

Patients' knowledge and perception of anaesthesia and the anaesthetist at a tertiary health care facility in Ghana

Robert Djagbletey^{a*}, George Aryee^a, Raymond Essuman^a, Vincent Ganu^b, Ebenezer O Darkwa^a, Christian Owoo^a, Francis Ahiaku^c and Alfred Yawson^d

^aDepartment of Anaesthesia, School of Medicine and Dentistry, College of Health Sciences, Korle-Bu Teaching Hospital, University of Ghana, Accra, Ghana

^bDepartment of Internal Medicine, Korle-Bu Teaching Hospital, Accra, Ghana

^cDepartment of Anaesthesia, Trust Hospital, Accra, Ghana

^dDepartment of Community Health, School of Public Health, University of Ghana, Korle-Bu, Ghana

*Corresponding author, email: r_djag@yahoo.com

Background: Anaesthesia has always been misconstrued as a 'behind the scenes' specialty. Despite advancements in anaesthesia, there is inadequate public knowledge regarding the specialty, the scope of the functions of anaesthetists, and the pivotal role anaesthetists play in the healthcare delivery system. This study therefore assessed the knowledge and perception of anaesthesia and the role of anaesthetists among patients in a tertiary healthcare facility.

Methods: A cross-sectional study was conducted over 3 months in 2015 among 279 patients accessing services at the pre-anaesthetic clinic of the Korle-Bu Teaching Hospital. Patients were interviewed using a structured questionnaire assessing socio-demographic characteristics, their knowledge and perceptions about anaesthesia, and the role of anaesthetists.

Results: The majority of patients (62.4%) had heard about anaesthesia. Most (85%) knew that specially trained doctors or nurses were responsible for the delivery of anaesthesia. Nearly half the patients indicated anaesthesia was all about 'putting people to sleep and waking them up'.

Less than 15% of patients had knowledge of the role of anaesthetists outside the confines of the operating theatre suites.

Conclusion: A considerable number of patients had heard about anaesthesia and knew the people responsible for the delivery of anaesthesia. The perception of most patients is that anaesthesia is all about 'putting patients to sleep and waking them up'. There was poor knowledge of patients regarding the role of anaesthetists beyond the confines of the operating theatre.

Keywords: anaesthesia, anaesthetist, knowledge, misconceptions, patients, perceptions

Introduction

The role of anaesthetists has transcended the barriers of the traditional operating theatre suites. Services of anaesthetists are vital in the management of pain, the critically ill and palliative care besides giving anaesthesia for surgical procedures. Anaesthetists are also proficient in cardiopulmonary resuscitation, basic and advanced life support, and disaster management.¹

Anaesthetists thus play very critical roles in critical care units, trauma centres, pain clinics and as members of resuscitation teams all over the world.²

Despite the fact that significant successes chalked up in surgery are closely coupled to advances in anaesthesia and anaesthetic techniques,³ anaesthesia has always been misconstrued as a 'behind the scenes' specialty.⁴ Some patients have misconceptions concerning anaesthesia, which influences their decision to seek a surgical consult, and their willingness to undergo anaesthesia and surgical interventions. These may contribute to the delayed presentation of patients, which impacts negatively on outcomes and quality of health care.

In spite of the advancements in anaesthesia, there is inadequate public knowledge regarding the specialty and the scope of the functions of anaesthetists,⁴ as well as the pivotal role anaesthetists

play in the healthcare delivery system. Patients in developing nations have been reported to have less knowledge about the anaesthetists compared with those in developed countries.⁵

Although a considerable number of studies in anaesthesia have been published worldwide, a limited number of studies have been done regarding the knowledge and perceptions of anaesthesia and anaesthetists in Africa, especially Ghana.

The present study assessed the knowledge and perceptions of patients regarding anaesthesia and the anaesthetist in Ghana.

Methods

Study design and study site

A hospital-based cross-sectional study was conducted over a three-month period (April–June 2015) at the preoperative anaesthetic clinic of the Department of Anaesthesia of the Korle-Bu Teaching Hospital (KBTH) in Accra.

Korle-Bu Teaching Hospital has a bed capacity of 2000, and is a tertiary referral centre located in Accra, the national capital of Ghana. The Department of Anaesthesia of KBTH delivers over 12 000 anaesthetics annually and runs a pre-anaesthetic clinic, three times a week, manned by anaesthesiologists. Nearly a thousand patients are attended to at the pre-anaesthetic clinic a month.

