Leadership, Management and Governance Practices and Associated Factors Among Primary Health Care Unit Managers in Selected Areas of Eastern Ethiopia

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Acknowledgements

We would like to acknowledge the International Institute for Primary Health Care-Ethiopia for its financial support of this project and Haramaya University for granting us permission to carry out the research. We also extend our gratitude to all the individuals involved in finalizing the project, both directly and indirectly. Our heartfelt thanks to the study participants, data collectors and supervisors for their contributions. Last, but not least, we owe a special thanks to the staff of the School of Graduate Study at the College of Health and Medical Sciences at Haramaya University for their support with data entry and other administrative services. We hope this research will encourage evidence-based decision-making at primary health care units in Ethiopia.

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Acronyms

HSDP	Health Sector Development Program
PHCU	Primary health care unit
LMG	Leadership, management and governance
ETB	Ethiopian birr
COR	Crude odds ratio
AOR	Adjusted odds ratio

Abstract

Background: Primary health care managers operate in an increasingly complex environment that requires updated skills and competencies. However, little is known about the strength of leadership, management and governance practices of front-line health care managers in low-income countries like Ethiopia. Identifying such practices could help strengthen health systems and improve health outcomes.

Objective: To assess the strength of leadership, management and governance (LMG) practices and associated factors among primary health care managers in eastern Ethiopia.

Methods: We conducted a mixed-method, cross-sectional study in four areas of eastern Ethiopia from August through September 2018. Using a multi-stage sampling technique, we selected 555 participants for the quantitative portion of the study. Twenty senior health care providers were purposively sampled for in-depth interviews. A structured pre-tested, self-administered questionnaire was used to collect quantitative data and structure interviews informed the qualitative study. Frequencies and percentages were used to summarize quantitative data. Bivariate and multivariate logistic regression analyses were conducted to assess the associations between LMG practices and predictor variables, controlling for potential confounders. Qualitative data were transcribed verbatim and analyzed thematically.

Results: Slightly over half of the participants were found to engage in good management and governance practices (55% and 54.6%, respectively) and less than half demonstrated good leadership practice (48%). In multivariate logistic regression analysis, the odds of good leadership practice increased with nurses, midwives and other professionals compared with health officers. The odds of good leadership practice also increased with experience sharing with peers working at other health facilities. Experience working at another organization and sharing with peers from other facilities were significantly associated with good management practice, and having a job description was significantly associated with good governance practice. Senior health care providers perceived that managers lacked innovation and key management skills such as decision-making, time management and financial management. Although senior care providers acknowledged that there were mechanisms for holding officials accountable, they expressed concern about the potential for corruption at health facilities.

Conclusion: We found that the strength of leadership, management and governance practices among the study participants was moderate. Most health care providers observed that managers lacked crucial skills that impacted organizational performance. We recommend in-service trainings, performance-oriented job descriptions and increased opportunities for managers to share with peers as strategies to improve leadership, management and governance practices in the study area, and Ethiopia more broadly.

Background

Introduction

Ethiopia is a populous, overwhelmingly young and rural nation. With 115 million people, it has the second largest population in Africa (1). By 2050, it will rank among the ten largest countries in the world in population size (1). Forty percent of the population is less than 14 years of age and about 24% of the population are women of reproductive age (2). Seventy-nine percent of Ethiopians live in rural areas (2). While it is one of the least urbanized countries in the world, the proportion of its urban population is expected to grow from 16% to 27% by 2030 (2).

Ethiopia is also a resource-limited country whose population suffers from the double burden of communicable and non-communicable diseases. Thirty percent of the population lives in extreme poverty, at $1.90 per day (2). A 2015 review of the factors contributing to death and disability in Ethiopia found that communicable, maternal, neonatal and nutritional diseases were the leading causes of premature mortality, and non-communicable diseases such as cardiovascular disease, cancer, and diabetes were the leading causes of age-standardized death rates (3).

These stark demographic, economic, and epidemiological conditions signal the need to pay greater attention to the nature of health services in Ethiopia, especially services delivered to poor and vulnerable populations. Cognizant of this fact, the government of Ethiopia developed a pro-poor health policy in 1993 that prioritized basic health services for rural communities (4) In 1996, the government followed up with the 20-year Health Sector Development Program (HSDP) that translated the vision expressed in the health policy into action (5). The HSPD laid the groundwork for the development of an equitable and accessible health system that is focused on essential community-based preventive, promotive and curative health services (6).

The HSPD and subsequent iterations created a three-tier health system with the primary health care unit (PHCU) constituting the lowest tier of service delivery (7). The PHCU consists of health posts, health centers and a primary hospital that all together serve 100,000 people in densely populated areas and 60,000 in scattered settlements (7). The primary health care unit is staffed by front-line health service providers and middle-to lower-level managers (8).

