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ORIGINAL ARTICLE

SATISFACTION AND TURNOVER INTENTION OF PHYSICIANS AND HEALTH OFFICERS IN GOVERNMENT HEALTH FACILITIES: A NATIONAL CROSS-SECTIONAL STUDY

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ABSTRACT

Introduction: Improving satisfaction, motivation and retention of health workers is an important policy imperative. Unsatisfied and unmotivated health workers are less likely to provide safe and quality care, satisfy their clients, and stay in their current job.

Objective: To assess job satisfaction and turnover intention of physicians and health officers in government health facilities and factors associated with those perceptions.

Methods: A national cross-sectional study was conducted involving 375 physicians and 127 health officers working in government health facilities selected randomly from the nine regional states and two city administrations based on a two-stage sampling strategy. Data were collected in 2014 using a face-to-face interview. The main variables of interest were job satisfaction, intention to leave and factors associated with job satisfaction and turnover intention. We conducted both descriptive analysis and multivariable logistic regression analysis in SPSS 24.

Results: Considering everything, only 39.2% of physicians and 48.8% of health officers said they were satisfied with their job. Specifically, the percentage of respondents satisfied with their salary & benefits, living conditions, facility infrastructure & supplies, management & leadership, workload, and recognition by the community were 17.5%, 40.5%, 40.7%, 47.3%, 68.6% and 86%, respectively. Moreover, 47.5% of physicians and 61.4% of health officers said they planned to leave their post within one year. Low pay, poor access to higher education, and limited opportunities for promotion were the three most important reasons for a decision to leave. The odds of job satisfaction was higher among health officers than physicians, and among respondents with more favorable rating of facility management & leadership, salary & benefits, and recognition by the community. The likelihood of intention to leave was lower among respondents with a more positive perception of facility management & leadership and their living conditions. Males, specialists and respondents working in secondary and tertiary hospitals were less likely to plan to leave. However, satisfaction with salary & benefits was not associated with turnover intention.

Conclusions: There is low job satisfaction and high turnover intention among physicians and health officers in the public sector. Although physicians were less likely to be satisfied than health officers, we did not find significant difference in their intention to leave their post. We recommend improving leadership and management, compensation package, living conditions and appreciation by the community to increase job satisfaction and retention.

Key words: satisfaction, motivation, retention, physician, health officer, Ethiopia

INTRODUCTION

Investing in the health workforce is key to attaining global health development goals (1-3). Physicians are a vital member and leader of the health workforce, playing a critical role in delivering essential healthcare services and improving health outcomes (2-4). No wonder the number of doctors, along with nurses and midwives, is the basis for establishing minimum workforce density threshold to attain global health development goals (2). Public health officers, who do many of the primary health care tasks of physicians, are also important members of the health workforce around the world especially in Africa (5, 6). Public health officers exist in dozens of African countries (often in equal or larger number than physicians)

and have different names in different countries such as non-physician clinicians, associate clinicians and clinical officers (5). In Ethiopia, the direct entry health officers receive four years of university education and are deployed mainly in health centers, while direct entry doctors are trained for six years and are deployed in hospitals.

Improving satisfaction, motivation and retention of health workers is an important policy imperative (3). Unsatisfied and unmotivated health workers are less likely to provide safe and quality care, satisfy their clients, and stay in their current job (7-10). Lower job satisfaction is also bad for health workers as it can lead to burnout, lower productivity, and mental health problems (8, 11).

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High turnover of staff hurts accessibility and quality of health services, results in loss of institutional memory, and incurs huge cost to health systems (9, 12-14).

Some research evidence indicate significant problems with physician motivation and retention in Ethiopia. Despite having a very low physician density (0.03 per 1000 population) even by African standards, more than a quarter of Ethiopian-trained physicians are known to have migrated abroad (15). Intention to migrate is also high, 60% among junior doctors (16) and 53% among medical students (17). Retrospective studies have also pointed to significant attrition. A 6-year retrospective record review in East Wellega reported physician attrition rate of 47.2% (18). Another 20-year retrospective study in the largest medical college in the country found an overall turnover rate of 92.8% (19). Although these studies demonstrate high mobility of the physician workforce, the underlying reasons are not studied well. Moreover, to the best of our knowledge, there is only one study that investigated job satisfaction of doctors (16). Although the study reported that majority of them were not satisfied, its generalizability is constrained by the small sample size (88 doctors) and focus on a single graduate cohort (2004/5 graduating class). Accordingly, the primary objective of this study was to assess the satisfaction and turnover intention of physicians in Ethiopia's public health sector and factors influencing those perceptions. Recognizing the considerable task sharing with health officers, the secondary objective of our study was to compare satisfaction and turnover intention of physicians with that of health officers.