Sampling and subject selection

A maximum of 10 adult patients (≥ 18 years), presenting for outpatient preoperative anaesthetic assessment and who gave consent, were consecutively recruited daily at the pre-anaesthetic clinic during the study period. This was done to give enough time for questionnaire administration, to increase the time period over which patients will be selected and to increase the variability among recruited patients.

Patients who were known to have dementia or other cognitive impairment were excluded.

Previous hospital-based studies estimate the level of patients' knowledge that anaesthetists are doctors at between 56% and 99%.^{6,7} Assuming an expected level of patients' knowledge of anaesthetists as doctors of 80% at the 95% confidence level and an alpha level of 0.05, a total of 279 patients was judged adequate.

Data collection

Data were collected using interviewer-administered pre-tested questionnaires. Baseline demographic characteristics including age, gender, ethnicity, education and occupation were recorded. The maximum level of education attained was used to determine the educational status. No formal education was assigned none, junior secondary/high school was categorised as basic, senior secondary/high school as secondary and any other beyond secondary was assigned tertiary.

Information was also obtained on the participant's knowledge of anaesthesia, who the anaesthetist is, the role of the anaesthetist and perceptions of patients on anaesthesia and the anaesthetist.

The questionnaire was developed by anaesthetists and a public health specialist. The questionnaire was pre-tested using 10 preoperative inpatients who had their pre-anaesthesia assessment done by anaesthetists on the surgical wards. After pre-testing some questions were modified to make them more understandable.

Responses to question 6 of the questionnaire (Appendix 1), were used in the computation of a knowledge score. One point each was awarded for the correct identification of the anaesthetist as playing a role in the functions listed in question 6 of the questionnaire. A knowledge score was computed as the sum of the correctly identified roles that anaesthetists are involved in. Thus a maximum score of 6 was attainable.

We hypothesised that the knowledge of patients on the entire scope of the roles of anaesthetists (both within and without the theatre suites) may be associated with their socio-demographic characteristics or previous exposure to surgery/anaesthesia. We therefore sought to test this hypothesis by computing a knowledge score to capture the range of diverse roles of the anaesthetists.

Data analysis

Data were entered and analysed using SPSS® version 20.0 (IBM Corp, Armonk, NY, USA). Demographic characteristics were presented in appropriate frequency tables. Categorical variables were summarised as frequencies and percentages and continuous variables were summarised as means and standard deviations.

Students' t-test and ANOVA were used to compare means. The significance level was set at 95% (*p*-value < 0.05).

Ethical issues

Ethical clearance for the study was obtained from the Ethical and Protocol Review Committee of the College of Health Sciences, University of Ghana, with approval identification number MS-Et/M.1 — P4.3/2014 — 2015. All participants provided written informed consent.

Results

A total of 279 patients were recruited into the study. The ages of the patients ranged from 17 to 90 with a mean of 45.3 ± 14.2. Nearly two-thirds (63.4%) of the patients were females giving a male:female ratio of 1:1.7. Only 12.2% of patients had no formal education. Over a quarter had tertiary education and 61.6% had either basic or secondary education.

The majority of the patients (31.9%) were referred from the general surgical unit and 27.8% were referred from the gynaecological unit. Some 47% of the patients had undergone previous surgical procedures (Table 1).

The majority of patients (62.4%) had heard about anaesthesia. One hundred and thirty-nine (79.9%) heard about anaesthesia at a health facility. The rest came to know about anaesthesia from books, the print/electronic media, friends/relatives or from lessons in an educational institution.

The majority (45.5%) said anaesthesia was about 'putting people to sleep and waking them up'. Over a fifth (21.8%) said it involves the preoperative assessment and perioperative management of patients. A few (4.6%) said anaesthesia involved the intraoperative monitoring of patients. Other responses included: anaesthetists help patients, assist the surgeon and direct the surgeon on what to do.

Nearly a fifth (19.5%) of those who said they have heard of anaesthesia, however, could not say what it involves.

