negative anaesthetist responses* Blaming anaesthetic nurse for the problem Being panicked, shouting Perception that doctors do not want to be told by a nurse of an arising problem
Scenario 4: (Q4.4)	**Action and responses**
As an anaesthetic nurse, have you ever taught the anaesthetist something or helped them adjust their behaviour in any way?	*Positive responses* Teaching theatre etiquette, infection control protocols, use of equipment Advise junior anaesthetist on senior preferences/techniques *Negative responses* Perceptions that anaesthetists considered themselves superior Perceptions that role of nurses is only to assist with manual tasks

Responses in Scenario 1 were generally very helpful and appropriate although two participants chose not to do anything citing dissatisfaction with anaesthetists' attitudes towards them generally. These negative responses suggested that in this hypothetical scenario, interpersonal relationships could possibly have impacted negatively on patient safety. In Scenario 2, most participants responded with appropriate measures. In Scenario 3, almost 50% of participants identified with such an incident and had to alert the anaesthetist to a problem reflecting on the monitors. Descriptions of the anaesthetists' reaction to their response were mostly positive. One participant however described being blamed for the problem, the particular anaesthetist believing it to be the responsibility of the nurse to check all equipment before starting the case. Positive responses to Scenario 4 were described by 27 (52%) participants.

Discussion

The role of the anaesthetic nurse as an assistant in the provision of safe anaesthesia, and our role as anaesthetists in ensuring the level of skill and competence of the anaesthetic nurse are clearly highlighted by SASA.[1] This ultimately prompted the topic of our research study and our attempt to understand anaesthetic nurses' workplace-based experiences in acquiring these skills. The themes that emerged from our study revealed a unique perspective from the anaesthetic nurses' viewpoint in order to reflect on (i) who is the ideal anaesthetic nurse; (ii) what is the ideal training for an anaesthetic nurse; (iii) what qualities make an anaesthetist an ideal work-based learning partner for the anaesthetic nurse and iv) what helps to create an ideal theatre team.

Who is the ideal anaesthetic nurse?

While SASA identifies that a competent, suitably trained anaesthetic nurse is a key element in the provision of anaesthesia,[1] little guidance has yet been given on what 'competent' or 'suitable training' entails. The irony is that this 'ideal assistant' generally enters his/her job as an anaesthetic nurse through arbitrary allocation with no background, training or often choice in that allocation. Most of the participants in our study became anaesthetic nurses in this manner. Despite this, the majority expressed enthusiasm and job satisfaction, and identified the characteristics they believe help them to perform their job well: willingness to learn, adaptability, ambition, enjoyment of hands-on skills and being part of a team. Using these self-identified traits and character strengths, which made them successful and 'competent' in their job, is a novel way to form the basis of (a) defining 'competence' and (b) selection criteria for the type of person who should be chosen as an anaesthetic nurse.

What is the ideal training for an anaesthetic nurse (content and method of training)?

Our study highlighted the perceptions of deficiency and disconnect in the training received by anaesthetic nurses and the actual job requirements of this position. Participants identified some of the curricular/knowledge-based content they would find beneficial in their pre-qualification training as a basis on which to build further work-based learning. The desired theoretical content and procedural skill sets to develop in the workplace were outlined in the findings. These were simply topics identified by this group of study participants, and are by no means a comprehensive list. In-theatre teaching and practical group tutorials led by anaesthetists were identified amongst this study group as the preferred training modalities to best present these topics/skills.

What qualities make an anaesthetist an ideal work-based learning partner for the anaesthetic nurse?

Few aspects of medicine have such a close and interactive a relationship as that between the anaesthetic nurses and anaesthetists. Vigilance, good communication, an ability to anticipate what is needed and teamwork are some of the essential components required from both parties.[14,15] The importance of this dynamic and those aspects that do and do not work to help anaesthetic nurses perform to their best were explored in our study.

As anaesthetists, we may have a particular perspective or idea about what makes an ideal and competent anaesthetic nurse. However, viewing the actions of an anaesthetist through the eyes of an anaesthetic nurse provides a new vantage point and may teach the anaesthetist about what is required from us to be 'competent' in this interpersonal dynamic. The participants in our study have identified positive anaesthetist behaviours that help them best perform their job: mutual respect despite differences in professional rank and personalities, appreciation and understanding of each other's roles, and acknowledgement of one's effort during the course of the day. Poor anaesthetist behaviours identified by participants included shouting, impatience, disorganisation, blaming, unwillingness to teach and lack of constructive feedback.

