

Motivation of health workers and associated factors in public hospitals of West Amhara, Northwest Ethiopia

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Background: Health professionals' motivation reflects the interaction between health professionals and their work environment. It can potentially affect the provision of health services; however, this important attribute of the workplace climate in public hospitals is not usually given serious attention to the desired level. For this reason, the authors of this study have assessed the level of motivation of health professionals and associated factors in public hospitals of West Amhara, Northwest Ethiopia.

Methods: A facility based cross-sectional study was conducted in eight public hospitals of West Amhara from June 1 to July 30, 2013. A total of 304 health professionals were included in this study. The collected data were analyzed using SPSS software version 20. The reliability of the instrument was assessed through Cronbach's α . Factor scores were generated for the items found to represent the scales (eigenvalue greater than one in varimax rotation) used in the measurement of the variables. The scores were further analyzed using one-way analysis of variance, *t*-tests, Pearson's correlation, and hierarchical multiple linear regression analyses. The cut-off point for the regression analysis to determine significance was set at β (95% confidence interval, $P < 0.05$).

Results: Mean motivation scores (as the percentage of maximum scale scores) were 58.6% for the overall motivation score, 71.0% for the conscientiousness scale, 52.8% for the organizational commitment scale, 58.3% for the intrinsic motivation scale, and 64.0% for organizational burnout scale. Professional category, age, type of the hospital, nonfinancial motivators like performance evaluation and management, staffing and work schedule, staff development and promotion, availability of necessary resources, and ease of communication were found to be strong predictors of health worker motivation. Across the hospitals and professional categories, health workers' overall level of motivation with absolute level of compensation was not significantly associated with their overall level of motivation.

Conclusion: The strongest drivers of all motivation dimensions were found to be nonfinancial human resource management tools, so policy makers and health workforce stake holders should focus on these tools to alleviate motivation problems.

Keywords: motivation, health workers, public hospitals, West Amhara, Northwest Ethiopia

Introduction

Motivation can be defined as a person's degree of willingness toward achieving an individual goal that is consistent with that of the organization and the reasons underlying behavior which can be either intrinsic or extrinsic.^{1,2}

The health system is labor and capital intensive. But it is the health workers' motivation, manifested in their behavior in the workplace, that greatly affects the outcome of the health system.³⁻⁵ Low morale among the workforce can undermine

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the quality of service provision and drive workers away from the profession. The quality of health services, their efficacy, efficiency, accessibility, and viability depend on the performance of health professionals delivering these services, so it is important to consider personnel motivation and development a central issue in health policy.⁶

The health and human service industry is undergoing one of the most massive transformations of any industry in our history, due, in part, to mergers, reorganizations, cost containment, a changing workforce, and technological changes that are doubling every 3 years.⁷ Health-care delivery is highly labor-intensive, and service quality, efficiency, and equity are all directly mediated by the workers' willingness to accomplish their tasks. Despite the fact that the availability of resources and worker competencies are not sufficient by themselves to ascertain the desired worker performance. But the objectives of the health system are not being attained in most countries because of serious human resource policy crises, particularly of poor motivation.^{2,6,8} So, it is increasingly becoming important that policymakers should be aware of health worker motivation and its impact on health sector performance. Yet, little concern has been given to the issue.⁹

Sub-Saharan Africa is coping with 24% of the world's disease burden, while concurrently local health systems are unresponsive, inefficient, inequitable, and even unsafe. Even though the reasons for this underperformance are multiple, health workers' motivation has been suggested as the main determinant of health-care service quality.¹⁰ For many years, the continent has been conducting efforts to provide effective, equitable, and affordable health care services, but health indices in Africa have either remained unchanged or have declined. It is believed that this underperformance threatens the achievement of Millennium Development Goals to "reduce child mortality, improve maternal health and combat HIV/AIDS and malaria".¹⁰⁻¹³ Poor implementation of systematic improvements is the critical challenge, and personnel motivation is a key component in this functional failure.¹⁴⁻¹⁶

Health workers of the health sector have specific features either internal to themselves or extrinsic to the work or are facing challenges that cannot be ignored. At this time, motivation can play an integral role in many of the compelling challenges of health care by providing direction and purpose.¹⁷

The quality of performance in health facilities to a large extent depends on the available human resource mix and their motivation.^{10,18} The workforce is among the most important inputs to any health system and has a strong impact on the performance of health facilities.¹⁹ Despite the existence of several theories of motivation in the workplace,^{9,10,20} little empirical

data is available on the extent to which these theories have been used to address motivation-related issues among health-care workers in Africa, even if there is enormous evidence of poor health professionals' achievement.^{3,9}