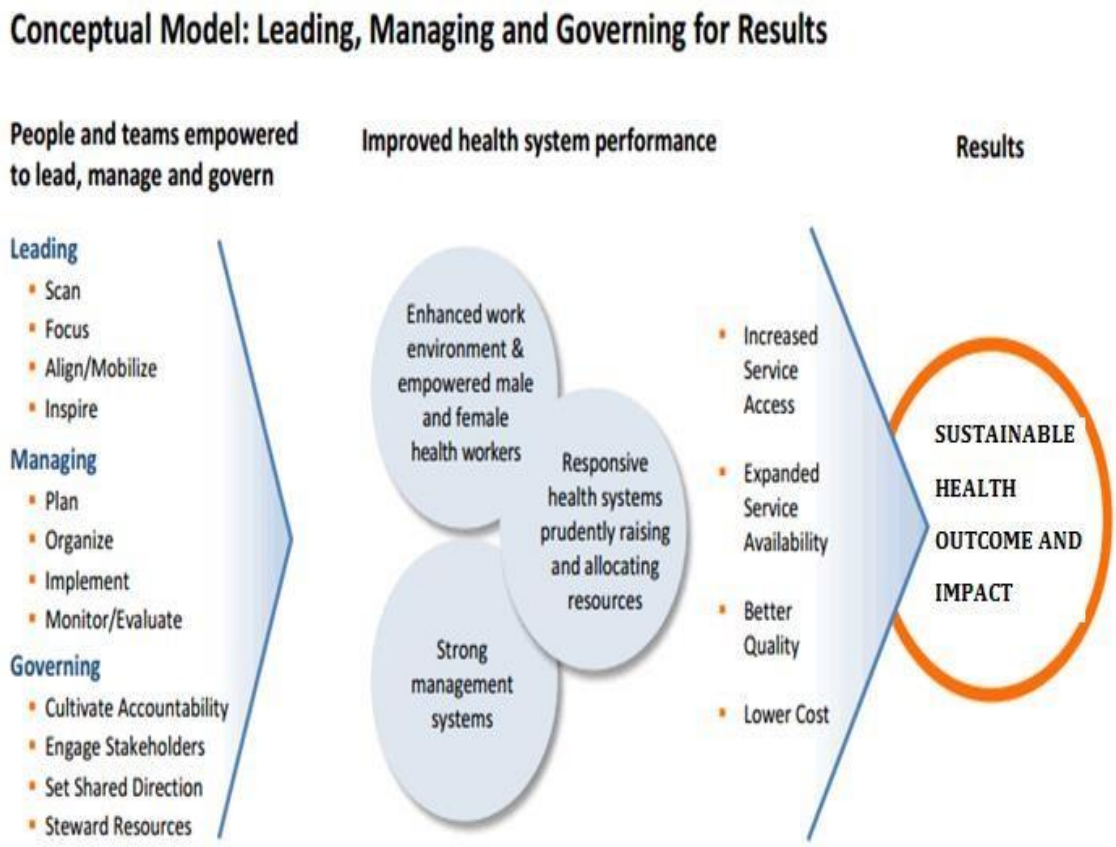
Problem statement

Globally, health systems strengthening has gained focus as a sustainable means to improve health outcomes. The World Health Organization includes leadership and governance as one of the six building blocks of a well-functioning health system (9). The assumption is that better leadership, management and governance practices will lead to improved health system performance (measured by service access, availability, quality and cost), which in turn, will result in improved health outcomes (Figure 1).

Although the Ethiopian government has consistently expressed its commitment to delivering quality and accessible health services, it has done little to support the leadership, management and governance (LMG) skills of the primary health care unit managers who impact service delivery at the grassroots level (10). Furthermore, poor leadership, management and governance can have a cascading effect that results in poor health care seeking behavior and

poor health outcomes, if poor LMG practices affect health service delivery and patient satisfaction (12).

Figure 1. "Conceptual Model: Leading, Managing and Governing for Results"
(11, p.19)



Literature review

While they are often interchangeably used, leadership, management and governance are distinct (yet complementary) concepts that need to be examined and defined separately (13). Leadership is forward thinking; it is about creating a vision and mobilizing the resources to realize it. Management has a closer focus; it ensures that resources are properly organized and utilized to meet the aims of the organization. And governance creates and enforces the policy and regulatory framework necessary for an organization to function effectively. These functions require distinct, yet overlapping, skills by those leading or managing an organization.

Studies on leadership, management and governance practices among primary health care workers in low-income countries suggest that LMG practices are typically associated with three factors: the socio-demographic characteristics of health workers, the training they received, and the health system in which they work.

A cross-sectional study that examined self-perceived leadership styles (defined as transactional, transformational and laisse-faire) of primary health care managers in the Barcelona Health Area