METHODS

A national cross-sectional study was conducted from 28 May to 14 June 2014, covering the nine regional states and two city administrations of Ethiopia. Although the study involved multiple categories of healthcare providers working in 227 health facilities, this manuscript focuses on physicians and health officers.

To obtain a nationally representative data, a two-stage stratified cluster sampling strategy was used. We selected health facilities in the first step and health workers in the second step. The eleven regions and city administrations were considered as strata and the 122 hospitals and 2,660 health centers as clusters. The sample government health facilities were allocated proportionally to each region. Health facilities were selected from each region/city administration using simple random sampling technique. Subsequently, data collectors received lists of available health workers from each facility and selected them randomly.

The physicians sampling frame was list of hospitals while health officers were selected from a sampling frame of facilities that included health centers and hospitals. Physicians and health officers who had been full time employees at least for 6 months in the facility were eligible for the survey.

Separate sample sizes were calculated for physicians and health officers to obtain a reliable estimate for each cadre. We applied a single proportion formula and the following assumptions: 95% level of confidence, 50% proportion (as there was no previous national estimate and to get the maximum sample size), 5% margin of error, and 1.2 design effect based on MEASURE Evaluation recommendation (20). We made further adjustment by considering a finite population correction (According to a 2013 HRIS assessment report by the FMOH, there were 2,668 doctors and 5,621 health officers in the public sector) and a 10% allowance for non-response rate. Accordingly, the calculated sample size was 432 for physicians and 468 for health officers. Based on MEASURE Evaluation recommendation for facility-based survey (20), we decided to sample four health care providers per facility making the number of required hospitals to fulfill the physician sample size to be 108. Similarly, 117 health centers and hospitals were required to achieve the health officer sample size.

Data were collected using face-to-face interview. The survey instrument was adapted from a similar study in Uganda (21). We measured overall job satisfaction by asking response to the statement "Considering everything, I am satisfied with my job". The response options were on a 5-point scale (strongly disagree=1, disagree=2, neutral=3, agree=4, and strongly agree=5). During data analysis, "Agree" and "strongly agree" responses were categorized as satisfied and percent satisfied was estimated accordingly. We also enquired about satisfaction with specific items related to the job and working and living conditions using the same 5-point scale. During analysis, we aggregated responses to specific items into thematic construct guided by the motivation and retention literature (22); namely, salary & benefits, management and leadership, facility infrastructure, work load, living conditions and recognition by the community (feeling valued and part of the local community). Except for living conditions and work load, the reliability statistics were acceptable, supporting our decision to put the items in the proposed constructs (Table 1).

Table 1: Thematic organization of items in specific job dimensions and their reliability statistics.

Job dimension and items	Reliability statistics (Cronbach's Alpha)
Salary and benefits	0.67
My salary package is fair	
My salary is fair compared to other staff with the same level	
My benefits (transport, duty allowance, housing, etc.) are fair compared with other staff at my level	
Management and leadership	0.88
I feel there are sufficient opportunities for promotion with my employer	
There is a good match for my skills and experience	
My job description is clear and up-to-date	
I receive recognition for doing good work	
My supervisor applies personnel policies and practices fairly to me	
I have a current work plan developed with my supervisor	
My annual performance appraisal is based on my work plan	
I feel that the organization values my work	
My supervisor is available when I need support	
I would encourage my family and friends to seek care here	
I have been given the training I need to succeed in my position	
I have access to coaching and mentoring when needed	
The facility takes specific measures to protect me against HIV/AIDS and other occupational hazards	
The head of the health facility is competent and committed	
I have a good relationship with co-workers	
Overall, the moral level in my team is good	
Workload	
My workload is reasonable	0.35
I can take time to eat lunch almost everyday	
Facility infrastructure	0.70
I have the supplies I need to do my job well and safely	
I have a working equipment to my job well and efficiently	
This facility has good access to drugs	
My work space is clean	
At work, I have access to safe clean water	
At work, I have good access to electricity	
At work, I have good internet connectivity	
Living conditions	0.43
At home, I have access to safe clean water	
At home, I have good access to electricity	
I have access to good schooling for my children*	
I have safe and efficient transportation to work*	
I am not worried about losing my job	
The community where I live has good shopping and entertainment	
Feeling valued and part of local community	0.72
I consider myself a part of the local community	
I feel that the community values my work	

*These two items were not included in the scale entered into logistic regression analysis as the questions were not applicable to many respondents. Entering them in the logistic regression analysis would have caused large missing

Turnover intention was measured by asking respondents if they were planning to leave their job in the next one year. The possible responses were "Yes" or "No". Study participants were also asked to rate the importance of factors in influencing a decision to leave their job. Importance was rated on a 5-point scale (not important=1, somewhat important=2, important=3, very important=4, and extremely important=5). During data analysis, we merged "very important" and "extremely important" to be interpreted as "highly important".