Evidence from Ethiopia shows that the health system has been trying to improve the quality of health-care services through undertaking massive health sector-wide reforms such as business processing and re-engineering, health-care financing, and health information systems. Even though there is a human resource crisis in the sector, 82% of nurses and 73% of doctors work for the public sector. But the public health sector which uses a large amount of human resource is ineffective and inefficient, and the health service being delivered through it has been seriously affected by poor human resource management. As part of the sector wide reform effort aimed at improving the quality and accessibility of health services through decentralization system, the Ethiopian Federal Ministry of Health recognized the problem and gave priority to build management capacity of hospitals through pioneering blue print standards and made progress in establishing health management by chief executive officers (CEO) as profession.²¹ But all these efforts were not as such satisfactory in achieving the anticipated objectives, due to different reasons. The health system is still suffering from human resource crisis. Many trained health professionals are migrating overseas or leaving to work in the private sector because motivated health professionals are more likely to work for profit in private sectors and nongovernmental organizations as opposed to working in the public sectors,^{22,23} and this appears to be a critical problem of the health sectors.

Low level of health professionals' work motivation is a critical challenge for many countries' health system, yet surprisingly very little attention has been given to this topic. While a few studies have explored particular aspects of the motivation question, such as staff retention or satisfaction, virtually no comprehensive studies fully investigated the health workers' motivation in the developing countries and it is questionable to use the findings of studies of industrialized countries which vary in context.⁹

With the challenges facing this sector, including technological advancements, the metamorphosis occurring in the demographic and diversity of the workforce, the re-structuring, re-engineering, downsizing, the current events facing professionals in the health sector, and the ever changing customer needs, understanding the needs of the worker becomes more essential than ever to promote a quality health service and to create healthy work environment. Understanding the motivation scores, identifying the

motivating factors for the health professionals, and recognizing how the manager and the leaders can successfully motivate the staff is a question of increasing concern.^{9,24} Therefore, this study has tried to assess the overall health professionals' motivation score in public hospitals of West Amhara and the factors associated with the scores.

Methods and materials

Study setting and design

A cross-sectional study was carried out from June 1, 2013 to July 30, 2013 in West Amhara public hospitals in the north western part of Ethiopia. In this subregion, there were three referral hospitals, two general hospitals, and three primary hospitals at the time of data collection. There were also 225 health-care professionals working in the three primary hospitals, 207 health professionals working in the two general hospitals, and 827 health professionals working in the three referral hospitals.

Participants of the study and sample size estimation

The source population for the study was made up of categories of health professionals working in the eight public hospitals of West Amhara region. The list of health workers of each hospital was obtained from the human resource managers, and the human resource managers were also asked to indicate whether an employee was on leave, education, or long-term training during the data collection. The categories included: doctors, nurses, laboratory personnel, pharmacists, X-ray technicians, environmental health experts, physiotherapists, health officers, and anesthetists.

Sample size was estimated using single population proportion formula. There was no previous information on health workers' motivation scores and factors associated with health professionals' motivation scores in the area of this study. Hence, it was hypothesized that at least 50% of the health workers were assumed to be motivated, and the sample size was estimated taking this as the starting point with 95% confidence level and 5% degree of accuracy. Since the study population was less than 10,000 (1,259), population correction formula was used to adjust sample size that is:

$$NF = \frac{n}{1 + [n/N]}, \quad (1)$$

where NF is the final sample size, n is the initial sample size without correction formula, N is the total number of health

professional present in the public hospitals which means potential source population during the study period.

Sample size was increased by 5% to compensate for nonrespondents, resulting in the final sample size of 325. The total sample size that was allocated to each of the categories was proportional to the size method. From each health professional category, the respondents were then selected through systematic random sampling method. If a sampled person was not available and it was not possible to make arrangements to meet him/her later, data collectors were informed in advance to collect data from the next health professional given in the list.

Instruments and measures

The starting point for potential constructs and questions to be included in the self-administered close-ended questionnaire was a questionnaire designed for developing a tool to measure motivation among health professionals; as seen in our previous work which was based on earlier work in a Kenyan study on health professionals.²⁵ Additionally, studies on motivation of health workers were reviewed by taking particular notes on the most relevant ones to the Ethiopian situation.²⁶⁻²⁹ From these sources, and review of studies that used motivation theory in health, we identified constructs which were considered to be categorized as likely determinants and outcomes of motivation. The questionnaires contained sociodemographic variables (age, sex, marital status, religion, perceived religiosity, salary, educational status, ethnicity, profession, time in post). Performance review and performance appraisal result utilization, on-site training, additional remunerations and benefits, staffing pattern and flexible work schedule, opportunity of staff development, availability of necessary materials, working space, and ease of communication in the organization were the institution-related variables included in the tools. All the determinants and outcome constructs were measured in the form of a five-point Likert scale (1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree). The questionnaire was translated into Amharic and then back into English to ensure semantic equivalence. It was then pretested on 5% of the study population in a hospital found in East Amhara.