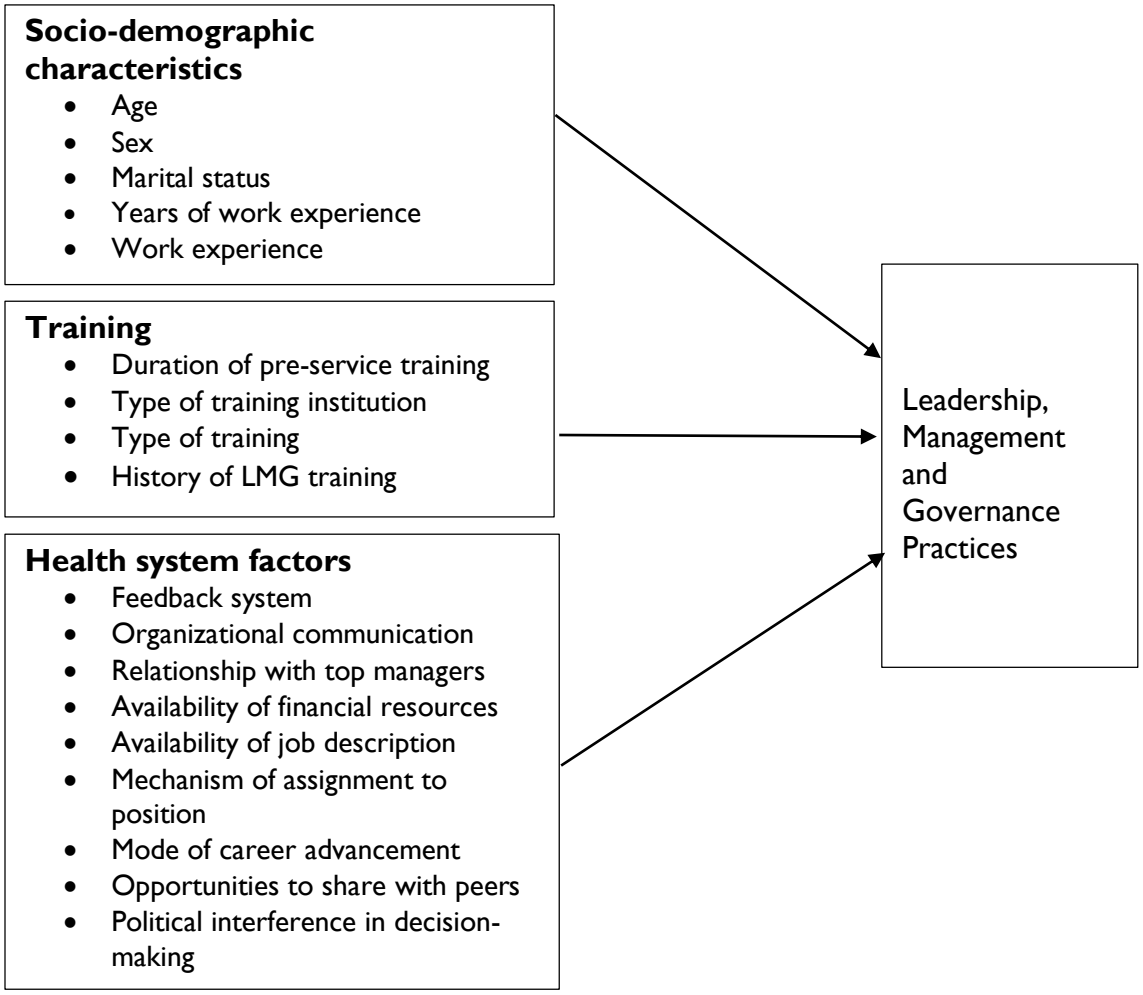
found a relationship between gender and leadership style. Specifically, the study found that women had a higher transactional leadership style than men (14). Profession was also significantly associated with leadership skill in the Barcelona study, where nurses showed a higher transactional leadership style compared to physicians (14). A study from Iran found that the lack of management training was one of the main challenges facing lower-level managers in the study area (15). Finally, the study from Iran found that the lack of clear duties and responsibilities were among the health system factors that affected the management practices of district health workers (15).

Purpose and significance of study

Primary health care managers operate in an increasingly complex environment that requires updated skills and competencies. There is a paucity of information on leadership, management and governance practices among primary health care managers in low-income countries, particularly in sub-Saharan Africa. Identifying such practices could help strengthen health systems and improve health outcomes.

The purpose of this study is to assess the strength of leadership, management and governance practices and associated factors among primary health care managers in eastern Ethiopia. The results of this study are intended to help health care leaders in eastern Ethiopia support the LMG practices of front-line managers and enhance the productivity of primary health care units. The results of this study may also be used at national and regional levels, by planners and programmers, to improve the competencies of primary health care managers across the country.

Figure 2. Conceptual framework on factors affecting LMG practices among PHCU managers[1]



[1] Developed by the investigators based on a review of the literature and through consultation with experts in the field.

Methods

Study design and setting

We conducted a mixed-method, cross-sectional study in four areas of eastern Ethiopia - East Hararghe zone, West Hararghe zone, Harari national regional state and Dire Dawa administrative council - from August through September 2018. Seven million people live in these four regions. The combined primary health care units consist of 1078 health posts, 230 health centers, 4 primary hospitals and 50 districts offices, employing 7676 health workers across all levels.

Study population

The study population for the quantitative study was health managers and health extension worker supervisors employed in district health offices, primary hospitals and health centers in East Hararghe, West Hararge, Harari national regional state and Dire Dawa administrative council, who had been on the job for more than four months and were not on leave when the study was conducted. The study population for the qualitative study were senior health care providers with no leadership experience.

Sample size

The sample consisted of 555 health managers and health extension worker supervisors who satisfied the inclusion criteria for the quantitative study and 20 senior health care providers who met the inclusion criteria for the qualitative study.