Data were analyzed in SPSS 24. Multivariable logistic regression analysis (using stepwise backward elimination) was performed to identify factors associated with job satisfaction and turnover intention. Sex, age, place of birth, marital status, profession, educational status, level of facility, salary & benefit construct, management and leadership construct, facility infrastructure construct, work load construct, living conditions construct, recognition by the community construct, and intention to stay were entered as independent variables in the job satisfaction model.

Preferring to treat the constructs as continuous variables, it was the mean scores for each construct that were used as independent variables in the regression analysis. The same independent variables except intention to stay were entered in the intention to leave model.

Informed verbal consent was obtained from all respondents. A trained interviewer discussed elements of the consent form, answered questions study participants had, and secured oral consent. Ethical clearance was secured from Johns Hopkins University Institutional Review Board (IRB) and further approval was obtained from the Ministry of Health of the Federal Democratic Republic of Ethiopia. We sought and obtained a waiver of signed consent from the IRB since our study posed minimal risk and did not involve patients .

RESULTS

Socio-demographic data

A total of 502 respondents (375 physicians and 127 health officers) working in 226 health facilities (107 hospitals and 119 health centers) participated in the study. The response rate was 95% for physicians but 29.9% for health officers, as we could not find the expected number of health officers in the surveyed facilities. Moreover, eight health officers working in nearby hospitals were invited as replacement when sampled health centers did not have one. The mean age of study participants was 28.5 years. Most study participants were males (75.1%), single (68.5%), urban origin (63.7%), without postgraduate qualification (90%), and working in health center, primary hospital or general hospital (80%) (Table 2).

Table 2: Socio-demographic characteristics of study participants

Variable	Physicians N (%)	Health officers N (%)	Total N (%)
Facility			
Primary hospital/ health center	89 (23.7%)	120 (94.5%)	209 (41.6%)
General hospital	186 (49.6%)	6 (4.7%)	192 (38.2%)
Tertiary hospital	100 (26.7%)	1 (0.8%)	101 (20.1%)
Sex			
Male	299 (79.7%)	78 (61.4%)	377 (75.1%)
Female	76 (20.3%)	49 (38.6%)	125 (24.9%)
Marital status			
Single	272 (72.5%)	72 (56.7%)	344 (68.5%)
Married	103 (27.5%)	55 (43.3%)	158 (31.5%)
Place of birth			
Urban	248 (66.1%)	72 (56.7%)	320 (63.7%)
Rural	127 (33.9%)	55 (43.3%)	182 (36.3%)
Duration of stay in current facility			
years or less	337 (89.9%)	99 (78.0%)	436 (86.8%)
years	27 (7.2%)	19 (15.0%)	46 (9.2%)
16 years and above	11 (2.9%)	9 (7.0%)	20 (4.0%)
Under obligation			
Yes	311 (82.9%)	62 (48.8%)	373 (74.3%)
No	64 (17.1%)	65 (51.2%)	129 (25.7%)
Residential			
house	24 (6.4%)	22 (17.3%)	46 (9.2%)
Own or parents'	256 (68.3%)	15 (11.8%)	271 (54.0%)
Provided by fa- cility Rented	95 (25.3%)	90 (70.8%)	185 (36.8%)

Job satisfaction

Considering everything, 39.2% of physicians (95% CI=34.3%, 44.1%) and 48.8% of health officers (95% CI=40.1%, 57.5%) were satisfied with their job, with not statistically significant difference between the two groups. A higher percentage of respondents who were female, married, rural origin, with postgraduate qualification,

working in lower level facilities and expressing intention to continue working in the current facility for at least two years said they were satisfied than their counterparts. However, the difference in job satisfaction was statistically significant for educational qualification ($p=0.037$) and intention to stay ($p<0.001$) only (Table 3).