Transfer of knowledge and the benefits versus shortcomings of adopting a flatter hierarchy in theatre[16] stood out in the questions relating to the experience/seniority of the anaesthetist. An interesting balance and interplay were noted between senior anaesthetists providing confidence, competence and in-theatre teaching; and junior anaesthetists being less intimidating and engaging in co-learning.

Relationship conflict has a profound negative effect on job performance and satisfaction and decreases a member's willingness to remain an effective team member.[17] In contrast to other studies,[18] our study did not identify language, gender and race diversity as having a big or negative influence on interpersonal relationships in the theatre work environment, and diversity in the workplace was generally viewed positively.

What helps to create an ideal theatre team?

The aviation industry was the first to acknowledge that technical competence alone was not sufficient to guarantee safe performance in high-risk settings and anaesthetists' non-technical skills (ANTS)[11,19] were derived from research in this area. These non-technical skills are equally important for anaesthetic

nurses in maintaining cohesion amongst the theatre team and ensuring patient safety.[5,11,7,19-23]

Although difficult to assess ANTS in a questionnaire, we did feel it important to extract and interpret information from our participants that was pertinent to the ANTS framework (communication, teamwork, leadership, decision making and situational awareness). We did so by means of hypothetical case scenarios. These scenarios highlighted the need for anaesthetic nurses to have overall awareness of situations in theatre in order to anticipate and plan accordingly. Skills required of them include the need to coordinate and prioritise tasks, assist during emergencies/unanticipated events, and communicate effectively despite differences in organisational hierarchy.[11,20-22] Responses to our case scenarios revealed insight amongst the majority of participants in these areas. Participants seemed to have appropriate knowledge and displayed the qualities reflected in the ANTS framework, however it is difficult to assess if this is happening in reality. If anaesthetists are not experiencing this level of skill from the their anaesthetic nurses, then it merits exploration into the possible impediments to anaesthetic nurses performing at their best, and the reason for a possible disconnect between a willingness to help and the ability to do so.

Safety in anaesthesia

While our study focused on the needs analysis of this group of anaesthetic nurses, rather than on the specific impact of their training and interpersonal work relationship on patient safety, studies in international literature confirm that poor communication and substandard education and training contribute significantly to human error and resultant complications in the theatre environment.[5,20,24] Responses from our participants echo the perception that improved nurse training would allow them to perform their work tasks more knowledgably, confidently and efficiently, and the potential to impact positively on patient safety.

Recommendations

During the past five years, SASA has engaged with the South African Nursing Council (SANC) to formulate a framework of core competencies and scope of practice for anaesthetic nurses. Implementation of any working documents has unfortunately not yet been successful (personal correspondence).[25] In the interim, SASA has focused on creating platforms for anaesthetic nurse training in the form of workshops.

Our study can contribute to the collaboration between SASA and the SANC as the findings have provided the perspective of a working anaesthetic nurse into their current training and skills deficits and their suggestions for improvement and a conducive learning partnership. In addition, the authors recommend appropriate, deliberate selection of nurses for allocation to the theatre anaesthesia domain in individual hospitals. A combination of formal tutorials and ongoing in-theatre teaching from anaesthetists focusing on technical and non-technical anaesthesia skills is advised.

Limitations

An English medium questionnaire tool was used. For second-language English speakers, this may have limited expression in a written format for open-ended questions. The long length of the questionnaire tool may have resulted in unwillingness to comment in open-ended questions and could possibly account for the low overall response rate of 54% (73). The study sampled hospitals only in the KZN government setting and may not necessarily be generalisable to the private sectors or other regions of South Africa.

Conclusion

It is evident that there is insufficient formal training and inconsistent training methods of the current anaesthetic nurses in the five study hospitals. We believe finding the right candidate as anaesthetic nurse, the right teaching methods and the right anaesthetist mentors is required to ensure the "suitably trained and competent nurse" as stipulated by SASA".[1]

The workplace-based learning experiences of our study participants have given us a unique perspective from practising anaesthetic nurses and may be used to inform the formulation of appropriate training curricula and improve the learning partnership with anaesthetists. This should ultimately improve anaesthetic nurse job satisfaction and the theatre team experience.