Sample size to determine strength of LMG practices

To determine the strength of leadership, management and governance practices among primary health care unit managers, we calculated the sample study for a single population proportion based on the following assumptions:

- p = 50%: the proportion of health care managers assumed to engage in good LMG practices
- 1 – p = 50%: the proportion of health care managers assumed to engage in poor LMG practices
- margin of error = 0.05
- 95% confidence interval = 1.96
- design effect = 2
- non-response = 5%

Sample size to determine factors associated with LMG practices

To determine the factors associated with leadership, management and governance practices identified in the literature, we calculated the sample size assuming a 95% confidence interval, a power of 80%, an unexposed to exposed ratio of 1 to 1, a design effect of 2 and a non-response rate of 5%.

Sampling technique

The study participants were selected using a multi-stage stratified sampling technique. Three types of health managers – one office head, one associate head and one health extension

supervisor – were chosen from every primary hospital, district office and health center in each of the four study areas. The total number of district offices and health care settings to be included in the study from each area was then selected using probability proportion to population size. Following simple random sampling, 9, 99 and 447 study participants were selected from primary hospitals, district health offices and health centers, respectively. For the qualitative study, senior health care providers who had no leadership experience were purposively chosen from each selected district.

Data collection

A structured, pre-tested self-administered questionnaire was used to collect quantitative data. It reflected key concepts found in the literature review and consisted of eight parts focused on socio-demographic data, leadership skills, management skills and governance skills. The questionnaire was developed in English and translated into Amharic and Afaan Oromo. Qualified public health professionals and graduates of Haramaya University's language department translated the questionnaire into the local languages and back to English to check for consistency. The questionnaire was pre-tested at Shenkor Woreda Health Office, Gende Kore Health Center and Haramaya Primary Hospital. Modifications were made to the questionnaire following the pre-test. An in-depth interview guide was prepared for the qualitative study.

Twenty data collectors (Bachelor of Science health officers) and four supervisors (Master of Public Health/Master of Science graduates) were recruited and received a two-day training. A training manual was developed and provided to the trainees as reference material to ensure quality data collection. We met with data collectors each day to review completed questionnaires and discuss ways to improve the quality of data collection. Data were also reviewed each day by the supervisors and investigators to check for the accuracy, consistency and completeness of the questionnaires. Double data entry was performed as a quality control measure.

Data collection supervisors conducted in-depth interviews using the interview guide. Privacy was maintained during interviews. Responses were tape recorded and transcribed by hand.

Study variables

Outcome variables

Leadership, management and governance practices

Predictor variables

- Socio-demographic characteristics: age, sex, marital status, years of work experience, work experience
- Training: duration of pre-service training, type of training institution, type of training, history of LMG training
- Health system factors: feedback system, organizational communication, relationship with top managers, availability of financial resources, availability of job description, mechanism of assignment to position, mode of career advancement, opportunities to share with peers

Operational definitions

Primary health care unit referred to the district health system comprised of a primary hospital, a health center and five health posts that are connected by a referral system (8).

Primary health care unit managers included district health office managers, assistant district health office managers, managers of health centers, unit leaders (case team leader, nursing head, etc.), health extension worker supervisors, and the chief executive officers, chief clinical officers and general managers of primary/district hospitals (8).

Leadership practice was measured based on responses to 18 statements, each scored between 0 and 4. Taking the mean value of 42 as a cut-off point, a score of 0-42 indicated poor leadership practice and a score of 43-72 indicated good leadership practice.

Management practice was measured based on responses to 79 statements, each scored between 0 and 4. Taking the mean value of 186 as a cut-off point, a score of 0-186 indicated poor management practice and a score of 187-302 indicated good management practice.

Governance practice was measured based on responses to 29 statements, each scored between 0 and 4. Taking the mean value of 57 as a cut-off point, a score of 0-57 indicated poor governance practice and a score of 58-100 indicated good governance practice.

Data processing and analysis

Data were edited manually, entered into EpiData (version 3.1) and exported into Stata (version 14.2) for analysis. Missing values were treated using imputation at random for all relevant variables before analysis. Frequencies and percentages were used to summarize quantitative data. Bivariate analysis was conducted to assess the associations between predictor and outcome variables. All variables with p-values less than 0.02 were entered into a multivariate logistic regression model to control for confounders. Multicollinearity between predictor variables was tested based on standard error values, and variables with a standard error greater than two were dropped from the analysis. Odds ratios with 95% confidence intervals (CI) were used to measure the strength of associations. Statistical significance was declared at p-value ≤ 0.05 in multivariate analysis. Qualitative data were transcribed verbatim and analyzed thematically.

Ethical considerations

Ethical clearance was obtained from the Research Ethics Committee of the College of Health and Medical Sciences at Haramaya University. The College sent formal letters requesting the cooperation of select district health administrations. Before the start of data collection, respondents were asked to read and sign an informed consent form, including the right to decline answering any question that caused discomfort. Measures were taken to maintain the anonymity and confidentiality of study participants.

Dissemination strategies

We intend to disseminate the results of this research to the scientific community and interested parties through different channels, including workshops, symposia, meetings of professional associations and publications in reputable local and/or international journals.

Results: Quantitative Data

Characteristics of respondents

A total of 469 study participants completed the questionnaire - a response rate of 85.3%. Table 1 presents the characteristics of the respondents. The majority were relatively young (mean age = 29.1, ±5.2) married men. Eighty-three percent worked at health centers. They were early career professionals: nearly half had worked for five years or less and, for 30.9%, this was their first professional job. Study participants received an average monthly salary of 5182 ETB (±1703 ETB).