The internal consistency of the scales was assured, and a Cronbach's alpha of 0.70 or greater was the cut-off point to judge the internal consistency of each scale. Correlation was performed, and Pearson's correlation coefficient $r > 0.4$ was used as the cut-off point. This cut-off means that each item has a shared variance of at least 16% with the factor under consideration.^{28,29} Factor analysis was performed, and

factors with eigenvalues greater than one were taken for further analysis.

The clarity and cultural acceptance of each of the items was tested. So, major revision was not required. The validity and reliability of the scales used in this study are reported elsewhere.

Data collection procedure

Data were collected by two health professionals with diplomas, who took training on how to use the instruments and techniques of consent requisition. To adhere to confidentiality, the names in the questionnaires were replaced by codes, and the participants were informed about these so that they had a record of their own codes to facilitate tracking of the completeness of their respective questionnaires. The supervisors and the principal investigator were responsible for checking on the completeness of the data on site. Incomplete questionnaires were put in offices arranged for this purpose so that participants could complete their own questionnaires. All participants were acknowledged for their time and assistance.

Data analysis

The scales for negatively worded questions were reverse coded so that 1 was “strongly agree” and 5 “strongly disagree” before analysis. Thus, a high score shows disagreement with a negative statement and is therefore suggestive of higher motivation. The data were analyzed using SPSS software version 20. Explanatory variables like time in post were recoded and recategorized before computing. Variance analysis through analysis of variance and Student’s *t*-test was done for comparing health workers’ motivational scores across the categories. Multiple linear regressions were used for identifying determinants of health workers’ motivation. A significance level *P*-value <0.05 was used in all cases as a cut-off point.

Because of many explanatory variables, stepwise regression method was used to examine the relationship between independent and dependent variables in the preceding models and enter method in the last model. Sociodemographic variables were entered into the first linear regression model, while the institutional and system related variables were entered into the second one. The variables found to be significantly associated with the dependent variable in the preceding models ($r > 0.4$, $P < 0.05$) were entered into the final model. Those variables which had *P*-value of less than 0.05 were the important predictors of health workers’ motivation. In stepwise regression, each independent measure was selected as a predictor based on the significance of *t*-statistics

in a step-by-step selection to avoid multicollinearity, which is commonly associated with multiple regression analysis; furthermore, other assumptions like linearity and normality were also checked.

To facilitate comparison between the motivation dimensions, scores were reported as both raw mean scores and the standardized percentage of the maximum scale (%SM) scores. This also enables future researchers to easily compare their findings with those in this study even if they make use of different number of items and/or response categories. These scores lie between 0 and 100.³⁰ (%SM) was calculated as:

$$\text{Standardized \% of maximum scale (\%SM)} = \frac{\text{Actual score} - \text{minimum score}}{\text{Maximum score} - \text{minimum score}} \times 100\% \quad (2)$$

Ethical considerations

Clearance to carry out this study was obtained from the Ethical Clearance Review Committee of Jimma University, College of Public Health and Medical Sciences. To carry out the study, permission was obtained from the Amhara Regional Health Bureau and the CEOs of the respective hospitals. Written informed consent was obtained from each participant before enrollment as respondents. The participants were well informed that they had the right to participate or not in the study. Neither the respondents’ name nor other personal data were included in the research report.

Results

Characteristics of respondents

After a month of data collection, 304 completed questionnaires were received, representing a response rate of 93.5%. Most of the participants were from referral hospitals; a reflection of the number of health professionals in those hospitals was compared to the other two levels of hospitals. Seventy-five (24.7%) of the respondents were from primary hospitals. General hospitals had the lowest number of participants 49 (16.1%). The skill mix included 152 (50%) nurses, 54 (17.8%) doctors, 40 (13.2%) laboratory personnel, 28 (9.2%) pharmacy staff, and 9.9% others. Out of the total respondents, 153 (50.3%) were diploma holders and the remaining 151 (49.7%) were medical doctor/degree holders and above. The majority (79.9%) of the respondents had been in their current post for less than 5 years (Table 1).

