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Job satisfaction among anesthetists in Ethiopia—a national cross-sectional study

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Summary

Background: Ethiopia has substantially increased production of associate clinician anesthetists. This study aimed to determine the level of and factors that predict job satisfaction among a national sample of anesthetists.

Methods: A cross-sectional study conducted in 2014 sampled 252 anesthetists. Respondents rated 37 items related to job satisfaction and working and living conditions using a Likert scale, which ranged from 1 (strongly disagree) to 5 (strongly agree). Univariate and multivariable logistic regressions were used to determine factors associated with the main outcome variable, level of job satisfaction. Adjusted odds ratios and 95% confidence intervals were calculated to show the magnitude of associations.

Results: Less than half ($n = 107$, 42.5%) of anesthetists were satisfied with their job. Work environment (aOR = 1.87, 95% CI = 1.06, 3.31) and more than 10 years of experience working in the public health system (aOR = 4.96, 95% CI = 1.11, 22.13) were predictors of job satisfaction in the multivariable model.

Conclusion: Ethiopian anesthetists have low levels of job satisfaction, with work environment and years of experience being factors that predict their satisfaction positively. Motivation and retention of this cadre will require emphasis on creating a safe and conducive work environment, and interventions designed to motivate junior anesthetists.

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KEYWORDS

anesthetists, Ethiopia, job satisfaction, motivation, task shifting

1 | INTRODUCTION

There is an increasing global focus on ensuring access to safe surgery, which is currently inadequate in low-resource settings.¹⁻⁴ A shortage of both human⁵ and financial⁶ resources for anesthesia services contributes to the lack of universal access to safe surgical and anesthetic care, and countries have responded by implementing a task-shifting approach^{7,8} developing cadres of associate clinicians who are trained to provide anesthesia.^{9,10}

Ethiopia is an example of a country that has substantially increased training opportunities for associate clinician anesthesia professionals (called anesthetists). Anesthetists are not physicians, but rather, they are a cadre of professionals who have received either diploma or bachelor-level degree training. Though limited, opportunities for masters' level training are also available for this cadre, leading to a MSc degree in anesthesia.

The government has made impressive gains in increasing the number of anesthetists in the country, with the number increasing from 252 in 2013¹¹ to 1281 in 2018.¹² The country's human resources for health strategy includes explicit targets to increase the number of trained anesthetists to 3284 by 2020 and 5769 by 2025.¹³

Increasing the numbers of trained anesthesia providers is not enough—supporting them so that they are motivated and retained is also a priority. Job satisfaction is a predictor of the length of stay in a job, motivation, and job productivity,¹⁴ and studies have shown correlations between job satisfaction and absenteeism, burnout, and other factors that may affect patient satisfaction.^{15,16}

Health worker job satisfaction has been studied extensively, with study approaches often based on content motivation theories, which consider satisfaction to be an outcome of intrinsic factors such as personal achievement, sense of accomplishment, and prestige as well as extrinsic factors, derived from elements in the work environment such as pay and benefits, working conditions, and resources. Intrinsic factors can be motivating to workers, while extrinsic factors can be demotivating and lead to dissatisfaction.^{15,17-19}

The literature on anesthetists' job satisfaction is limited. A study of Dutch nurse anesthetists found that work climate was correlated to job satisfaction,²⁰ and anesthetic technicians in New Zealand reported teamwork, practical aspects of the job, clinical management, and patient contact as important factors in job satisfaction.²¹ However, in these contexts, anesthetists work under direct or indirect supervision of physician anesthesiologists, which is not the case in many resource-poor settings, where anesthetists are often solely responsible for providing anesthesia care.

In Ethiopia, studies have documented generally low job satisfaction rates for health workers across various cadres. Yami et al found that 46.2% of health workers in Jimma University hospital were dissatisfied with their jobs²²; a study of midwives in Addis Ababa found an overall mean job satisfaction rate of 52.9%,²³ and only 44.2% of providers working at health facilities in Harari region were satisfied with their jobs.²⁴ However, none of the studies have included a national sample, and there has been no study focusing on the job satisfaction of anesthetists. This study aimed to fill that gap by answering the following questions: (1) Are anesthetists working in public health facilities in Ethiopia satisfied with their jobs? (2) What factors are associated with job satisfaction for this cadre?