Table 1. Socio-demographic characteristics of respondents

Variable (n=469)	Category	Frequency (%)
Sex	Male	341 (72.7)
	Female	128 (27.3)
Age	Less than 25 years	100 (21.3)
	25-35 years	320 (68.2)
	36-45 years	43 (9.2)
	46 years or above	6 (1.3)
Marital status	Single	162 (34.5)
	Married	294 (62.7)
	Divorced	9 (1.9)
	Widowed	4 (.85)
Place of work	Primary hospital	13 (2.8)
	Health center	387 (82.5)
	District health office	69 (14.7)
Years of professional work experience	Less than 1 year	30 (6.4)
	1-5 years	201 (42.9)
	6-10 years	185 (39.4)
	More than 10 years	53 (11.3)
Position in another organization	Yes	324 (69.1)
	No	145 (30.9)
Work experience	Current facility only	145 (30.9)
	One additional facility	114 (24.3)
	Two additional facilities	136 (29)
	Three or more additional facilities	74 (15.8)

Training

The majority of the respondents had a nursing background and graduated from a government institution (Table 2). Sixty-three percent reported that they had not received training on leadership, management and governance practices. Among those who had received training, a nearly equal number reported receiving on- and off-the-job training.

Table 2. Participants' training experience

Variable (n=469)	Category	Frequency (%)
Type of training/Profession	Medical doctor	12 (2.6)
	Health officer	117 (24.9)
	BSc midwife	45 (9.6)
	Diploma midwife	42 (9)
	BSc nurse	109 (23.2)
	Diploma nurse	99 (21.1)
	Pharmacy	11 (2.3)
	Medical laboratory	12 (2.6)
	Environmental health	10 (2.1)
	Other	12 (2.6)
Type of training institution	Government	303 (64.6)
	Private	166 (35.4)
LMG training	Yes	172 (36.7)
	No	297 (63.3)
Type of LMG training	On-the-job training	68 (39.5)
	Off-the-job training	66 (38.4)
	Both	38 (22.1)

Health system factors

The results showed that interactions between front-line and top-level managers were limited and unsupportive (Table 3). A substantial number (86.5%) of PHCU managers reported that they met with their supervisors every one to three months – an average of every 2.4 (±1.4) months. As a result, the majority reported that they did not receive timely feedback. More than half also reported that there was a lack of transparency in communication with top-level managers and that they did not consider their relationship with upper management to be "smooth." Thirty-eight percent highlighted external interference in organizational decision-making.

Slightly over a quarter of the respondents did not have job descriptions. Although 74.4% of the managers said that there was a formal path to career advancement in their facilities, more than half (52%) said that PHCU managers were assigned to their positions haphazardly and based on "the will of top managers." Fifty-seven percent had experience sharing with peers from other facilities and an overwhelming majority thought that their facilities' budgets were inadequate (Table 3).

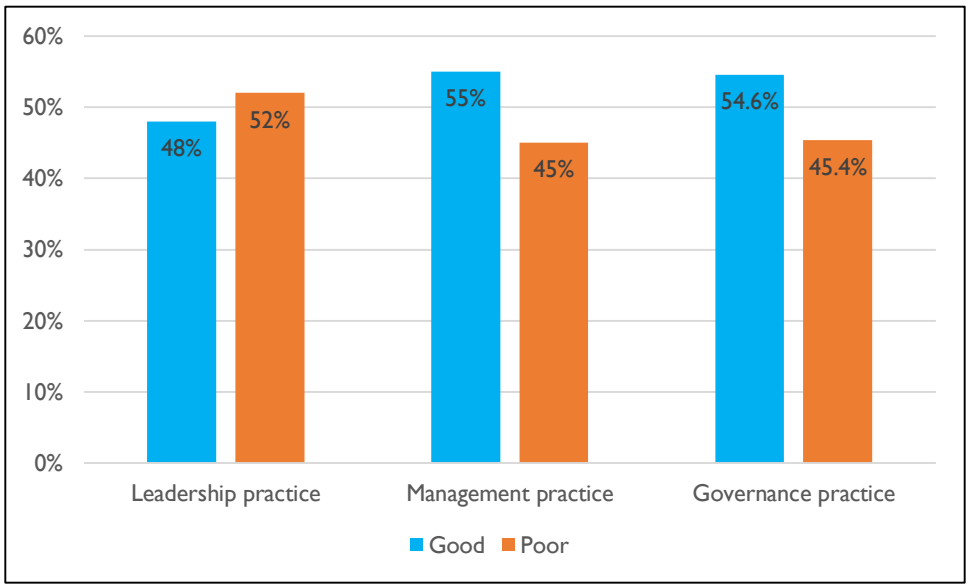
Table 3. Participants' perception and experience of health system

Variable	Category	Frequency (%)
Timely feedback from top-level managers	Yes	170 (38.5)
	No	271 (61.5)
Transparent organizational communication with top-level managers	Yes	199 (44.4)
	No	249 (55.6)
Smooth relationship between PHCU and top-level managers	Yes	198 (44.4)
	No	248 (55.6)
Have job description	Yes	344 (73.4)
	No	125 (26.6)
Mode of career advancement	Formal	326 (74.4)
	Informal	112 (25.6)
Experience sharing with peers	Yes	269 (57.4)
	No	200 (42.6)
Adequate budget for PHCU	Yes	60 (13.3)
	No	391 (86.7)

Strength of leadership, management and governance practices

PHCU managers in eastern Ethiopia scored comparably well on management and governance practices - 55% (95% CI = 50.4-59.4) and 54.6% (95% CI = 49.9-59), respectively - and scored about seven points lower on leadership practice (48%, 95% CI = 43.5-52.5) (Figure 3).