Table 3: Cross-tabulation of categorical independent variables with the two outcome variables

Independent variables	Percent satisfied	P-value	Percent intending to leave in a year	P-value
Profession				
Medical doctor	39.2%	0.058	47.6%	0.007
Health officer	48.8%		61.4%	
Gender				
Male	39.5%	0.096	48.7%	0.06
Female	48.0%		58.4%	
Marital status				
Single	40.4%	0.411	52.8%	0.27
Married	44.3%		47.5%	
Place of birth				
Urban	38.4%	0.054	52.5%	0.404
Rural	47.3%		48.6%	
Education level				
Undergraduate	41.2%	0.037	53.8%	0.005
Postgraduate	46.0%		26.5%	
Facility level				
Primary hospital/health center	42.3%	Ref	61.8%	Ref
General hospital	42.6%	0.957	46.5%	0.002
Tertiary hospital	37.9%	0.473	27.6%	<0.001
Intention to stay >2 years				
Yes	64.1%	<0.001		
No	32.8%			

Figure 1 presents satisfaction with specific aspects of job, as measured by composite constructs. The proportion of respondents satisfied with their salary and benefits, living conditions, facility infrastructure, and management and leadership were 17.5%, 40.5%, 40.7% and 47.3%, respectively. Interestingly, however, 86.6% were pleased with the recognition by the community they serve.

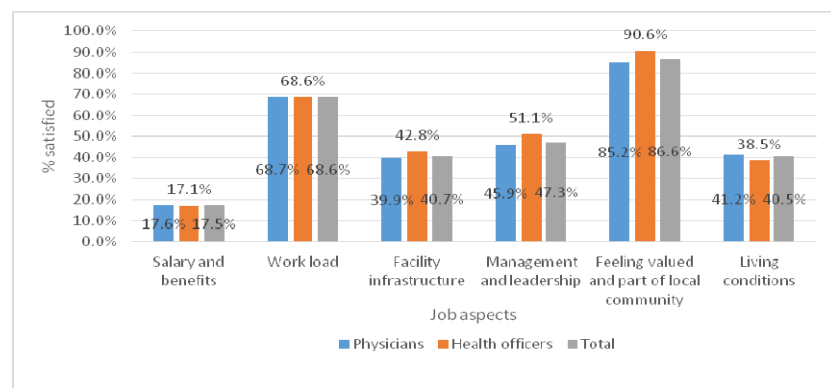


Figure 1: Physician and health officer's satisfaction with specific aspects of job constructs

A backward stepwise multivariable logistic regression was conducted in order to identify factors associated with overall job satisfaction. Five of the fourteen independent variables entered on step one were retained in the final model, of which three aspects of job (management & leadership, salary & benefits, and recognition by the community) and one background characteristic (profession) were statistically significant. Higher rating of management & leadership, salary & benefits, and recognition by the community were independently associated with increased job satisfaction. One unit increase in each of these independent variables was associated with a corresponding improvement in the odds of overall job satisfaction by 2.76, 2.65 and 1.54-folds, respectively.

Health officers were 77% more likely to be satisfied than physicians. Higher score on intention to stay for at least two years was also associated with better job satisfaction- a 38% higher likelihood of satisfaction for every unit increase in intention to stay. Although having a postgraduate education, and ratings of facility infrastructure, work load and living conditions yielded significant positive association with overall job satisfaction in bivariable analysis, they lost their significance when confounders were accounted for. Sex, age, marital status, place of birth and type of facility did not influence the likelihood of job satisfaction both in bivariable and multivariable analyses (Table 4).

Table 4: Factors associated with physicians and health officers job satisfaction in multivariable logistic regression analysis.

Variable	Crude Odds Ratio (95% CI), P-value	Adjusted Odds Ratio (95% CI), P-value
Profession		
Physician		
Health officer	1.48 (0.99, 2.22), 0.058	1.77 (1.04, 2.99), 0.034*
Sex		
Male	Ref	
Female	1.41 (0.94, 2.12), 0.096	1.60 (0.93, 2.73), 0.087
Age	1.02 (0.99, 1.05), 0.219	
Marital status		
Single	Ref	
Married	1.17 (0.80, 1.72), 0.411	
Place of birth		
Urban	Ref	
Rural	1.44 (0.99, 2.07), 0.054	1.53 (0.95, 2.47), 0.081
Educational qualification		
Undergraduate		
Postgraduate	1.64 (1.03, 2.61), 0.037	
Type of facility		
Primary hospital/ health center	Ref	
General hospital	1.01 (0.68, 1.51), 0.957	
Tertiary hospital	0.83 (0.51, 1.37), 0.473	
Intention to stay > 2 years	1.69 (1.47, 1.95), <0.001	1.38 (1.16, 1.65), <0.001*
Work load scale	1.53 (1.23, 1.90), <0.001	
Salary & benefit scale	3.09 (2.39, 3.99), <0.001	2.65 (1.95, 3.60), <0.001*
Management & leadership scale	5.46 (3.83, 7.79), <0.001	2.76 (1.85, 4.13), <0.001*
Facility infrastructure scale	2.29 (1.75, 3.0), <0.001	
Living conditions scale	1.79 (1.41, 2.27), <0.001	
Recognition by community scale	2.04 (1.56, 2.67), <0.001	1.54 (1.10, 2.16), 0.012*