2 | METHODS

A national cross-sectional study was conducted from May 28 to June 14, 2014. A total of 1354 health professionals working in 227 public health facilities (hospitals and health centers) were included in this study. The study population included: nurses (n = 424), medical doctors (n = 374), anesthetists (n = 252), midwives (n = 177), health officers (n = 127), and health managers (n = 217). This paper discusses results for anesthetists, who are associate clinicians and not physicians.

Two-stage sampling was used with health facilities as the primary sampling unit and the health worker cadres mentioned above as the secondary sampling unit. Because anesthetists are only available at the hospital level, 108 hospitals were randomly selected using simple random sampling technique (computer-generated random numbers) from a hospital sampling frame (list of hospitals in Ethiopia). This comprised 88% of all public hospitals available in Ethiopia at the time of the study.

Using statistical parameters of 95% confidence interval, expected proportion of intention to leave as 0.5, a design effect of 1.2, and a relative precision of 10%, an adjusted minimal sample size of 232 anesthetists was calculated. Given that the total number of anesthetists working per hospital in Ethiopia is small, we invited and interviewed all anesthetists from the sampled 108 hospitals.

Anesthetists were eligible if they were full-time permanent hospital employees, had at least 6 months of work experience in anesthesia, and were available and willing to participate. No anesthetists were interviewed at 4 hospitals, either because none were on staff or available at the time of data collection. On average, 2.4 anesthetists (range: 1 to 10) were interviewed at each of the 104 hospitals.

2.1 | Data collection

A structured researcher-designed questionnaire was used to collect quantitative data on sociodemographic information. Respondents were also asked to rate 37 items related to job satisfaction and working and living conditions using a 5-point Likert scale, which ranged from 1 (strongly disagree) to 5 (strongly agree). The tool was pretested on 5% of the planned study population in health facilities and management structures in Oromia region, focusing particularly on comprehensibility and relevance of the questions for all types of health workers included in the study. The instruments were reviewed after the pretest, mainly to clarify the questions, revise sequencing, and adapt the demographic and work-related questions to the Ethiopian context.

2.2 | Data analysis

The outcome variable was generated from the response to the statement “considering everything, I am satisfied with my job.” Responses were dichotomized into 2 categories—“satisfied,” which included the “agree” and “strongly agree” responses, and “not satisfied,” which included “disagree,” “strongly disagree,” and “neutral.”

Exploratory factor analysis was performed, but the analysis did not result in useful item classifications. A review of the literature was used to group the 37 items into 8 categories with the potential to predict job satisfaction. These were salary and benefits, supervision and management, recognition, interactions, professional opportunities, work environment, living conditions, and job stability.^{15,25} Cronbach alpha was calculated to check the internal consistency reliability of items in each category.

Chi-square was used to compute the association in the level of satisfaction between different categorical sociodemographic variables, with a *P* value <.05 to determine statistical significance, and univariate and multivariable logistic regression was used to determine factors associated with our main outcome variable, level of job satisfaction. Adjusted odds ratios (AOR) and 95% confidence intervals (CI) were calculated to show the magnitude of associations.

3 | ETHICAL CONSIDERATIONS

The study protocol received ethical approval from the Johns Hopkins School of Public Health Institutional Review Board, Baltimore, Maryland, (IRB No.: 5303), and the Ethiopian Federal Ministry of Health gave permission to conduct the study. Informed consent was obtained from all respondents, and individual identifiers were not used during data collection and analysis.

4 | RESULTS

All categories with Cronbach alpha greater than or equal to .5 were considered for the analysis. One category (job stability) was dropped given a low coefficient (Table 1).

Study participants were primarily male ($n = 189$; 75%), aged between 30 and 39 ($n = 174$; 69.1%), and were under a current obligation to work within the public health system ($n = 163$; 65%). The median number of years of experience in the public health system was 4.1 for all respondents (interquartile range 1.1-10.1, data not shown).