Figure 3. LMG practices among PHCU managers



Factors associated with leadership practice

In bivariate logistic regression analysis, marital status, having worked at another organization, profession, LMG training, having a job description and experience sharing with peers from other facilities were significantly associated with leadership practice. However, in multivariate logistic regression analysis, only profession and experience sharing with peers were independently associated with leadership practice. The odds of good leadership practice were nearly 1.7 times (95% CI = 1.04-2.81), 2.4 times (95% CI = 1.27-4.37) and 2.7 times (95% CI = 1.32-5.32) higher among nurses, midwives and other professionals, respectively, compared to health officers. The odds of good leadership practice were also 1.6 times (95% CI = 1.06-2.43) higher among PHCU managers who had experience sharing with peers who worked at other facilities (Table 4).

Table 4. Determinants of leadership practice among PHCU managers in eastern Ethiopia

Variable	Category	Leadership practice		COR (95% CI)	AOR (95% CI)
		Good n (%)	Poor n (%)		
Age	Less than 25 years	40 (40)	60 (60)	Ref.	Ref.
	25-35 years	160 (50)	160 (50)	1.41 (0.79-2.49)	1.34 (0.73-2.48)
	36 or above	25 (51.0)	24 (48.9)	1.73 (0.75-3.98)	1.92 (0.77-4.77)
Marital status	Single	68 (41.9)	94 (58.0)	Ref.	Ref.
	Married	155 (52.7)	139 (47.3)	1.58 (1.07-2.33)*	1.32 (0.84-2.06)
	Other	2 (15.4)	11 (84.6)	0.25 (0.05-1.14)	0.23(0.05-1.19)
Position in another organization	No	81 (55.9)	64 (44.1)	Ref.	Ref.
	Yes	144 (44.4)	180 (55.6)	1.58 (1.07-2.35)*	1.46 (0.94-2.26)
Training/Profession	Health officer	43 (36.8)	74 (63.2)	Ref.	Ref.
	Midwife	46 (52.9)	41 (47.1)	1.93 (1.09-3.39)*	2.35 (1.27-4.37)**
	Nurse	104 (50)	104 (50)	1.72 (1.08-2.74)*	1.71 (1.04-2.81)**
	Other	25 (43.9)	32 (56.1)	2.20 (1.16-4.19)*	2.65 (1.32-5.32)**
LMG training	No	132 (44.4)	165 (55.6)	Ref.	Ref.
	Yes	93 (54.1)	79 (45.9)	1.47 (1.00-2.14)*	1.39 (0.91-2.12)
Job description	No	48 (38.4)	77 (61.6)	Ref.	Ref.
	Yes	177 (51.5)	167 (48.6)	1.75 (1.15-2.67)*	1.48 (0.94-2.32)
Experience sharing with peers	No	75 (38.3)	121 (61.7)	Ref.	Ref.
	Yes	150 (54.9)	123 (45.1)	1.89 (1.28- 2.76)*	1.61 (1.06-2.43)**

*p-value < 0.02, **p-value ≤ 0.05

Factors associated with management practice

In bivariate logistic regression analysis, having worked for another organization, having a job description and experience sharing with peers were significantly associated with good management practice. However, in multivariate logistic regression analysis, only having worked at another organization and sharing with peers were associated with good management practice. The odds of good management practice were nearly 2 times higher (95% CI = 1.39-3.47) among PHCU managers who had worked at another facility and 1.6 times higher (95% CI = 1.09-2.43) among those who had experience sharing with peers from other facilities (Table 5).

Table 5. Determinants of management practice among PHCU managers in eastern Ethiopia

