South Afr J Anaesth Analg. 2023;29(6):203-208
https://doi.org/10.36303/SAJAA.3000

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

ORIGINAL RESEARCH

The profile of female anaesthesiologists in South Africa: past and present

LM Fombad,[1] H Perrie,[1] J Scribante[2]

[1] Department of Anaesthesiology, School of Clinical Medicine, Faculty of Health Sciences, University of the Witwatersrand, South Africa
[2] Surgeons for Little Lives and Department of Paediatric Surgery, School of Clinical Medicine, Faculty of Health Sciences, University of the Witwatersrand, South Africa
Corresponding author, email: *lfombad@gmail.com*

Background: A trend of feminisation of medicine has been observed over the years. Feminisation of medicine is important as it ensures that both male and female doctors have equal opportunity to deliver patient care. In South Africa, the female profile in anaesthesiology is not known. This study aims to describe the past and present profiles of female anaesthesiologists in South Africa from 1960–2019.

Methods: Part I of this study retrospectively determined the number of females who qualified as fellows from the College of Anaesthetists of the Colleges of Medicine of South Africa (CMSA), as well as leadership roles held by female anaesthesiologists in the CMSA and the South African Society of Anaesthesiologists (SASA) and the number of female anaesthesiologists head of departments during the study period. Part II was an online, anonymous cross-sectional survey sent to female anaesthesiologists who had full membership with SASA, determining their profile and the factors influencing career progression.

Results: Of the 593 female anaesthesiologists who qualified from the CMSA, 11.3% qualified with a Fellowship of the Faculty of Anaesthetists from 1960–1993 and 88.7% with a Fellowship of the College of Anaesthetists from 1994–2019. Between 2010 and 2019, 50.6% of registrars who qualified were female. From the inception of the CMSA, SASA and the university departments of anaesthesiology, female anaesthesiologists have held limited leadership positions. Only 34.1% of female anaesthesiologists had research publications. The majority (84.3%) of female anaesthesiologists were satisfied with their career choice. A dichotomy in the factors influencing career progression was reported. In this study, commonly described factors such as family responsibilities and motherhood, were seen as a positive rather than a negative influence on career progression.

Conclusion: This study describes the past and present profile of female anaesthesiologists in South Africa. There is a notable increase in female anaesthesiologists qualifying from 1960–2019, in keeping with the feminisation of medicine. However, career progression among female anaesthesiologists, especially in leadership, remains limited.

Keywords: female anaesthesiologists, leadership, career progression

Introduction

Before the eighteenth century in Europe, women had a limited role in medicine. Women administered herbs for basic medicinal purposes. This threatened the church's religious doctrine, power and influence, and these women were accused of witchcraft. The medical practice of women was limited to midwifery.[1] Medicine was primarily a masculine space until the twentieth century.[1] World War I and World War II increased the opportunity for women to study medicine as the men left to fight.[1]

In the South African context, throughout its colonial and republican past, it was a patriarchal society. Women were mostly subordinate to men and had limited opportunities for medical education.[2] In addition, the apartheid era (1948–1994) entrenched racial discrimination.[2] Predominantly white males could study to become doctors. The end of apartheid availed increased educational opportunities for Black, Coloured, and Asian groups, as well as the disabled and females, through equity and transformation policies.[2] One of these policies is the gender policy framework, which "promotes empowerment of women and increases access to training opportunities and decision making".[3]

Besides socio-political barriers, the career advancement of women, both in general and in medicine, is influenced by numerous barriers. For example, women have a biological role in childcare which is increased by social conventions. The challenge of juggling career and family responsibilities is a major hindrance to career advancement.[4] Women may also face discrimination in the workplace. The gender pay gap is still prevalent in various work environments.[5] However, it has also been noted that women are less assertive and lack confidence when seeking leadership positions.[6] This passivity is rooted in the manner in which women are socialised and nurtured from childhood.[7]