Table 1: Sex, educational status and referral specialty of patients

Factor		Frequency (%)
Gender	Male	102 (36.6)
	Female	177 (63.4)
	None	34 (12.2)
Educational status	Basic	95 (34.1)
	Secondary	77 (27.5)
	Tertiary	73 (26.2)
Referral specialty	General Surgery	87 (31.9)
	ENT	11 (4.0)
	Ophthalmology	3 (1.1)
	Obstetrics	2 (0.7)
	Gynaecology	76 (27.8)
	Genitourinary Surgery	42 (15.4)
	Neurosurgery	17 (6.2)
	Maxillofacial Surgery	4 (1.5)
	Plastic Surgery	7 (2.6)
Orthopaedic Surgery	24 (8.8)	
Previous surgery	Yes	131 (47.0)
	No	148 (53.0)

Regarding the persons responsible for the delivery of anaesthesia, the majority (85.1%) said they were specially trained doctors or nurses, 7.8% said it was any doctor, 6.1% said it was any nurse and 1% said it was the nurse in theatre.

Regarding identification of performance of specific duties by anaesthetists, 28.8% of patients correctly said anaesthetists were involved in preoperative assessment of patients; 21.9% said they were involved in preoperative optimisation of patients' co-morbidities in consultation with other physicians; 13.7% said they were involved in the postoperative management of patients; 13.5% said they were involved in the management of the critically ill; 11.8% said they were involved in emergency care and resuscitation and 10.9% said anaesthetists were involved in management of pain (Table 2).

The majority of patients (74.9%) were scared of having surgery. Reasons given included: being scared of the surgical procedure itself (45.7%), the fact that they need to undergo anaesthesia (24.5%) and the pain associated with surgery (28.9%).

The mean knowledge score computed was not statistically different between the sexes (p -value = 0.39) and among the age

Table 2: Patients' knowledge of anaesthesia and the role of the anaesthetist

Factor	Responses	Frequency (%)
Have you heard about anaesthesia?	Yes	174 (62.4%)
	No	105 (37.6%)
Source of knowledge about anaesthesia:	Patient education talks at health facility	139 (79.9%)
	Book/Print media	12 (6.9%)
	Electronic media	3 (1.7%)
	Friends/Relatives	9 (5.2%)
	Lessons/Lectures at an educational institution	11 (6.3%)
Knowledge about anaesthesia:	Preoperative assessment/management	38 (21.8%)
	Putting people to sleep and waking them up	79 (45.4%)
	Intraoperative monitoring	8 (4.6%)
	Don't know	34 (19.5%)
	Others	15 (8.7%)
Knowledge about who the anaesthetist is:	Specially trained doctor	225 (72.8%)
	Specially trained nurses	38 (12.3%)
	Surgeon	19 (6.1%)
	Any nurse in theatre	3 (1.0%)
Knowledge of role of anaesthetist:	Any doctor	24 (7.8%)
	Preoperative assessment of patients	148 (28.2%)
	Preoperative optimisation of patients' co-morbidities in consultation with other physicians	115 (21.9%)
	Postoperative management of patients	72 (13.7%)
	Management of critically ill patients	71 (13.5%)
	Emergency care and resuscitation	62 (11.8%)
	Pain management	57 (10.9%)

groups (p -value = 0.67). Neither the referring specialty (p -value = 0.84) nor previous exposure to surgery/anaesthesia (p -value = 0.64) significantly influenced the knowledge score. Knowledge scores significantly increased with increasing level of education (p -value = 0.00), with the highest mean score (2.6 ± 0.2) among patients with tertiary education, as shown in Table 3.

Discussion

In this study, less than two-thirds of patients had heard of anaesthesia. The vast majority had heard about anaesthesia through health education talks they receive at health facilities. Only about a fifth had heard about anaesthesia outside a health facility. This may indicate poor public education about anaesthesia, which could negatively impact on the knowledge and perception of the general public regarding anaesthesia.