Variable	Category	Management practice		COR (95% CI)	AOR (95% CI)
		Good n (%)	Poor n (%)		
Sex	Female	79 (61.7)	49 (39.3)	Ref.	Ref.
	Male	179 (52.5)	162 (47.5)	0.68 (0.45-1.04)	0.66 (0.42-1.03)
Facility type	District health office	44 (63.8)	25 (36.2)	Ref.	Ref.
	Primary hospital	8 (61.5)	5 (38.5)	0.91 (0.27-3.08)	0.64 (0.17-2.38)
	Health center	206 (50)	206 (50)	0.65 (0.38-1.09)	0.70 (0.39-1.25)
Years of professional experience	Less than 1 year	14 (46.7)	16 (53.3)	Ref.	Ref.
	1-5 years	110 (54.7)	91 (45.3)	1.45 (0.65-3.24)	1.52 (0.65-3.53)
	6-10 years	99 (53.5)	86 (46.5)	1.39 (0.63-3.08)	1.10 (0.47-2.58)
	More than 10 years	35 (66)	18 (34)	2.35 (0.92-5.95)	1.80 (0.66-4.93)
Position in another organization	No	96 (66.2)	49 (33.8)	Ref.	Ref.
	Yes	162 (50)	162 (50)	1.95 (1.30-2.94)*	2.20 (1.39-3.47)**
Work experience	Current facility alone	85 (58.6)	60 (41.4)	Ref.	Ref.
	One additional facility	60 (52.6)	54 (47.4)	0.78 (0.48-1.28)	0.73 (0.43-1.22)
	Two additional facilities	67 (49.3)	69 (50.7)	0.68 (0.43-1.09)	0.61 (0.37-1.01)
	Three or more additional facilities	49 (63.6)	28 (36.4)	1.16 (0.65-2.06)	0.93 (0.33-2.93)
Job description	No	60 (48)	65 (52)	Ref.	Ref.
	Yes	198 (57.6)	146 (42.4)	1.56 (1.02-2.39)*	1.42 (0.91-2.22)
Experience sharing with peers	No	92 (46.9)	104 (53.1)	Ref.	Ref.
	Yes	166 (60.8)	107 (39.2)	1.73 (1.19-2.52)*	1.63 (1.09-2.43)**

*p-value < 0.02, **p-value ≤ 0.05

Factors associated with governance practice

In bivariate and multiple logistic regression analyses, only having a job description was significantly associated with good governance practice. The odds of good governance practice were 2 times higher (95% CI = 1.39-3.28) among PHCU managers who had a job description compared to those who did not (Table 6).

Table 6. Determinants of governance practice among PHCU managers in eastern Ethiopia

Variable	Category	Governance practice		COR (95% CI)	AOR (95% CI)
		Good n (%)	Poor n (%)		
Sex	Female	78 (60.9)	50 (39.1)	Ref.	Ref.
	Male	178 (52.2)	163 (47.8)	0.70 (0.46-1.06)	0.81 (0.52-1.52)
Facility type	Primary hospital	4 (30.8)	9 (69.2)	Ref.	Ref.
	Health center	215 (55.6)	172 (44.4)	0.38 (0.11-1.37)	0.41 (0.11-1.54)
	District health office	37 (53.6)	32 (46.4)	1.08 (0.65-1.81)	1.41 (0.79-2.49)
Years of professional experience	Less than 1 year	16 (53.3)	14 (46.7)	Ref.	Ref.
	1-5 years	104 (51.7)	97 (48.3)	0.95 (0.41-2.17)	1.04 (0.44-2.44)
	6-10 years	101 (54.6)	84 (45.4)	1.09 (0.49-2.52)	1.19 (0.49-2.85)
	More than 10 years	35 (66)	18 (34)	1.88 (0.72-4.89)	2.21 (0.79-6.14)
Work experience	Current facility alone	87 (60)	58 (40)	Ref.	Ref.
	One additional facility	58 (50.9)	56 (49.1)	0.69 (0.42-1.13)	0.68 (0.41-1.14)
	Two additional facilities	66 (48.5)	70 (51.5)	0.63(0.39-1.01)	0.58(0.35-0.95)
	Three or more additional facilities	45 (60.8)	29 (39.2)	1.03(0.58-1.83)	1.05(0.65-1.96)
Job description	No	52 (41.6)	73 (58.4)	Ref.	Ref.
	Yes	204 (59.3)	140 (40.7)	2.13 (1.40-3.24)*	2.13(1.39-3.28)**
Experience sharing with peers	No	97 (49.5)	99 (50.5)	Ref.	Ref.
	Yes	159 (58.2)	114 (41.8)	1.43 (0.99-2.08)	1.27(0.86-1.88)

*p-value <0.02, **p-value ≤ 0.05

Results: Qualitative Data

Characteristics of key informants

Twenty health care providers were purposively selected to be interviewed for the qualitative portion of the study. The interviewees were slightly older (mean age = 32.6, ±7.7) than the PHCU managers, but similar in terms of sex (65% = male), profession (65% = nurses and midwives) and LMG training experience (Table 7). An equal number of key informants had managerial experience.

Table 7. Characteristics of key informants

Variable	Category	Frequency (%)
Sex	Male	13 (65)
	Female	7 (35)
Profession	Health officer	3 (15)
	Midwife	5 (25)
	Nurse	8 (40)
	Pharmacist	3 (15)
	Laboratory technician	1 (5)
LMG training	Yes	8 (40)
	No	12 (60)
Managerial experience	Yes	10 (50)
	No	10 (50)

Leadership practices of PHCU managers: health care providers' perspectives

Key informants were asked whether there was a time when their supervisors helped them meet a goal. The majority of them said that their supervisors were supportive, helping them set mutually agreed-upon goals and action plans and providing them regular supervision and feedback. A 27-year-old midwife said:

> *"Our manager supports us … I would say, he is not only our manager or leader but also our adviser. He supports us when we prepare a conference for pregnant women in town twice a month. He is directly involved in teaching women."*

The health care providers were also asked whether their managers or leaders had a vision for their organizations and involved relevant staff in developing that vision. Interviewees said that, in the majority of cases, staff participated in setting their organizations' visions, often after their supervisors had consulted with management teams or board committees. However, other respondents saw their roles as limited to annual program and budget planning, rather than visioning. A few respondents said that planning or visioning actually happened at a higher level of management, after which it was sent to PHCU managers for execution.