Note: * denotes statistically significant associations. Adjusted odds ratio is not shown for variables which were eliminated from the model during the multivariable analysis

Intention to leave

Asked if they were planning to leave their job within one year, 47.6% of physicians (95% CI=42.5%, 52.6%) and 61.4% of health officers (95% CI=52.9%, 69.9%) answered yes. Furthermore, only 29.9% of physicians and 23.6% of health officers said they intended to stay in their facility for at least two years. A higher percent of respondents who were female, single, urban origin, with undergraduate qualification, and working in lower level facilities expressed turnover plan than their counterparts; however, the difference was statistically significant for education level and type of facility only (Table 3).

Figure 2 shows factors influencing the decision to leave a facility. Physicians rated low pay, poor access to higher education, limited opportunities for promotion, concern about safety at work, and unfair treatment by a supervisor as the top five push factors. Health officers provided a similar response: low pay, poor access to higher education, limited opportunities for promotion, high cost of living, and limited opportunities for in-service training topped the list.

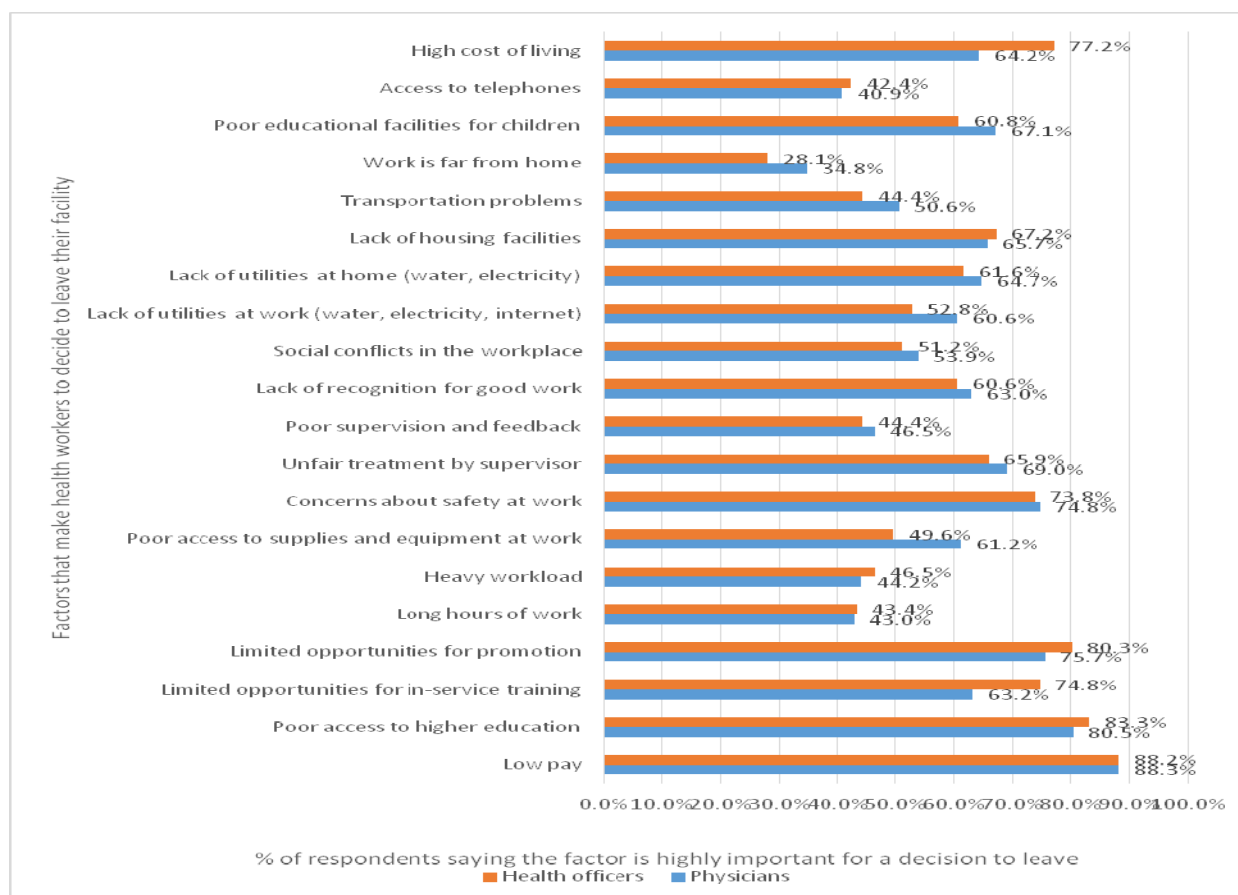


Figure 2: Factors influencing physicians and health officers decision to leave a facility

A backward stepwise multivariable logistic regression was done to identify factors associated with turnover intention. Of the thirteen independent variables entered in the model, two aspects of job (management & leadership, living conditions) and three background characteristics (sex, facility level, educational status) were significantly associated with the intention to leave. A unit increase in ratings of facility management & leadership and living conditions reduced the odds of intention to leave by 53% and 30%, respectively.

Respondents working in tertiary and secondary hospitals, respectively, were 76% and 41% less likely to want to leave compared to those working in lower levels (primary hospitals and health centers).

The chances of turnover intention was 46% lower among respondents with a postgraduate or specialty training. On the other hand, the odds of planning to quit was 77% higher among female respondents.