Table 1 Characteristics of professionals in public hospitals of West Amhara, Northwest Ethiopia, 2013

Characteristics	n (%)
Sex	
Male	189 (62.2)
Female	115 (37.8)
Age (years)	
≤25	136 (44.7)
26–35	139 (45.7)
36–45	19 (6.3)
46–55	9 (3)
≥56	1 (0.3)
Net salary (ETB)	
≤1,400	68 (22.4)
1,401–3,500	223 (73.4)
3,501–5,000	11 (3.6)
≥5,001	2 (0.7)
Remuneration (ETB)	
0–100	111 (36.5)
101–500	153 (50.3)
501–1,000	34 (11.2)
>1,001	6 (2.0)
Perceived religiosity	
Very religious	78 (25.7)
Religious	131 (43.1)
Somewhat religious	88 (28.9)
Not at all religious	7 (2.3)
Educational status	
Diploma	153 (50.3)
Degree/MD	145 (47.7)
Master or specialist	6 (2.0)
Profession category	
Doctor	54 (17.8)
Nurses all type	152 (50)
Laboratory all type	40 (13.2)
Pharmacy all type	28 (9.2)
Others ^a	27 (8.9)
Marital status	
Single	128 (42.1)
Married	171 (56.2)
Separated	5 (1.7)
Management position	
Yes	83 (27.3)
No	221 (72.7)
Hospital	
Primary	75 (24.7)
General	49 (16.1)
Referral	180 (59.2)
Performance review	
Formal system	170 (55.9)
Informal	76 (25)
Not reviewed	58 (19.1)
Training	
Yes	136 (44.7)
No	168 (55.3)
Years of service	
<1 year	152 (50)
1–5 years	76 (25)
5–10 years	57 (18.8)
>10 years	19 (6.3)

(Continued)

Table 1 (Continued)

Characteristics	n (%)
Results of performance utilized for	
Training	23 (7.6)
Promotion	90 (29.8)
Rotation	25 (8.2)
Demotion	12 (3.9)
Multipurpose	22 (7.2)
Not used	132 (43.4)

Notes: n=304. ^aOthers: X-ray, environmental, physiotherapy, ophthalmic nurse, anesthesia. "Master" refers to professional who complete their second degree.

Abbreviation: MD, medical doctor.

Motivational levels of respondents

(%SM) of the overall motivation of respondents was 58.6%. When comparison was made among the dimensions of motivation, motivation was found to be the highest for conscientiousness dimension with (%SM) 71%, while it was least for the organizational commitment dimension of motivation which had (%SM) 52.8% (Table 2).

Predictors of motivation

The intrinsic motivation dimension

Sociodemographic variables were found to be significant predictors that explain the variability in the intrinsic motivation factor score. Accordingly, age, sex, the professional category of the respondents, and the type of the hospitals where the respondents work were found to be statistically associated with intrinsic motivation score. The intrinsic motivation factor for doctors was higher on average by 0.399 units (95% confidence interval [95% CI]: 0.017–0.780) compared to the nurses. The result showed female respondents had 0.129 units (95% CI: 0.104–0.421) higher intrinsic motivation score compared to males. Those health-care professionals from primary hospitals had an average of 0.143 units (95% CI: –0.755 to –0.077) lower intrinsic motivation scores when compared to those from referral hospitals. In this study, age was found to be a negative predictor of the intrinsic motivation score.

Table 2 Raw mean scores and (%SM) for the motivation dimensions among respondents recruited from public hospitals of West Amhara, Northwest Ethiopia, 2013

Motivation dimension	Raw mean score ± SD	(%SM)
Intrinsic motivation	3.79±1.257	58.33%
Conscientiousness	4.06±1.081	71.00%
Organizational commitment	3.26±1.356	52.82%
Organizational burnout	3.56±1.268	64.00%
Overall motivation score	10.03±1.975	58.61%

Notes: n=304. (%SM) is the standardized score as the percentage of possible maximum scale score, and it lies between 0 and 100.

Abbreviations: SD, standard deviation; %SM, standardized percentage of the maximum scale.

As the age of respondents increased by 1 year, the intrinsic motivation was lowered by 0.116 units (95% CI: -0.0046 to -0.001).

The relationship between sociodemographic and institutional variables with intrinsic motivation factor score is quantified. Since we used stepwise regression analysis, only variables found to be significantly associated with the dependent variable in the preceding models ($r > 0.4$, $P < 0.05$) were entered into a final model (Table 3).

Organizational commitment and motivation

The significant predictors of motivation as demonstrated by the organizational commitment of motivation were working in general hospitals ($P < 0.001$), the perception of the respondents at the staffing pattern and flexible work schedule, the perception of respondents in the professional and career development and the perception of respondents in the availability of resources, and the performance management and utilization for decision making ($P < 0.05$) were significant predictors of organizational commitment dimension of motivation.