In the last few decades, more females have been enrolled into medical schools, referred to as the "feminisation of medicine".[8] The number of female medical graduates in South Africa increased from 46.6% in 1999 to 56.1% in 2005.[9] Boylan and Grant[10] state that it is important that members of the medical profession reflect the society they serve regarding ethnicity, race, and gender; and the authors conclude that the composition of members of the medical profession is, in itself of importance to society. Despite more women joining specialist training programmes,[11] fewer women than men attain leadership roles and career progression beyond specialisation in

anaesthesiology.[5] Today, most specialities in medicine still have gender gaps.[12] Although Gardner et al.,[13] reported on gender issues among South African anaesthetists in 2002, the female leadership representation in anaesthesiology and the profile of female anaesthesiologists in South Africa are not known. The aim of this two-part study was to describe the past and present profiles of female anaesthesiologists in South Africa from 1960–2019.

Methods

The research design of Part I of this study was retrospective, and Part II was cross-sectional. Approval to conduct the study was obtained from the Human Research Ethics Committee (Medical) (M190832).

Part I

In Part I, the study population consisted of records of the College of Anaesthetists of the Colleges of Medicine of South Africa (CMSA), the South African Society of Anaesthesiologists (SASA) and the nine academic departments of anaesthesiology. Census sampling was used.

Three surveys were developed and administered to different target groups. The CMSA survey requested the total number of successful Fellowship of the Faculty of Anaesthetists (FFA) and Fellowship of the College of Anaesthetists (FCA) candidates per year from the inception of exams in 1960 until 2019, with particular emphasis on the number that were female. The FFA was renamed FCA when the Faculty of Anaesthetists changed to a constituent college of the CMSA. Furthermore, this survey requested the leadership roles of female anaesthesiologists in the College of Anaesthetists of the CMSA and their period of service. The SASA survey requested the leadership roles of female anaesthesiologists and their period of service for SASA. In the third survey, the Academic Heads of the Departments (HOD) of Anaesthesiology were asked for the number of academic heads and the proportion who were female from the inception of the department until 2019.

An appointment was scheduled with the academic registrar of the CMSA and the chief executive officer of SASA to complete the surveys. An email was sent to the nine academic HODs of Anaesthesiology, inviting them to take part in the study. The email included an information letter and a survey. Return of the survey implied consent. Data received from CMSA, SASA and the departments of anaesthesiology were anonymous with no identifying information.

Part II

The study population was female anaesthesiologists in either public or private practice who are full members of SASA. Convenience sampling was used, and the study sample was realised by the response rate. Of the 1 130 anaesthesiologist members of SASA in April 2020, 330 were female. The invitation and the link to the survey were published in the SASA newsletter. Reminders were posted two and four weeks later to maximise the response rate.

The anonymous electronic survey using Google Forms requested the following information: characteristics, academic qualifications, leadership roles, publications, serving on an editorial board, and factors influencing career progression. It took approximately 10–15 minutes to complete the survey. Consent was implied if the survey was returned.

Data were analysed in consultation with a statistician using Stata version 15 (StataCorp, USA). Categorical variables were described using numbers and frequencies. Continuous variables were described using means and standard deviations and medians and interquartile ranges, depending on the distribution of the data. Comparison between categorical variables was made with the chi-square goodness-of-fit test. A p-value of < 0.05 was considered statistically significant at a 95% confidence level.

Results

Part I

Between 1960 and 2019, 1 888 candidates qualified as anaesthesiologists from the CMSA, of whom 593 (31.4%) were females. Of these, 67 (11.3%) females qualified with a FFA between 1960 and 1993 and 526 (88.7%) with a FCA between 1994 and 2019. Figure 1 shows the percentage of female anaesthesiology graduates from the CMSA over time.