Acknowledgements

We acknowledge the contribution of all the participants in this study.

Conflict of interest

The authors declare no conflict of interest.

Funding source

None.

Ethical approval

Ethical approval was obtained from the University of KwaZulu-Natal Biomedical Research Ethics Committee: BE004/18.

ORCID

A Maharaj https://orcid.org/0000-0003-0359-0934
L Cronjé https://orcid.org/0000-0001-5508-7471
S Jithoo https://orcid.org/0000-0003-4232-9712

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Addendum 1: Quantitative data obtained from the questionnaire

QUESTION ONE										
1.2	Gender	Female 62 (87.3%)				Male 9 (12.7%)				
1.3	Qualification	ENA 3 (4.5%)	EN 51 (76.1%)		PN 6 (9%)		OT Tech 5 (7.5%)		Other 2 (2.7%)	
1.6	Is this a government or private college?	Government 36 (50%)				Private 36 (50%)				
1.7	What is your first language?	English 14 (19.2%)	isiZulu 55 (75.3%)			isiXhosa 2 (2.7%)		Afrikaans 2 (2.7%)		
1.11	Did you have another job or qualification before nursing?	Yes 17 (23.9%)				No 54 (76.1%)				
1.12	Was nursing your first choice as a career?	Yes 52 (72.2%)				No 20 (27.8%)				
1.14.1	Do you think the anaesthetic theory you learnt at college was suitable, keeping in mind the work you do from day to day?	Yes 16 (24.2%)				No 50 (75.8%)				
1.14.3	Do you think the time allocated to anaesthetics in nursing college was sufficient?	Yes 7 (14.6%)				No 41 (85.4%)				
1.17	Do you find anaesthesia interesting?	Yes 58 (84.1%)			Neutral 11 (15.1%)			No 0		
QUESTION TWO		**STRONGLY AGREE**	**AGREE**		**NEUTRAL**		**DISAGREE**		**STRONGLY DISAGREE**	
2.1	The anaesthetist I work with influences my performance	19 (27.9%)	35 (51.5%)		9 (13.2%)		4 (5.9%)		1 (1.5%)	
2.2.1	I prefer to work with a junior anaesthetist (medical officer/junior registrar)	3 (4.5%)	19 (28.4%)		18 (26.9%)		23 (34.3%)		4 (6%)	
2.2.2	I prefer to work with a senior anaesthetist (senior registrar/consultant)	15 (21.7%)	31 (44.9%)		16 (23.2%)		6 (8.7%)		1 (1.4%)	
2.3	It is easier for me to work with an anaesthetist who speaks the same first language as I do	15 (21.1%)	16 (22.5)		17 (23.9%)		17 (23.9%)		6 (8.5%)	
2.4	It is easier for me to work with an anaesthetist who is of the same race as me	3 (4.5%)	4 (6%)		17 (25.4%)		28 (41.8%)		15 (22.4%)	
2.5	It is easier for me to work with an anaesthetist who is of the same gender as me	1 (1.4%)	2 (2.9%)		20 (28.6%)		33 (47.1%)		14 (20%)	
2.6	I often feel involved in the anaesthetist's plan and decision making	9 (13%)	32 (46.4%)		10 (14.5%)		13 (18.8%)		5 (7.2%)	
2.7	In general, the anaesthetists are willing and eager to teach me	13 (19.4%)	32 (47.8%)		13 (19.4%)		7 (10.4%)		2 (3%)	
2.8	In general, anaesthetists are approachable if I have a question about anaesthetics	15 (23.1%)	39 (60%)		7 (10.8%)		4 (6.2%)		0	
2.9	In general, anaesthetists often advise me and assist in the preparation for a difficult case	15 (22.7%)	36 (54.5%)		9 (13.6%)		4 (6.1%)		2 (3%)	
2.10	In general, the anaesthetist lets me know when I have done a good job during a case or if they appreciated my effort	13 (20%)	24 (36.9%)		10 (15.4%)		13 (20%)		5 (7.7%)	
2.11	It is important for me to be made aware of my performance during an anaesthetic	23 (33.3%)	34 (49.3%)		8 (11.6%)		1 (1.4%)		3 (4.3%)	
2.12	If my preparation for a case is inadequate the anaesthetist will usually respond by:	**RARELY**		**SOMETIMES**				**OFTEN**		
a.	Giving me more time to make additional preparation	10 (15.4%)		33 (50.8%)				22 (33.8%)		
b.	Explaining to me what was expected or what was to be done	11 (16.7%)		29 (43.9%)				26 (39.4%)		
c.	Teaching me at the end of the case	26 (39.4%)		27 (40.9%)				13 (19.7)		