A unit change in the perception of respondents about the availability of necessary materials and the staffing pattern and flexible work schedule increased organizational motivation score by an average of 0.150 units (95% CI: 0.042–0.262) and 0.134 units (95% CI: 0.016–0.272), respectively. A unit change in the perception of staff development and career opportunities increased the organizational commitment motivation by 0.084 units. A unit change in the perception of performance management and supervision increased organizational score by an average of 0.214 (95% CI: 0.108–0.367)

units. The category of hospitals, the perception of respondents in the performance report utilization, the respondents' perception in the staff development and career opportunities, and the perception on the availability of easy communication were significantly associated with organizational commitment motivation. But in the final model, when confounders were treated, they were found to be insignificant predictors of organizational commitment motivation (Table 4).

Burnout dimension

Performance review was the only single predictor of the burnout dimension of motivation in the simple linear regression model. So, multiple linear regression analysis was not needed. Respondents who claimed performance review had never been conducted had an average decrease of 0.155 units (95% CI: -0.875 to -0.122) in burnout motivation score as compared to those who claimed existence of formal performance assessment (Table 5).

The conscientiousness dimension

Table 6 shows the regression estimates and the relative effect of each predictor variable with organizational conscientiousness dimension of motivation.

The significant predictors of motivation as demonstrated by the organizational conscientiousness of motivation were age of respondents ($P < 0.05$), professional training in the previous 1 year ($P < 0.05$), perception on availability of resources ($P < 0.05$), and perception on staffing and flexible work schedule ($P < 0.05$). A unit increment in the age of the respondents lowered the motivation scores by 0.129 units (95% CI: -0.042 to -0.004). In this study, a unit change in the

Table 3 Sociodemographic and institutional variables as predictors of intrinsic motivation at public hospitals of West Amhara, Northwest Ethiopia, 2013

Explanatory variables	Category	n (%)	Unstandardized β (95% CI for β)	Standardized β (95% CI for β)
Age			-0.08 (-0.039, -0.007)*	-0.116 (-0.41, -0.001)*
Sex	Male	189 (62.2) ^a	-	-
	Female	115 (37.8)	0.134 (0.042, 0.345)*	0.129 (0.104, 0.421)*
Profession	Doctor	54 (17.8)	0.121 (0.017, 0.780)*	0.399 (0.017, 0.780)*
	Nurse	152 (50.0) ^a	-	-
	Laboratory	40 (13.2)	-0.025 (-0.520, 0.336)	-0.017 (-0.490, 0.366)
	Pharmacy	28 (9.2)	-0.194 (-1.337, -0.347)**	-0.192 (-0.489, 0.357)
	Others	30 (9.8)	-0.081 (-0.165, 0.028)	-0.060 (-1.340, -0.329)
Hospital level	Primary	75 (24.7)	-0.187 (-0.880, -0.211)**	-0.143 (-0.755, -0.077)*
	General	49 (16.1)	0.034 (-0.277, -0.507)	0.070 (-0.151, 0.629)
	Referral	180 (59.2) ^a	-	-
Adj R ²				0.037

Notes: n=304. ^aReferences category (categories with highest frequency taken as reference categories). *Significant at $P < 0.05$, **significant at $P < 0.01$. Negative values of standard β indicate negative predictors of HPs motivation and positive values indicate positive predictors of HPs motivation.

Abbreviations: Adj, adjusted; CI, confidence interval; HPs, health professionals.

Table 4 Sociodemographic and institutional variables as predictors of organizational commitment among health professionals in public hospitals of West Amhara, Northwest Ethiopia, 2013

Explanatory variables	Category	n (%)	Unstandardized β (95% CI for β)	Standardized β (95% CI for β)
Utilization of performance report	Used	172 (56.6) ^a	–	–
	Not used	132 (43.4)	–0.138 (–0.133, –0.044)*	–0.051 (–0.422, –0.145)
Hospital level	Primary	75 (24.7)	–0.087 (–0.086, 0.631)	–0.004 (–0.348, 0.321)
	General	49 (16.1)	0.227 (0.416, 1.257)*	0.096 (–0.046, 0.751)*
	Referral	180 (59.2) ^a	–	–
Performance management and supervision	–	–	0.380 (0.306, 0.539)***	0.214 (0.108, 0.367)***
Staffing and work schedule	–	–	0.346 (0.256, 0.487)*	0.134 (0.016, 0.272)*
Staff development	–	–	0.191 (0.079, 0.298)*	0.069 (–0.035, 0.170)
Availability of necessary resources	–	–	0.309 (0.206, 0.426)*	0.150 (0.042, 0.262)*
Communication	–	–	0.293 (0.211, 0.457)*	0.109 (–0.001, 0.251)
Adj R ²	–	–	–	0.226

Notes: n=304. ^aReferences category (categories with highest frequency taken as reference categories). *Significant at $P < 0.05$, ***significant at $P < 0.001$. Negative values of standard β indicate negative predictors of HPs motivation and positive values indicate positive predictors of HPs motivation.