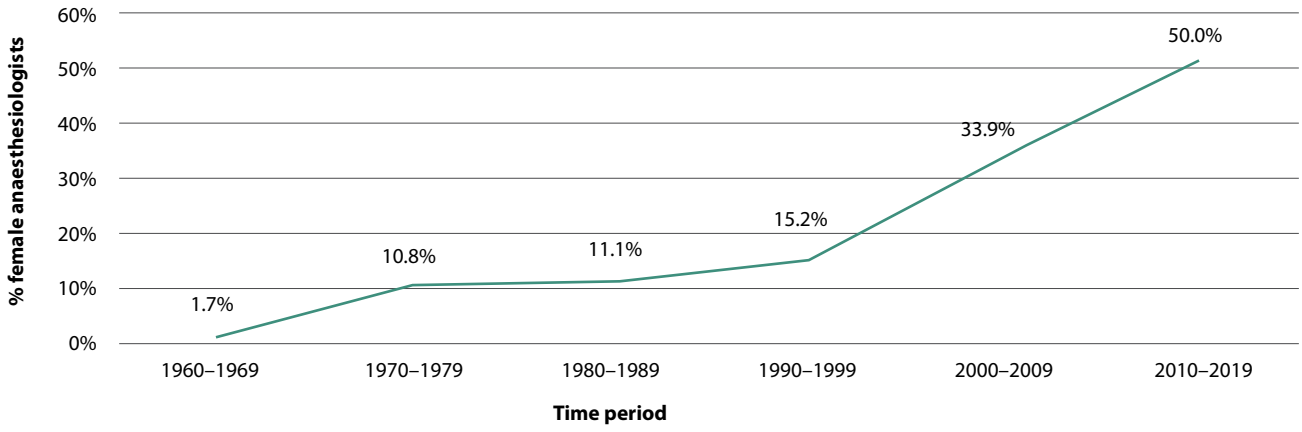


Figure 1: Percentage of female anaesthesiologists qualifying from the CMSA over time

The first female anaesthesiologist office-bearer of the CMSA College of Anaesthetists, since its inception in 1956, was president from 2002–2005. Three female anaesthesiologists were councillors of this college from 2002–2011, and one was secretary from 2011–2019.

Two female anaesthesiologists were founding members of SASA in 1943. Between 1948 and 2014, four female anaesthesiologists have been president of SASA, including the two founding members. Three other female anaesthesiologists have served on the executive committee from 1997 to the present and 15 have served as councillors from 1949 to the present.

Of the nine universities with departments of anaesthesiology, eight responses were received. The proportion of female to male academic HODs is shown in Table I. Of the 33 academic HODs, only 5 (15.2%) were female.

Table I: Proportion of female to male academic HODs

University	Inception year	Females *n* (%)	Males *n* (%)
University of KwaZulu-Natal	1945	0 (0)	5 (100)
University of the Witwatersrand	1951	2 (29)	5 (71)
University of Pretoria	1959	1 (20)	4 (80)
University of Stellenbosch	1970	0 (0)	3 (100)
University of the Free State	1971	0 (0)	4 (100)
Sefako Makgatho Health Sciences University	1978	0 (0)	6 (100)
Walter Sisulu University	1985	1 (50)	1 (50)
University of Limpopo	2018	1 (100)	0 (0)

Part II

Of the 330 female anaesthesiologist with full membership at SASA at the time of the study, 179 (54.2%) responded to the survey. The characteristics of the female anaesthesiologists are shown in Table II. Significantly more female anaesthesiologists were aged 35–44 years ($p = < 0.0005$), white ($p = < 0.0005$), married ($p = < 0.0005$), had children ($p = < 0.0005$), and worked in the private sector ($p = < 0.0005$). The median (interquartile range) years since graduation was 9 (4–16), with a minimum of 7 months and a maximum of 38 years.

The qualifications of the female anaesthesiologists are shown in Table III. Other medical qualifications included 1 Diploma in Emergency Medicine, 1 in Child Health, 2 in Sedation, 1 in Health Care Management, 1 in Medical Education, 1 in Clinical Research and 1 in Medical Hypnotherapy. The non-medical qualifications included a certificate in photography, 2 pilot's licences and 2 Diplomas in Leadership Development.