However, the significant negative association observed in the bivariable analyses between intention to quit and other aspects of job (salary & benefits, infrastructure & supplies, work load, and recognition by the community) were not sustained in the multivariable analysis. Age, place of birth, and marital status were also not associated with turnover intention,

although the first two had significant association in bivariable analysis. Health officers were more likely than physicians to intend to leave in the bivariable analysis but the significance of this association was not maintained in the multivariable analysis (Table 5).

Table 5: Factors associated with physicians and health officers' turnover intention in multivariable logistic regression analysis.

Variable	Crude Odds Ratio (95% CI), P-value	Adjusted Odds Ratio (95% CI), P-value
Profession		
Physician	Ref	
Health officer	1.75 (1.16, 2.64), 0.007	
Sex		
Male	Ref	
Female	1.48 (0.98, 1.23), 0.06	1.77 (1.11, 2.80), 0.015*
Age	0.95 (0.92, 0.98), 0.002	
Place of birth		
Urban	Ref	
Rural	0.86 (0.59, 1.23), 0.404	
Marital status		
Single	Ref	
Married	0.81 (0.56, 1.18), 0.27	
Educational status		
Undergraduate	Ref	
Postgraduate	0.51 (0.31, 0.82), 0.005	0.54 (0.32, 0.92), 0.024*
Type of facility		
Primary hospital/Health center	Ref	
General hospital	0.54 (0.36, 0.80), 0.002	0.59 (0.38, 0.91), 0.018*
Specialized hospital	0.24 (0.14, 0.40), <0.001	0.24 (0.13, 0.42), <0.001*
Work load scale	0.79 (0.64, 0.96), 0.021	
Salary & benefits scale	0.63 (0.51, 0.78), <0.001	0.81 (0.63, 1.04), 0.099
Management & leadership scale	0.40 (0.30, 0.53), <0.001	0.47 (0.34, 0.65), <0.001*
Facility infrastructure scale	0.58 (0.45, 0.74), 0.001	
Living conditions scale	0.52 (0.41, 0.67), 0.001	0.70 (0.53, 0.93), 0.013*
Recognition by community scale	0.83 (0.67, 1.03), 0.092	

DISCUSSION

Ethiopia's current health sector plan (2015/16-2019/20) has set ensuring quality and equity of healthcare and creating a compassionate, respectful and caring workforce as top priorities (23). Increasing retention of the health workforce is an explicit target in the health sustainable development goal (24).

Attaining these priority goals will depend to a large extent on building and retaining a motivated workforce. Accordingly, motivation and retention is rightly recognized as an important policy objective in national and global health workforce strategies (25, 26). It is against this backdrop we would like to discuss our findings on the state and drivers of satisfaction and turnover intention of physicians and health officers in Ethiopia's public sector.