Abbreviations: Adj, adjusted; CI, confidence interval; HPs, health professionals.

perception on the availability of necessary materials increased the motivation score by 0.118 units (95% CI: 0.003–0.188), and a change in the perception of easy communication in the organization increased the conscientiousness motivation by 0.142 units (95% CI: 0.024–0.234). Those professionals who had not received professional training in the past year had 0.151 units (95% CI: –0.562 to –0.093) lower conscientiousness motivation as compared to those who had received training (Table 6).

Discussion

The quality of health services, their efficacy, efficiency, accessibility, and viability highly depend on the motivation of health workers who provide the services, so it is important to seriously consider health workers' motivation as a central issue in the health policy.⁶ The results of this study could be useful, especially in the Ethiopian context where health-care human resource challenges continue to hamper the provision of quality health-care services.²¹

In general, the overall motivation score of health workers in this study was 58.6% above the standardized mean (50)

which indicates that the health professionals were just motivated. The finding of this study is comparable with the results of the study conducted in Malawi and Gaza.^{28,30}

The overall motivation results showed significant variation in mean motivation scores by sociodemographic variables such as sex, age, professional category of respondents, type of the hospitals, and duration of services, and the institutional factors such as performance management system, staffing and work schedule, staff development opportunities, furnishing necessary materials, communication, and training were found to be significant predictors of health professionals' motivation scores. In terms of variation between the sexes, motivation scores for females were likely to be higher than that of the male participants. Regression analysis showed significant association between motivation and female sex. The same results have been reported from previous studies in Zambia and Ethiopia, where female health workers were more likely to report higher work motivation as compared to males.^{26,31} In the study conducted in Zambia, it was hypothesized that men are more motivated by higher wages and prestigious jobs, while women are

Table 5 Predictors of motivation in the organizational burnout dimension of health workers' motivation at public hospitals of West Amhara, 2013

Explanatory variables	n (%)	Unstandardized β	95% CI for β	
			Upper bound	Lower bound
Performance				
Formally reviewed	170 (55.9) ^a	–	–	–
Informally reviewed	76 (25)	–0.027	–0.420	0.263
Not reviewed at all	58 (19.1)	–0.155	–0.875*	–0.122*
Adj R ²	–	–	0.016	–

Notes: n=304. ^aReferences category (categories with highest frequency taken as reference categories). *Significant at $P < 0.05$. Negative values of standard β indicate negative predictors of HPs motivation and positive values indicate positive predictors of HPs motivation.

Abbreviations: Adj, adjusted; CI, confidence interval; HPs, health professionals.

Table 6 Sociodemographic and institutional variables as predictors of conscientiousness among health professionals in public hospitals of West Amhara, Northwest Ethiopia, 2013

Explanatory variables	Category	n (%)	Unstandardized β (95% CI for β)	Standardized β (95% CI for β)
Age	–	–	–0.120 (–0.41, –0.001)*	–0.129 (–0.042, –0.004)*
Have you taken training in the past year?	Yes	136 (44.7) ^a	–	–
	No	168 (55.3)	–0.327 (–0.464, –0.025)*	–0.151 (–0.562, –0.093)*
Is performance reviewed?	Yes	246 (80.1) ^a	–	–
	No	58 (19.1)	0.183 (0.198, 0.809)*	0.130 (0.062, 0.653)*
Staffing and work schedule	–	–	0.224 (0.097, 0.286)**	0.142 (0.023, 0.221)**
Availability of necessary resources	–	–	0.205 (0.077, 0.257)*	0.118 (0.003, 0.188)*
Communication	–	–	0.224 (0.103, 0.305)*	0.142 (0.024, 0.234)*
Adj R ²	–	–	–	0.126

Notes: n=304. ^aReferences category (categories with highest frequency taken as reference categories). *Significant at $P < 0.05$, **significant at $P < 0.01$. Negative values of standard β indicate negative predictors of HPs motivation and positive values indicate positive predictors of HPs motivation.