Less than half of respondents ($n = 107$, 42.5%) stated that they were satisfied with their job. There was a statistically significant association between job satisfaction and age, current obligation to work within the public health system, and years working in the public health system (Table 2).

TABLE 1 Categories for analysis

Category	Items	Cronbach α
Salary and benefits	1 My salary package is fair	.656
	2 My salary is fair compared to other staff with the same level of responsibility	
	3 My benefits (such as transportation, duty allowance, and housing) are fair compared with other staff at my level	
Supervision and management	4 My supervisor applies personnel policies and practices fairly to me	.754
	5 I have a current work plan developed with my supervisor	
	6 My annual performance appraisal is based on my work plan	
	7 My job description is clear and up to date	
	8 My supervisor is available when I need support	
	9 The head of this health facility is competent and committed	
Recognition	10 I feel there are sufficient opportunities for promotion with my employer.	.564
	11 I receive recognition for doing good work	
	12 I feel that the organization values my work	
	13 I feel that the community values my work	
Interactions	14 I have a good relationship with coworkers	.591
	15 Overall, the morale level in my team or work group is good	
	16 I consider myself a part of the local community that I serve as a health worker	
Professional opportunities	17 I have been given the training that I need to succeed in my position	.573
	18 I have access to coaching and mentoring when needed	
	19 The job is a good match for my skills and experience	
Work environment	20 The facility takes specific measures to protect me against HIV/AIDS and other occupational hazards	.777
	21 My work load is reasonable	
	22 I have the supplies I need to do my job well and safely) (such as gloves, needles, bandages, sutures, disinfectants	
	23 I have the working equipment I need to do my job well and efficiently) (such as ultrasound, X-ray, blood pressure cuffs	
	24 This facility has good access to drugs and medication	
	25 My work space is clean	
	26 I can take time to eat lunch almost everyday	
	27 At work, I have access to safe, clean water	
	28 At work, I have good access to electricity	
	29 At work, I have good internet connectivity	
	30 I would encourage my friends and family to seek care here	
	Living conditions	
32 At home, I have good access to electricity		
33 I have access to good schooling for my children		
34 I have safe and efficient transportation to work		
35 The community where I live has good shopping and entertainment		
Job stability	36 I am not worried about losing my job	.125
	37 I intend to continue working here for at least 2 years	

TABLE 2 Percent of anesthetists who are satisfied with their jobs, by sociodemographic and work-related characteristics, Ethiopia, 2014

Characteristic Number (Total)	All Respondents N (%) 252	Satisfied		P Value
		N 107	% 42.5	
Sex				
Male	189 (75)	83	43.9	.418
Female	63 (25)	24	38.1	
Age in years				
30-39	174 (69.1)	65	37.4	.014
≥40	78 (30.9)	42	53.9	
Place of birth				
Urban	135 (54)	59	43.7	.668
Rural	117 (46)	48	41	
Marital status				
Married	111 (44)	53	47.6	.132
Not married/divorced	141 (56)	54	38.3	
Children or dependents				
None	62 (25)	24	38.7	.750
1-2	73 (29)	33	45.2	
3-4	70 (28)	28	40	
≥5	46 (18)	22	47.8	
Qualification				
First degree or above	164 (65)	71	43.3	.715
Diploma/TVET	88 (35)	36	40.9	
Type of hospital				
Primary (zonal/regional)	67 (27)	30	44.8	.196
General	94 (37)	45	47.9	
Referral	91 (36)	32	35.2	
Upgraded/specialized after the first qualification				
Yes	122 (48)	53	43.4	.76
No	130 (52)	54	41.5	
Region				
Addis Ababa	38 (15)	14	36.8	.123
Afar	2 (0.8)	2	100	
Amhara	53 (21)	19	35.8	
Benshangul Gumuz	9 (4)	2	22.2	
Gambela	1 (0.4)	1	100	
Harari	5 (2)	3	60	
Oromia	72 (29)	28	38.9	
SNNPR	45 (18)	21	46.7	
Somali	8 (3)	4	50	
Tigray	19 (8)	13	68.4	
Current obligation to work in the public health system				
Yes	163 (65)	61	37.4	.029
No	89 (35)	46	51.7	