Only 6 (3.4%) female anaesthesiologists currently hold an academic rank ranging from lecturers to professors. Of the female anaesthesiologists who had leadership roles in the past, 10 (5.6%) were hospital HODs, 16 (9%) were heads of clinical units, 4 (2.2%) were medical managers and 10 (5.6%) performed other leadership roles, such as heads of undergraduate teaching programmes and practice managers. Of the 23 (12.8%) who currently hold leadership roles, 4 (2.2%) are hospital HODs, 6 (3.4%) are heads of clinical units, 2 (1.1%) are medical managers and 11 (6.1%) perform other leadership duties such as practice managers, portfolio heads and a head of anaesthesia for a district.

Only 26 (14.5%) female anaesthesiologists have or have had leadership roles in medical societies or organisations. Of these, 21 (11.7%) held roles with SASA; 4 (19%) as councillors, 8 (38.1%) were involved at branch level and 9 (42.9%) were involved with SASA Special Interest Groups. Two (1.1%) female anaesthesiologists had leadership roles with College of

Table II: Characteristics of female anaesthesiologists

Variable	Categories	*n*	%
Age	25–34	13	7.3
	35–44	102	57.0
	45–54	30	16.8
	55–64	29	16.2
	> 64	5	2.8
Ethnicity	Black	31	17.3
	Coloured	6	3.4
	Indian	23	12.8
	White	118	65.9
	Other	1	6.0
Marital status	Single	28	15.6
	Married	126	70.4
	Divorced	14	7.8
	Life partner	6	3.4
	Widowed	5	2.8
Children	No	49	27.4
	Yes	130	72.6
Place of work	Public district	2	1.1
	Public regional	6	3.4
	Public tertiary	27	15.1
	Public quaternary	17	9.5
	Private	94	52.5
	Public and private	30	16.8
	Retired	3	1.7

Table III: Qualifications of female anaesthesiologists

Qualifications	*n* (%)	Yes	No
Medical	DA	141 (78.8)	38 (21.2)
	FCA	140 (78.2)	39 (21.8)
	FFA	8 (4.5)	171 (95.5)
	MMed	111 (62)	68 (38)
	PhD	1 (0.6)	178 (99.4)
	Other medical diplomas	8 (4.5)	171 (95.5)
Non-medical		5 (2.8)	174 (97.2)

Table IV: Publications by female anaesthesiologists

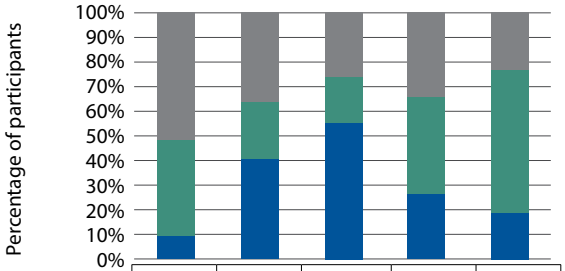
	Publication	*n* (%)			
		None	1–5	6–10	11–15
Peer reviewed	Research	118 (65.9)	58 (32.4)	3 (1.7)	0 (0)
	Editorial	175 (97.8)	4 (2.2)	0 (0)	0 (0)
	Case report	158 (88.3)	21 (11.7)	0 (0)	0 (0)
	Systematic review/meta-analysis	168 (93.9)	11 (6.1)	0 (0)	0 (0)
	Review	161 (89.9)	16 (8.9)	2 (1.1)	0 (0)
Non-peer reviewed	Research	169 (94.4)	10 (5.6)	0 (0)	0 (0)
	Editorial	179 (100)	0 (0)	0 (0)	0 (0)
	Case report	175 (97.8)	4 (2.2)	0 (0)	0 (0)
	Systematic review/meta-analysis	179 (100)	0 (0)	0 (0)	0 (0)
	Review	161 (89.9)	14 (7.8)	3 (1.7)	1 (0.6)

Anaesthetists of the CMSA; 1 as an examiner and the other as a secretary. Three (1.7%) had other leadership roles, such as, being on the pharmacy therapeutic committee and church leader. There were no leadership roles in the South African Medical Association.