Abbreviations: Adj, adjusted; CI, confidence interval; HPs, health professionals.

more concerned with job security and community value for the work they do.²⁶

The overall mean motivation in the intrinsic dimension was 3.79 and %SM was 58.3%; just above the standardized and raw mean scores, indicating that health professionals were motivated. This finding is comparable with the findings of the study in Malawi and Gaza strip which also revealed that public health workers were motivated to highly motivated.^{28,30} Age, type of the hospitals, and the professional category were significant predictors of the intrinsic motivation dimension.

Age of respondents was found to be a negative predictor of motivation in the conscientiousness dimension. The motivation level of respondents was found to be lowered by 0.129 units as their age increases a year. This was not the case in the Zambian study where motivation level was reported to increase as age increases.²⁶ This could be related to the absence of professional and career development schemes in the study areas that affect the enjoyment of work and achievement as stated by Daniel Pink.³²

Doctors had higher intrinsic motivation as compared to other professional categories. This finding of our study is in line with the findings of similar study conducted in a different cultural and socioeconomic environment of Cyprus; Cyprus General Hospital.³³ However, the study conducted in Zambia, which was cited earlier, indicated that nurses were highly motivated as compared to physicians and other paramedics.³⁴ This could partly be explained by the social recognition given to doctors in the Ethiopian context, their decision making power, and creativity and skill exploration they possess due to their higher academic status.³³ In this study, health professionals working in the primary hospitals had lower motivation scores as compared to those working in the referral and specialized hospitals. A decline in the varieties of profession, lowering of

employees' attitudes, and decline in organization's social and psychological environment leads to a decrease in the individual workers' effort to maintain and work toward organizational goals.³⁵

Health worker organizational commitment motivation score as measured by the mean of 3.26 and %SM was 52.8%. This is greater than the standardized mean of 50% indicating that the health workers were committed to exert and maintain efforts on their organizational goal(s), but this is lower than the earlier findings.^{26,30} Management and leadership capacity in the hospitals were reported as significant factors affecting motivation. Ineffective management and leadership practices in the organization highly affect the commitment of employees to serve and remain in post.³⁶

Working in general hospitals, perception of respondents on the staffing pattern and flexible work schedule, furnishing and supplying necessary materials, and the performance management and utilization for decision making were significant predictors of the organizational commitment dimension of motivation.

In this study, performance management was a positive predictor of health workers' motivation as measured by organizational commitment. In this study, 80.9% of respondents reported that there was performance evaluation, but only 56.4% of them reported that the performance appraisal was being used for decision making. This finding is in agreement with the finding of the study done in Mali by Dieleman et al,¹⁸ which stated appropriate performance management (ie, job descriptions, supervisions, continuous education, and performance appraisal) can positively influence the motivation of health workers. In this study, a unit increment in the perception of staff development and career opportunities had increased the commitment by 0.084 units. This finding is in agreement with the findings of the study done in Ogun State, Nigeria which revealed that the extent to

which health workers are exposed to career and professional development has a strong motivational effect on achieving organizational goals.³⁷

The mean motivation score in the burnout dimension was 3.56, which shows that health workers in this regard were just motivated. In this study, performance management system was a significant predictor of burnout dimension of motivation. Respondents who claimed their performance had never been reviewed had 0.155 units lower motivation score compared to those whose performance was measured formally. This is in agreement with the literature of World Health Organization's report, which states "job description, criteria for promotion and career progression have positive association with inspiring motivation of health professionals".³⁸

The highest %SM (71.0%) in health worker motivation score was found to be that of the conscientiousness dimension; moreover, the mean score for this dimension was as high as 4.06, which was also the case in a study done in Malawi.²⁸ But this finding is not consistent with the findings of the study done in Addis Ababa, Ethiopia,³⁹ which showed that the most significant motivation predictors for nurses were absolute payments which were insignificant in the current study. The age of the professionals, performance management practices, perception about staffing pattern and work schedule flexibility, perception about availability of necessary materials, and perception about ease of communication were significant predictors of health worker motivation as measured by the conscientiousness dimension.

Age of the respondents was found to be a strong negative predictor of motivation in the conscientiousness dimension. One year increment in age lowered the motivation level of respondents by 0.129 units. This supports the Maslow's hierarchy of needs, which revealed that the already existing goals no longer motivate workers.⁴⁰ So, as age and time in post increase, needs should be modified. This is inconsistent with the study done in Zambia which revealed that as age of respondents increased, the motivation level increased.²⁶ The mechanism is not clear.