According to our study, majority of physicians are not satisfied with their job and nearly half of them plan to leave in a year. Likewise majority of health officers are unsatisfied and are planning to quit their post. The lack of satisfaction is likely to dampen motivation, performance and retention of health workers as well as undermine their ability to provide person-centered care and increase patient satisfaction (7-11). The linkage between job satisfaction and intention to stay is supported by our study. Intention to leave, which is a precursor of actual turnover, is also associated with a host of negative consequences to the health system (9, 12-14).

The problem of intention to leave, however, is not limited to quitting. Even if the desire to leave may not materialize, many reluctant stayers will tend to have poor motivation and performance (27-29). Hence, the low satisfaction and high turnover intention found in our study presents considerable threats to attaining Ethiopia's goals of quality, equitable and compassionate healthcare and its progress towards the health sustainable development goal.

The low level of job satisfaction in our study (39.2% for physicians and 48.8% for health officers) is comparable to findings of most study reports from Ethiopia and elsewhere. Results from more than half a dozen local studies have reported job satisfaction prevalence among health workers in the range of 41.4%-63% (16, 30-35). The outlier was a study by Hotchkiss et al. (36), which reported higher satisfaction (79.5%). However, the comparison with local studies is constrained by the fact that prior studies from Ethiopia barely included physicians and health officers. The prevalence of job satisfaction found in our study is also in agreement with physician satisfaction in three developing countries- 37% in Uganda (21), 44.8% in India (37) and 45.7% in China (38) - but lower than the 52.1% reported from South Africa (39). The higher satisfaction in South Africa may be due to inclusion in the study of other health workers in addition to doctors.

The high magnitude of turnover intention found in our study (47.6% of physicians and 61.4% of health officers) confirms previous reports that workforce mobility is a major health system challenge in Ethiopia. Two studies had reported that half of the nurses intended to leave their job in the next year (32, 40), while another found that 54.4% of health workers were planning to leave within five years (30). Other studies had also suggested that two-thirds of pharmacy professionals (31) and 60% of nurses did not want to stay in the current facility (41).

Studies involving doctors and medical students had also found that more than half of the respondents were planning to emigrate (16,17), which is in line with a recent report that showed Ethiopia is the fifth largest source of African trained physicians to the United States (42). More tellingly, a cohort study had found that about 60% of doctors and nurses quit their first job within two years (16). Retrospective studies had also confirmed high physician attrition rates (18, 19, 43). Studies from other developing countries had also reported similarly high prevalence of turnover intention among physicians: 57% in Uganda (21), 55.2% in Iraq (44) and 41.4% in South Africa (39).

Many factors influence job satisfaction and turnover intention. In our study, a substantial percentage of physicians and health officers were unsatisfied with most aspects of their job, especially their salary and benefits, living conditions, facility infrastructure, and management and leadership. In addition, satisfaction with facility management and leadership, salary & benefits, and recognition by the community were found to be significant predictors of overall job satisfaction. Although both physicians and health officers have low job satisfaction, physicians fared worse in our study. The determinants of job satisfaction reported in this study are generally in agreement with other Ethiopian studies. A study of early career doctors and nurses had found high level of dissatisfaction with salary, chances of promotion, access to training, and working conditions (16).

Several other studies had also reported that health workers in Ethiopia were least satisfied with their salary & benefits (16, 30-36, 45-47). Some of these studies also showed that satisfaction with salary & benefits was significantly associated with overall job satisfaction and motivation (35, 36, 46). Similarly, many Ethiopian studies had indicated that job satisfaction and motivation is influenced by non-financial factors, such as promotion and development opportunities, leadership and management, recognition and appreciation by management and/or patients, work environment and interaction with colleagues, work load, and facility resources (30-36, 45-49).

With respect to push factors influencing a decision to leave one's job, low pay, poor access to higher education, and limited opportunities for promotion were the top three reasons mentioned by respondents in our study. In the multivariable analysis, satisfaction with management & leadership and with living conditions reduced the odds of intention to leave.

However, although low pay was mentioned as the number one consideration in a decision to leave and perceived adequacy of salary & benefit influenced job satisfaction, satisfaction with salary & benefit was not associated with turnover plan when confounding variables were taken into account. This may suggest that it takes more than dissatisfaction with salary & benefits to make a decision to leave. Or it may be that health workers think departure would not solve the compensation issue, as most will likely end up in the public sector which has largely consistent pay scale.