Findings of most surveys done in different parts of the world reveal that fewer than two out of three patients know that anaesthetists are physicians, with a seeming trend of patients in developing countries having poorer knowledge compared with those in developed countries.⁵

Table 3: Mean distribution of computed knowledge scores* among age groups, gender, educational status and previous exposure to anaesthesia

Factor	Knowledge score Mean \pm SE	p -value
Gender		0.39
Male	2.0 \pm 0.2	
Female	1.8 \pm 0.1	
Age:		0.67
20–29	1.8 \pm 0.3	
30–39	2.0 \pm 0.2	
40–49	1.8 \pm 0.2	
50–59	1.7 \pm 0.3	
≥ 60	2.2 \pm 0.3	
Education		0.00
None	1.2 \pm 0.4	
Basic	1.5 \pm 0.2	
Secondary	2.0 \pm 0.2	
Tertiary	2.6 \pm 0.2	
Previous surgery/anaesthesia		0.64
Yes	1.8 \pm 0.2	
No	1.9 \pm 0.2	
Surgical specialty		0.84
General Surgery	1.9 \pm 0.2	
ENT	1.5 \pm 0.5	
Ophthalmology	1.3 \pm 1.3	
Obstetrics	1.5 \pm 1.5	
Gynaecology	1.9 \pm 0.2	
Genitourinary Surgery	2.0 \pm 0.3	
Neurosurgery	2.7 \pm 0.5	
Maxillofacial Surgery	1.0 \pm 0.7	
Plastic Surgery	1.6 \pm 0.5	
Orthopaedic Surgery	1.7 \pm 0.3	

*Maximum knowledge score = 6.

Reasons advanced were that patients with surgical problems first consult the surgeon who upon review decides on a surgical intervention before referral to the anaesthetist.^{8,9} Most patients thus view the anaesthetist as a technician or assistant to the surgeon and not as a specially trained physician. Also, anaesthetists spend relatively shorter duration of contact with a conscious patient compared with other clinical medical specialists. It is thus not surprising that they are regarded by some as 'unseen doctors'.⁸

Hariharan, Merritt-Charles and Chen⁴ also reported that the existence of Physician Assistants-Anaesthesia or 'Nurse Anaesthetists', which pertains in many countries, Ghana not excluded, may confuse the general public, causing difficulty for most lay-people in distinguishing nurse anaesthetists from physician anaesthetists. Contrary to these findings, in our study, only 13.3% of responses indicated anaesthetists were nurses. The majority of patient responses (72.8%) alluded to the fact that anaesthetists are specially trained doctors

This may be due to the fact that at the Korle-Bu Teaching Hospital patients are informed by the surgeon that they require review by a special doctor (anaesthetist) prior to referral to the pre-anaesthesia clinic.

There was poor knowledge about the intraoperative role of the anaesthetist in monitoring of the patient, similar to studies in Saudi Arabia,¹⁰ but in contrast to findings in the UK.¹¹ This may be due to the perception that anaesthesia is all about 'putting patients to sleep and waking them up', a view expressed by nearly half of our patients who had heard about anaesthesia. There was also poor knowledge of the role of the anaesthetist in the preoperative assessment and management of patients, which may be due to the usually relatively short contact period between the patient and the anaesthetist during this process.

Patients' knowledge of the diverse roles of anaesthetists, especially those beyond the confines of the operating theatres, are very poor worldwide.^{4,11,12} This study found poor patient knowledge of the role of anaesthetists in postoperative management of patients, emergency care and resuscitation, management of the critically ill and pain management.

Though in the majority of countries ICUs are managed by anaesthetists, patients' knowledge of their role in the intensive care is poor. In a study in Australia, 67% of patients knew that the anaesthetist plays a role in the ICU.¹³ Nineteen per cent (19%) of patients in a study from Trinidad knew that anaesthetists were involved in ICU management of patients.⁴

However, similar studies in most other countries including those in Hong Kong,⁹ the UK,¹¹ India,¹⁴ Turkey,¹⁵ and Colombia¹⁶ among others generally show that less than 10% of patients are aware that anaesthetists play a role in the intensive care unit. In this study, 13.5% of patients correctly identified anaesthetists as being involved in management of the critically ill.

There is even poorer patient knowledge of the role of anaesthetists in chronic pain management. This knowledge is generally less than 5% in most studies.^{9,15,16}

Only a third of Australian patients were aware anaesthetists were involved in chronic pain management.¹³ In our study 10.9%

correctly identified that the anaesthetist was involved in chronic pain management.

The knowledge of Ghanaian patients on the role of the anaesthetist outside the operating theatre was poor, though slightly higher than that found in most other countries. It was, however, lower than that found in Australia and Trinidad. The type of health institution in which the study was conducted and the socio-demographic characteristics of patients studied may have contributed to the differences in findings.