The publications by female anaesthesiologists are shown in Table IV. Two (1.1%) female anaesthesiologists have been editors of a journal, and 1 (0.6%) has been on a journal editorial board.

The majority of female anaesthesiologists [101 (56.4%)] were very satisfied with their career choice whereas 50 (27.9%) felt satisfied, 23 (12.8%) were neutral, 4 (2.2) were dissatisfied and only 1 (0.6%) felt very dissatisfied with being an anaesthesiologist. The mean standard deviation (SD) for job satisfaction with career choice was 4.4 (0.8) on the 5-point scale.

Of the female anaesthesiologists who participated, 92 (51.4%) specified additional factors that they perceived as influencing their career progression either positively or negatively. Some factors perceived as positive by some anaesthesiologists were perceived as negative by others. Having children and motherhood positively enhanced careers of 15 participants, while for 11 of them this hindered their progression. Many participants (34) found anaesthesiology gave them better ability to maintain work-life balance as well as they had more control over their working hours, flexible work environment in private sector and financial security. A supportive anaesthetic community and good mentorship from both male and female mentors encouraged leadership progression. On the other hand, inflexibility, staff shortages, excessive commuting, increase demand of clinical workload and administrative duties were seen to negatively affect career progression of 26 participants. The lack of ambition, burn out, racial discrimination or discrimination from other females, being bullied or working in "the big boys club" (as some surgeons preferred to work with male anaesthesiologists) were also stated as factors hindering career progression. Some also indicated that male anaesthesiologists were more likely to get a post or more attractive administrative duties giving them more time as opposed to women who are expected to adhere to the more traditional female role hence time for research and career advancement.



	Not at all	Seldom	Sometimes	Very often	Always
Discrimination based on gender (*n*)	45	31	40	48	15
Inspired by female mentor (*n*)	34	19	29	58	39
Family effect on career (*n*)	9	35	84	38	13

Figure 2 shows factors perceived to influence female anaesthesiologists' career progression.

Discussion

This study described the past and present profiles of female anaesthesiologists in South Africa. Relating the South African profile to other international profiles proved difficult as different aspects were described.

There has been a notable increase in the number of females who qualified in medicine, leading to the term "feminisation of medicine".[8] In this study, this is borne out by the increased female registrars from 2010–2019, who qualified with a FCA. There is limited information on representation of women in medical workforce from low- and middle-income countries. A study done in three African cities showed overrepresentation of women in younger age groups though majority of the medical workforce were not women.[14] In 2016 in the United States of America, 35% of anaesthesiology residents were female.[11] One possible explanation for the increase in this study may be policy changes that were instituted after 1994 in South Africa. The South African Employment Equity Act, No 55 of 1998[15] endorses the elimination of unfair discrimination and requires the execution of affirmative action to ensure equal representation of gender and disability status in the workplace. The Health Professions Act, No 56 of 1974, amended by Act 29 of 2007[16] advocates

for previously disadvantaged groups to be given priority with respect to employment and appointments. The order of priority being firstly women followed by men of African, Asian or Coloured descent and lastly, the disabled.[16] The Basic Conditions of Employment Act, No 75 of 1997[17] protects females in the public sector from unfair dismissal due to pregnancy and allows four consecutive months of paid maternity leave commencing four weeks prior to their estimated delivery date.