(Continues)

TABLE 2 (Continued)

Characteristic Number (Total)	All Respondents N (%) 252	Satisfied		P Value
		N 107	% 42.5	
Experience in the public health system (in years)				
<1 year	74 (29)	23	31.1	.011
1-5 years	96 (38)	43	44.8	
5-10 years	38 (15)	14	36.8	
>10 years	44 (17)	27	61.4	

TABLE 3 Factors predicting job satisfaction for anesthetists, univariate logistic regression, Ethiopia, 2014

Category	OR	95% CI for OR	
		Lower CI	Upper CI
Sex (ref.: male)			
Female	0.77	0.43	1.37
Age in years (ref.: <30)			
30-39	1.20	0.11	13.46
≥40	2.27	0.20	26.01
Place of birth (ref.: urban)			
Rural	0.90	0.55	1.50
Marital status (ref.: married)			
Not married/divorced	1.47	0.89	2.44
Children or dependents (ref.: none)			
1-2	1.24	0.63	2.47
3-4	1.06	0.52	2.13
≥5	1.45	0.67	3.14
Upgraded/specialized after the first qualification (ref.: yes)			
No	0.93	0.56	1.54
Qualification (ref.: first degree or above)			
Diploma/TVET	0.92	0.54	1.55
Type of hospital (ref.: primary hospital)			
General hospital (zonal/regional)	1.13	0.60	2.12
Referral hospital	0.66	0.35	1.25
Current obligation to work in the public health system (ref.: yes)			
No	1.79*	1.06	3.02
Salary and benefits	1.57*	1.13	2.20
Supervision and management	1.86*	1.36	2.54
Recognition	1.86*	1.34	2.57
Interactions	1.81*	1.19	2.75
Professional opportunities	1.42*	1.08	1.85
Work environment	2.39*	1.58	3.64
Living conditions	1.27	0.97	1.68

(Continues)

TABLE 3 (Continued)

Category	OR	95% CI for OR	
		Lower CI	Upper CI
Experience in the public health system (in years) (ref. <1 year)			
1-5 years	1.80	0.95	3.40
5-10 years	1.29	0.57	2.94
>10 years	3.52*	1.61	7.69

*P value <.05.

In a univariate logistic regression, none of the sociodemographic factors were predictors of job satisfaction except having no current obligation to work in the health system (OR = 1.79, 95% CI = 1.06, 3.02) and more than 10 years of experience working in the public health system (OR = 3.53, 95% CI = 1.61, 7.69). All intrinsic and extrinsic factors except living conditions were predictors of job satisfaction (Table 3).

Only 2 factors remained a predictor of job satisfaction in a multivariable logistic regression: work environment (aOR = 1.87, 95% CI = 1.06, 3.31) and more than 10 years of experience working in the public health system (aOR = 4.96, 95% CI = 1.11, 22.13) (Table 4).

5 | DISCUSSION

Less than half of the anesthetists in Ethiopia reported that they were satisfied with their jobs; other studies of health workers in the country have found comparable evidence,²²⁻²⁴ except for 1 study which found that 79.5% of respondents were satisfied with their jobs.²⁶ Findings from other settings vary, though most have found higher satisfaction levels, including 70.5% of nurses in South Africa,²⁷ 97.9% of community health workers in Rwanda,²⁸ and a range of 69% to 91% for health workers in a rural health facility in Vietnam.²⁹

Our study found that the work environment is a predictor of job satisfaction for Ethiopian anesthetists. This category included factors related to access to a clean and safe working environment, adequate working supplies and

TABLE 4 Factors predicting job satisfaction for nonphysician anesthetists, multivariable logistic regression, Ethiopia, 2014