d.	Shouting at me	22 (32.8%)	33 (49.3%)	12 (17.9%)
e.	Complaining to others in theatre	39 (58.2%)	20 (29.9%)	8 (11.9%)
2.13	If my preparation for a case is inadequate, it is usually because:	**RARELY**	**SOMETIMES**	**OFTEN**
a.	I am not familiar with the case and what is needed	34 (51.5%)	29 (43.9%)	3 (4.5%)
b.	The anaesthetist did not instruct me adequately on the set up	16 (25.4%)	41 (65.1%)	6 (9.5%)
c.	I did not understand the anaesthetic plan or the anaesthetist's instructions	37 (56.9%)	23 (35.4%)	5 (7.7%)
d.	I understood the instructions, but I did not know how to do the tasks/ preparation the anaesthetist asked of me	41 (66.1%)	19 (30.6%)	2 (3.2%)
e.	I was given too many duties to do at once	11 (17.7%)	31 (50%)	20 (32.3%)
f.	Equipment was not available	16 (25%)	23 (35.9%)	25 (39.1%)
g.	There was not enough time to prepare	13 (20.3%)	35 (54.7%)	16 (25%)
2.14	When you learnt an anaesthetic-related skill, what did you think was the best way to learn the skill?	**GOOD**	**BETTER**	**BEST**
a.	A lecture at nursing college	27 (69.2%)	5 (12.8%)	7 (17.9%)
b.	Being taught by an anaesthetist	18 (29.5%)	16 (44.3%)	27 (44.3%0
c.	Being taught by another nurse/or anaesthetic nurse	25 (39.1%)	17 (26.6 %)	22 (34.4%)
d.	In-service training	17 (29.8%)	17 (29.8%)	23 (40.3 %)
e.	Practical group session	19 (33.3%)	14 (24.6%)	24 (42.1%)

QUESTION THREE						
		YES	**NO**			**DON'T KNOW**
3.1.1	My unit has an SOP for anaesthetic nurses	39 (66.1%)	3 (5.1%)			17 (28.8%)
3.1.2	If YES, I feel I am familiar with its content	37 (77.1%)	11 (22.9%)			–
3.1.3	If NO, I feel that having an SOP and being familiar with it will improve my performance	10 (90.9%)	1 (9.1%)			–
		STRONGLY AGREE	**AGREE**	**NEUTRAL**	**DISAGREE**	**STRONGLY DISAGREE**
3.2	Learning new skills improves my self-confidence	30 (48.4%)	26 (41.9%)	1 (1.6%)	4 (6.5%)	1 (1.6%)
3.3	Learning new skills improves my job satisfaction	22 (36.7%)	31 (51.7%)	1 (1.7%)	5 (8.3%)	1 (1.7%)
3.4	Skills that I feel I need more training in are:	**YES**			**NO**	
a	Airway management	45 (69.2%)			20 (30.8%)	
b	The requirements for paediatric anaesthesia	44 (67.7%)			21 (32.3%)	
c	Preparation for major trauma cases	45 (69.2%)			20 (30.8%)	
d	Management of anaesthetic emergencies	44 (68.8%)			20 (31.3%)	
e	Preparation for cardiac cases	57 (85.1%)			10 (14.9%)	
QUESTION FOUR						
4.3.1	Has this happened to you before?	29 (47.5%)			32 (52.5%)	
4.4	As an anaesthetic nurse have you taught the anaesthetists anything or helped them adjust their behaviour in any way?	27 (51.9%)			25 (48.1%)	