Similar to findings of Sharma *et al.*,¹⁷ this study did not find any association between previous surgery/anaesthetic encounter and knowledge of the roles of anaesthetists. There was also no association between the referring specialty and the knowledge of patients on the role of anaesthetists. Anaesthetists should therefore inform and educate patients about their specialty and their roles, not only during preoperative but also postoperative visits

Educational status was the only factor found to significantly impact the knowledge of the roles of the anaesthetist in this study, with increasing educational level significantly increasing the knowledge patients have about the roles of the anaesthetist outside the operating theatre. This is similar to the findings of the study in Hong Kong by Irwin *et al.*, where post-secondary education was associated with good knowledge of the role of anaesthetists, particularly those outside the operating theatre.⁹ This may be attributed to the fact that increasing educational status increases the likelihood of being exposed to and informed about a wider range of subject areas. Patients are also more likely to read and obtain health information from print and electronic sources regarding a diverse range of subjects including anaesthesia.

Regarding anaesthesia, 'not waking up' was reported as the commonest fear with postoperative pain the second commonest fear expressed by patients worldwide.⁵ Nearly three-quarters of the patients in this study admitted to being scared of having surgery. Of these, nearly half were scared of having to go under the scalpel and nearly a third because of the anticipated postoperative pain.

In most countries, patients generally have poor knowledge regarding the functions of anaesthetists. In view of this, it behoves all anaesthetists to educate their patients during preoperative and postoperative visits and to use appropriate media such as print and electronic platforms. Anaesthetists should also endeavour to discharge their duties with a high standard of professionalism.

These in our estimation will go a long way to increase patients' knowledge of the roles of the anaesthetist and improve the image of the specialty.

Limitation

The study was conducted among preoperative patients at a tertiary hospital in Ghana. Findings may differ with population sub-type studied, type of facility in which the study was conducted or location and therefore cannot be generalised worldwide. Furthermore, the questionnaire may not have been rigorously developed to ensure reliability and reproducibility.

Though the interviews were conducted prior to assessment and receiving information from the anaesthetists at the pre-

anaesthesia clinic, some patients may have had some information from surgeons or through previous encounters with anaesthetists.

Conclusion

A considerable number of patients had heard about anaesthesia and knew the people responsible for the delivery of anaesthesia. The perception of most patients is that anaesthesia is all about 'putting patients to sleep and waking them up'. There was poor knowledge of patients regarding the role of anaesthetists beyond the confines of the operating theatre.

There is therefore a need for intensified public education on the importance of anaesthesia and the diverse roles anaesthetists play in ensuring holistic health care delivery.

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Authors' contributions – RD and FA developed the concept. RE and GA collected the data. RD, GA and RE analysed the survey data. RD and VG wrote the first draft manuscript. RD, FA, VG, EOD, CO, and AEY contributed to writing and review of various sections of the manuscript. All the authors reviewed and approved the final version of the manuscript prior to submission.

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Appendix 1

Serial Number

Study of patients' knowledge and perception of anaesthesia and the anaesthetist at a large teaching hospital in Accra, Ghana

QUESTIONNAIRE

Date:

Initials:

1. Sex: Male [] Female []

2. AGE:yrs

3. EDUCATIONAL STATUS :

None [] Senior Secondary []

Basic [] Tertiary []

Other, specify

4. Who delivers General Anaesthesia?

The Surgeon [] Any Nurse in theatre [] Any Doctor [] Specially trained Nurses []
Specially trained Doctors []

5. What are the roles of the anaesthetists in patient care?

6. Who performs the following duties?

	Surgeon	Anaesthetist	Any Nurse	Any Doctor
Preoperative assessment of patients	[]	[]	[]	[]
Preoperative optimisation of patients' co-morbidities				
In consultation with other physicians	[]	[]	[]	[]
Postoperative management of patients	[]	[]	[]	[]
Management of critically ill patients	[]	[]	[]	[]
Emergency care and resuscitation	[]	[]	[]	[]
Pain management	[]	[]	[]	[]

7. Are you scared of having this surgery? Yes [] No []

If Yes, what is it that scares you? Is it fear of:

The surgical procedure itself []

The fact that you will go under anaesthesia []

The pain associated with surgery []

Others

THANK YOU