In this study, a unit increment in the perception of staff development and career opportunities increased the conscientiousness by 0.142 units. This finding is in agreement with the findings of the study done in four local governmental agents in Ogun State, Nigeria, which revealed that the extent to which health workers are exposed to career and professional development has a strong motivational effect on achieving organizational goals.³⁷ In this study, an increase in the perception of furnishing and supplying necessary materials increased the motivation score in the conscientiousness

dimension. This finding is comparable with the findings of the study done in districts of Benin and Kenya.⁴¹

A considerable part of good management is ease of communication between hospital management and subordinates. Smooth information flow in a hospital is vital to minimize personal and organizational problems. In this study, a unit increase in the perception of fairness in communication increased the conscientiousness motivation of the respondents by 0.187 units. This finding is in agreement with the previous studies done in Kenya and Uganda that revealed that health workers feel better motivated when managers give them the opportunity to participate in meetings to discuss issues of their hospital.^{37,42} This supports the fact that successful strategies to encourage goal performance partly rest on the ability of health managers to strengthen their relationship with subordinates. The environment of the health-care facility, its infrastructure, and availability of medical equipment have emerged in this study as predictive factors of organizational commitment and conscientiousness dimensions of motivation. This finding is in agreement with the findings documented in the previous researches in Mali and Namibia.^{18,43}

In this study, basic net monthly salary, remunerations like housing and additional work other than their normal job and other benefits were insignificant predictors of health workers motivation. This is consistent with the findings of the studies carried out in different countries.^{27,38,41,43-46} But this finding is inconsistent with findings of other studies done in the capital of Ethiopia, Addis Ababa which revealed that health workers appeared to be more motivated by the payment and fringe benefits rather than extrinsic nonfinancial and intrinsic factors of motivation.³⁹ This difference could partly be due to the difference in the study settings.⁴⁷

The study design and methods used to obtain relevant data for this study are scientifically sound. Since the purpose of the study was to assess motivation, cross-sectional study design was employed. The study subjects were enrolled to the study proportionally through sample weight calculation from all professional and hospital categories. Hence, respondents were selected proportionally from all categories of health professionals. Therefore, findings are comprehensive for the Amhara Regional Health Bureau and all hospitals of West Amhara for planning, monitoring and evaluation of the ongoing human resource management (HRM) activities for improving the quality of health care services. Continuous data were properly treated by employing factor analysis, and %SM was also computed, which enables comparison between the motivational constructs and the finding of other studies. The tools used for this study were also used in other

studies, and pretests of the contextually adopted tools were carried out before the actual data collection. Furthermore, this study was ethically cleared.

However, this study was limited in linking motivation to service delivery in order to establish any possible causal link and this study did not measure performance of health workers. Response bias may result from the fact that the respondents were the health workers themselves, in which case it was possible for the respondents to report higher scores, thus biasing the results. Moreover, this study does not have the nature of in-depth description which could have been achieved if qualitative methods were employed. Therefore, the findings of this study are applicable to the study area and to other similar settings with cautious generalization.

Conclusion

The standardized mean motivation score of the respondents was greater than the standardized mean of the tool ie, 50%. Thus, health professionals are just motivated to exert and maintain efforts up to their organizational goal(s). Extrinsic nonfinancial incentives and HRM tools like improving leadership and supportive supervision, better use of performance appraisal for decision making, creating opportunities of clearer and professional development, improving staffing pattern and work schedule, supplying the necessary materials, and communicating smoothly and improving feedback mechanism play an important role in increasing motivation of health professionals; moreover, the result showed that intrinsic individual level factors like age, duration of services, health professional categories were found to be significant predictors of motivation scores.

However, across hospitals and professional categories, health workers' overall motivation score in all dimensions was not significantly associated with their absolute level of financial incentives like absolute pay of compensation. Hence, this study revealed the need for increasing health professionals' motivation, and to improve quality of health-care services, policymakers should take into account health workers' motivation with nonfinancial incentives and HRM tools as the key ingredients. This will be important in improving the implementation of performance management activities, as the actions contribute to motivation of health professionals. When nonfinancial incentives are considered, managers should have the capacity to implement selected performance management activities. Examples of performance management activities that were considered important in the study include improving leadership and supportive

supervision, better use of performance appraisal for decision making, creating opportunities for professional development, supplying the necessary materials, and communicating smoothly and improving the feedback mechanisms.

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Author contributions

ZW designed the study, participated in data collection, analysis, interpretation, and write-up, drafted the manuscript, and critically revised the manuscript. YE participated in study design, analysis and interpretation, and critically revised the manuscript. MW participated in study design, analysis and interpretation, and critically revised the manuscript. FW participated in data collection, analysis, interpretation, drafted the manuscript, and critically revised the manuscript. All authors read and approved the final manuscript.

Disclosure

The authors report no conflicts of interest in this work.

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