The World Health Organization (WHO) report of 2008[18] prioritised leadership reforms as one of the key reforms necessary in order to better the health system to meet the healthcare challenges, "without leaders, even the best designed systems fail". Gender and ethnic diversity in the workplace and leadership strengthen the health system and produce quality healthcare delivery.[19] Bissing et al.[11] highlighted that despite the growth in female medical graduates, the number of women in leadership positions in academic medicine and especially in anaesthesia has not kept par with the increased medical graduates. In this study, it was shown that academic leadership positions remain male-dominated. The reason for this is not fully understood. Our study did not ask female anaesthesiologists if they wanted to progress further or if they were satisfied with their career progression. The limited career progression may have been by choice or due to systemic factors. However, this study showed that 84.3% of female anaesthesiologists were happy with their career choices. Also, 52.4% were working in the private sector, where career progression is less likely than in the public sector.

Bosco et al.,[20] in a scoping review, listed the following factors as reasons for limited female career progression: unsupportive work environments, lack of mentorship, personal choices, childcare responsibilities and active discrimination against women.[20] However, this study showed a dichotomy in the factors influencing career progression; what was stated as a positive influence on career progression by some was stated as negative by others. For example, some female anaesthesiologists considered family responsibilities and motherhood as hindering career progression, while others stated this as a positive factor. Commonly described factors hindering career progression, family responsibilities and motherhood, support at various levels and personal factors were stated by more female anaesthesiologists as having a positive rather than negative influence on career progression in this study. This finding is in keeping with a previous study by Gardner et al.,[13] which showed that significantly more South African female anaesthetists reported that having children and combining parenting with their career interests, positively enhanced their relationships and support systems.[13] Female anaesthetists also had higher career satisfaction but reported more gender discrimination and harassment. In our study, discrimination was only experienced as a negative influence.

It is important to note that this was a quantitative study where participants only rated and listed factors that influence their career progression. Therefore, a qualitative study is recommended to explore and obtain a deeper understanding of factors influencing female anaesthesiologists' career progression in the South African context.

Further limitations of this study were that Part I of this study only reflects female anaesthesiologists who qualified with a FFA or FCA from the CMSA and not those who qualified solely with a university anaesthesiology degree, which is a path pursued by the minority of qualified anaesthesiologists in the country. The data obtained from the HODs may have been influenced by recall bias as the data may not have been formally recorded. Part II of the study was a cross-sectional study based on a survey which was completed only by female anaesthesiologists who were full members of SASA.

Conclusion

This study describes the past and present profiles of female anaesthesiologists in South Africa. The number of female anaesthesiologists qualifying has increased notably from 1960–2019, which is in keeping with the "feminisation of medicine". However, the female anaesthesiologists' career progression remains limited. This study showed a dichotomy in the factors influencing career progression.

Acknowledgement

This research was done in partial fulfilment of a Master of Medicine degree. The authors thank and acknowledge the input of Prof. Christina Lundgren, Dr Gill Hendry (statistician), Ms Natalie Zimmelman (SASA) and Ms Yolokazi Kanzi (CMSA).

Conflicts of interest

The authors declare no conflict of interest.

Ethical approval

Approval to conduct the study was obtained from the University of the Witwatersrand Human Research Ethics Committee (Medical) (M190832).

ORCID

LM Fombad https://orcid.org/0009-0003-9697-5688
H Perrie https://orcid.org/0000-0002-9890-7887
J Scribante https://orcid.org/0000-0002-2221-5024