From background characteristics, the findings that having a postgraduate training and working in higher level hospitals reduced the likelihood of intention to quit make sense. Respondents whose need for further education is satisfied are more likely to be stable. Similarly, respondents located in secondary and tertiary hospitals are more likely to have better professional and economic opportunities in their place contributing to their stability. On the other hand, female health workers were more likely to plan to leave, which needs further research. However, between physicians and health officers, the odds of wanting to leave did not differ significantly. The modifiable determinants of turnover found in our study are largely in agreement with other published studies from Ethiopia. A cohort study had reported that health workers who were more satisfied with their job were less likely to leave abroad (16). Different studies had also identified lack of job satisfaction, low pay, poor access to higher education, limited opportunities for promotion, and poor work environment and group cohesion as reasons pushing health workers to consider leaving (16, 30-32, 40, 41).

Evidence from literature reviews on motivation and retention confirm the factors identified in our study. A systematic review of studies from developing countries distilled determinants of motivation and retention into financial factors, career development, continuing education, health facility infrastructure, availability of medical equipment and supplies, hospital management, and personal recognition and appreciation [(2). Other reviews of literature have also corroborated these findings, showing salaries and benefits, leadership and management style, work environment, education and training opportunities, empowerment and autonomy, and work load influence staff motivation and retention (9, 13, 50-53).

Strengths and limitations of the study

There are many studies on satisfaction of health workers in Africa and Ethiopia.

However, most do not include large enough physicians in their sample and tend to be limited to fewer geographic regions and facilities. It is appreciable that our study recruited large and nationally representative sample of physicians. The comparison of physicians with health officers is also another strength. However, the inadequate sample size for health officers is a limitation and interpretation and generalizations of the findings on health officers' job satisfaction and turnover intention should be done cautiously. Although the cross-sectional study design does not allow us to establish a cause and effect relationship between factors and outcome variables, we tried to control the effects of confounders by doing multivariable analysis. Moreover, although the questionnaire was adapted from a similar survey in Uganda and most of the job satisfaction scales had good measurement reliability, the scales for work load and living conditions had low Cronbach's Alpha. This would need to be taken into account in the interpretation of our findings. Last but not least, we recognize that turnover intention may not necessarily equate with desire to leave and may not always result in exit.

Conclusions

The considerable level of dissatisfaction and turnover intention found in our study poses a serious challenge to Ethiopia's public health system and can undermine efforts to achieve health development goals. While we recognize that motivation and retention strategies should be comprehensive to address the broad range of factors frustrating health workers, our data suggest prioritizing management and leadership, compensation and benefit, living conditions, and appreciation by the community.

On the non-financial front, highest attention should be put on improving facility management and leadership. Upgrading human resource management skills of health leaders (through training and coaching) to foster positive, sound and fair leadership and management practices in the context of broader quality improvement can enhance motivation and retention of doctors and health officers. Improving living conditions such as availing good housing with reliable electricity and water supply can also be useful for retention. In view of the importance respondents placed on being valued by the community, media advocacy highlighting the positive contributions of health workers can boost motivation.

The second important aspect is related to salary. Increasing salary to a level enough to provide decent living is essential but fiscal constraints in the public sector may make the political process challenging and lengthy.

We contend that the return on investment will be worth the increased cost, as the resultant improvement in workforce motivation and performance will ensure value for money. A major barrier to making drastic salary revision in Ethiopia is that pay scale for health workers is regulated by the Ministry of Public Service and Human Resource Development, and the Ministry of Health has limited scope to maneuver. Although development partners pump huge financial resources into the health sector, this money has not been used to top up salaries. So, one policy option to consider is de-linking health workers pay scale from the Public Service and tapping into money obtained from development assistance until the country's economy is able to shoulder the expanded wage bill. Practical lessons can be drawn from other African countries, which increased health wage bill, de-linked health workforce from the Civil Service and topped-up salaries (54, 55). A less drastic but useful policy option is to supplement incomes of health workers by allowing managed dual practice. One approach is enabling health workers to see private patients in government health facilities outside regular work hours (otherwise known as private wing). Alternatively, health workers may be allowed to hold a second job outside the government facility. Both practices currently exist (16) but tend to be limited and poorly managed. Private wing is available in some facilities; however, even where it is practiced, it is marred with poor management including grievances about inclusiveness and fair distribution of revenues among all facility staff. Although many doctors have second job in private clinics, it is not officially recognized and regulated. As a result, it is not acknowledged as a benefit by doctors. And because it is unregulated, it is blamed for absenteeism from work.

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We believe our study makes an important contribution to the motivation and retention literature on physicians and health officers in developing countries. It is one of the few studies from Africa, which is based on large and nationally representative sample and will hopefully stimulate further research.

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Conflict of interest

The authors have not conflict of interest to declare.

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