	Adjusted OR (aOR)	95% CI for aOR	
		Lower CI	Upper CI
Salary and benefits	1.20	0.82	1.76
Supervision and management	1.22	0.81	1.83
Recognition	1.41	0.89	2.24
Interactions	1.04	0.63	1.72
Professional opportunities	0.98	0.70	1.35
Work environment	1.87*	1.06	3.31
Living conditions	0.97	0.69	1.37
Current obligation to work in the public health system (ref.: yes)			
No	1.44	0.74	2.80
Experience in the public health system (ref.: <1 year)			
1-5 years	2.18	0.69	6.88
5-10 years	1.59	0.46	5.53
>10 years	4.96*	1.11	22.13

*P value <.05.

equipment, protection against occupational hazards, and the opportunity to have resting breaks. A systematic review³⁰ found that nurses working in units with good environments presented higher job satisfaction, lower burn-out, and lower intention to leave. Findings specific to anesthesia professionals are limited and mainly report on the workforce in high-resource settings. A nonsystematic review article found that control of the work environment was one of the most relevant factors in job satisfaction for physician anesthesiologists,³¹ and a Dutch study of anesthesia teams found that nurse anesthetists were more likely to rate work conditions as being related to job satisfaction when compared to anesthesia specialists and trainee anesthetists (specialists).³²

Anesthetists in low-resource settings often have to work in challenging work environments, with limited equipment and supplies such as water, electricity, oxygen, and analgesics.³³ Though providers in these settings have applied innovative approaches to improve working conditions such as using buckets of water (when no running water is available), using backup generators or torches or mobile phone lights when there is no electricity and working with nurses or family members to manually ventilate patients,³⁴ policy makers, and other stakeholders must prioritize ensuring the availability of these basic supplies.

Additional efforts should focus on creating adequate environments that foster communication, increase participation and autonomy of employees, promote control over work to avoid overload, and recognize achievements.³¹ Attention should also be paid to the prevention of occupational hazards such as infection, physical injuries, and exposure to chemicals and waste. Studies in Ethiopia have also documented high rates of work place physical or verbal abuse or threats among nurses from either coworkers, patients, or patients' families,^{35,36} and this should be further addressed, making the work environment more safe.

Working experience in the public health system was also found to be a predictor of job satisfaction, with anesthetists who had more than 10 years of working experience³⁷⁻³⁹ being more likely to be satisfied with their jobs. This corroborates findings from similar studies, and may be because junior staff often have to work less desirable shifts and longer hours, may not be selected for continuing professional development activities, and may have less autonomy and leadership opportunities. It may also be that junior professionals are not aware of organizational policies and programs to enhance motivation. Conversely, older employees may have become accustomed to and accept organizational policies and programs, and are paid higher salaries because of longer years of service. Efforts should be made to design targeted interventions to address motivation for junior anesthetists, including ensuring that they are informed about and aware of existing employee wellness and motivation programs.

Mentorship of junior health workers by more experienced ones has been shown to positively influence job satisfaction⁴⁰ and should be considered in this context, including creating structured mentoring and coaching systems that will allow more experienced anesthetists to support and positively influence new anesthetists.

6 | LIMITATIONS

The authors are not aware of any other national study looking at anesthetist job satisfaction in Ethiopia or in any other low-resource setting. This paper fills an important gap in the literature. The national sample is representative, but did not include providers working in the private sector. The study did not use a standardized and validated study tool, and relied on a single question to measure job satisfaction. Additional studies to determine the effect of job satisfaction on the quality of patient care can provide further insights that will inform design, implementation, and monitoring of strategies to improve the work climate for this cadre.

7 | CONCLUSION

Empirical evidence on health worker satisfaction rates can be useful in informing policies and strategies to reduce attrition and improve performance. Ethiopian policy makers and managers should be alerted by our findings, and they should pay attention to the motivation and retention mechanisms for a substantial number of anesthetists. This

is even more important considering the government's plan to invest significantly in training new professionals for this cadre.

Efforts to motivate and retain this cadre of providers will require emphasis on creating a safe and conducive work environment, and interventions designed to motivate junior anesthetists. An enhanced level of staff satisfaction with the work environment will likely spill also over onto clients and increase satisfaction with service quality.⁴¹

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CONFLICT OF INTEREST

The authors have no conflict of interest to declare.

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