References

1. Jefferson L, Bloor K, Maynard A. Women in medicine: historical perspectives and recent trends. Br Med Bull. 2015;114(1):5-15. https://doi.org/10.1093/bmb/ldv007.
2. Delobelle P. The health system in South Africa: historical perspectives and current challenges. South Africa in focus. Cape Town: Nova Science; 2013. p. 159-206.
3. Department of Environmental Affairs. [Internet]. South Africa's national policy framework for women's empowerment and gender equality. Pretoria: Government of South Africa, Department of Environmental Affairs; 2012. Available from: http://unpan1.un.org/intradoc/groups/public/documents/cpsi/unpan035001.pdf. Accessed 4 February 2019.
4. Pfleiderer B, Bortul M, Palmisano S, Rodde S, Hasebrook J. Improving female physician's careers in academic medicine: chances and challenges. Best Pract Res Clin Anaesthesiol. 2018;32(1):15-23. https://doi.org/10.1016/j.bpa.2018.04.006.
5. Vogel L. Celebrating more women leaders in global health. Can Med Assoc J. 2017;189(46):1433-4. https://doi.org/10.1503/cmaj.109-5520.
6. Edmunds LD, Ovseiko PV, Shepperd S, et al. Why do women choose or reject careers in academic medicine? A narrative review of empirical evidence. Lancet. 2016;388:2948-58. https://doi.org/10.1016/S0140-6736(15)01091-0.
7. Halley MC, Rustagi AS, Torres JS, et al. Physician mothers' experience of workplace discrimination: a qualitative analysis. Br Med J. 2018;363:1-9. https://doi.org/10.1136/bmj.k4926.

8. Surawicz C. Women in leadership: why so few and what to do about it. J Am Coll Radiol. 2016;13(12):1433-7. https://doi.org/10.1016/j.jacr.2016.08.026.
9. Wildschut A. Motivation for a gendered analysis of trends within South African medical schools and the profession. S Afr J High Educ. 2008;22(4):920-32. https://doi.org/10.4314/sajhe.v22i4.25825.
10. Boylan M, Grant R. Diversity and professional excellence. J Natl Med Assoc. 2004;96(10):1345-62.
11. Bissing M, Lange E, Davila W, et al. Status of women in academic anesthesiology: a 10-year update. Anesth Analg. 2019;128(1):137-43. https://doi.org/10.1213/ANE.0000000000003691.
12. Venkatesh B, Mehta S, Angus DC, et al. Women in intensive care study: a preliminary assessment of international data on female representation in the ICU physician workforce, leadership and academic positions. Crit Care. 2018;22(211):1-9. https://doi.org/10.1186/s13054-018-2139-1.
13. Gardner S, James M, Evans N. Gender issues among South African anaesthetists. S Afr Med J. 2002;92(9):732-6.
14. Russo G, Goncalves L, Craveiro I, Dussault G. Feminization of the medical workforce in low-income settings; findings from surveys in three African capital cities. Hum Resour Health. 2015;13:64. https://doi.org/10.1186/s12960-015-0064-9.
15. Republic of South Africa. Employment Equity Act No. 55 of 1998. Cape Town: Government Printer. Available from: https://www.gov.za/sites/default/files/gcis_document/201409/a55-980.pdf. Accessed 17 June 2019.
16. Republic of South Africa. [Internet]. Health Professions Act 56 of 1974. Pretoria: Government Printer. Available from: https://www.ufs.ac.za/docs/librariesprovider25/cpd-documents/cpd-health-professions-act-56-of-1974-1018-eng.pdf?sfvrsn=0. Accessed 3 July 2019.
17. Republic of South Africa. [Internet]. Basic Conditions of Employment Act: Act No. 20 of 2013. Cape Town: Government Printer. Available from: https://www.gov.za/sites/default/files/gcis_document/201409/371399-12-act20of2013basiccondofemploya.pdf. Accessed 17 March 2019.
18. World Health Organization (WHO). The World Heath Report 2008. Primary health care now more than ever: introduction and overview. Geneva: WHO; 2008. Available from: http://www.who.int/iris/handle/10665/69863. Accessed 25 January 2019.
19. Cohen J, Gabriel B, Terrell C. The case for diversity in the health care workforce. Health Aff. 2002;21(5):90-102. https://doi.org/10.1377/hlthaff.21.5.90.
20. Bosco L, Lorello G, Flexman A, Hastie M. Women in anaesthesia: a scoping review. Br J Anaesth. 2020;124(3):135-47. https://doi.org/10.1016/j.bja.2019.12.021.