The interviewees were asked whether their supervisors sought opportunities for innovation. A few responded affirmatively, giving the implementation of health sector reform in their health centers as an example. But these reforms had been initiated by top-level managers and none of the providers could offer examples of innovation that had been introduced by their managers. The vast majority of respondents thought that PHCU managers were stuck doing the same thing: "*No new approaches to improving the organization's performance, simply repeating the existing approach … simply walking on the existing roads*". They attributed PHCU managers' inertia to the lack of adequate funding for their facilities.

Management practices of PHCU managers: health care providers' perspectives
In evaluating the management skills of their managers, most of the senior health care providers rated their team-building and relationship-building skills highly. Managers were evaluated poorly on decision-making, time management, problem-solving, delegation and financial management. Some managers were said to be overly emotional in decision-making. Most of the interviewees proposed that decisions be made in consultation with subordinates, that concerned parties be involved in problem-solving and that responsibilities be assigned according to the terms of job descriptions.

Governance practices of PHCU managers: health care providers' perspectives
Regarding governance practices, respondents were asked whether there were means to hold officials accountable for misconduct. Most of the interviewees confirmed that such mechanisms existed, including committees or boards comprised of woreda and health center staff who met to assess and punish breaches of conduct by public employees. Repercussions for misconduct ranged from oral warnings and reprimands, to salary deductions and firings. A few respondents said that there were no accountability measures.

Respondents were also asked whether there were actions that community members - citizens, community groups, independent media and civil society organizations - could take to hold public officials and public servants accountable. The majority said that this was not common practice.

Health care providers were also asked whether the decision-making processes in their organizations were inclusive, engaging all relevant stakeholders regardless of gender, age, ethnicity, socio-economic status, and health and disability status. The majority of interviewees thought that decision-making processes were inclusive, although they had observed some degree of discrimination in a few organizations. They added that female health workers still needed to be more empowered in decision-making and promoted to management positions.

Asked their views on the proper utilization of resources, the vast majority of the respondents affirmed that resources were utilized responsibly, with the exception of the unauthorized use of drugs that went against organizational policies. A 38-year-old provider said: *"The money that is collected on a daily basis is deposited in a timely manner into the health center's bank account to minimize resource wastage."*

The respondents were also asked about corruption and ways to combat it. Most of the respondents said that corruption was not a major problem in their organizations. However, they believed that corruption was a possibility. Misappropriation of drugs, improper use of

work hours, impoliteness, and lack of freedom were cited as types of corruption. A 27-year-old pharmacist said: *"It is impossible to say there is no corruption. Corruption has become Ethiopia's major problem."* Similarly, a 35-year-old pharmacist explained: "*Corruption is a major problem, equivalent to cancer, in this organization."* Most of the respondents said that managers should serve the community wisely, using the scarce available resources for their intended purpose. They also said that all staff should work together to combat corruption of any kind.

Discussion

Our study assessed the strength of leadership, management and governance practices and associated factors among primary health care managers in eastern Ethiopia. Study participants were early career professionals: nearly half had worked for five years or less and 63% had a nursing background. Sixty-five percent graduated from a government institution and 63.3% had not received LMG training.

We found that study participants scored comparably well on good management and governance practices, but a slightly lower percentage demonstrated good leadership practice. In multivariate logistic regression analysis, profession and experience sharing with peers from other health facilities were significantly associated with good leadership practice; experience working at another facility and sharing with peers were significantly associated with good management practice; and having a job description was significantly associated with good governance practice.

The leadership practice of PHCU managers in this study was moderate. Key informants noted that their managers were more likely to engage in routine activities than take up innovative ideas or projects. By way of explanation, they also pointed out that managers lacked the resources and freedom to initiate change. Our study found a strong association between sharing with similarly-placed peers in other facilities and good leadership practice. The process of sharing may have exposed managers to new practices or ideas that impacted how they led despite material limitations.

Having had a position in another facility was significantly associated with good management practice. This may be explained by the fact that more work experience, especially in different settings, created opportunities for learning and professional development. The key informants, however, pointed out that decision-making, time management and financial management were areas of weakness for their managers. This finding was comparable to the results of a South African study where both nurse supervisors and their subordinates rated the managers poorly on financial management (16).

Governance in the health sector has gained more attention in the past decade. It is considered as an essential factor in creating stronger health systems that result in improved health outcomes (17). In our study, almost half (45.4%) of the PHCU managers demonstrated poor governance practice. The key informant interviews suggested that good governance may be stymied by the lack of inclusive decision-making processes, particularly the exclusion of women, and possible misappropriation of resources.

Limitations

The use of a self-administered questionnaire to assess the strength of LMG practices among PHCU managers may have introduced social desirability bias. Second, the paucity of literature on LMG practices in Ethiopia made comparison of results difficult, particularly related to governance practice.

Conclusion and recommendations

The strength of leadership, management and governance practices among study participants was moderate. We offer the following recommendations to improve LMG practices in eastern Ethiopia, and the country by extension.

For stakeholders (i.e., higher-level human resource managers):

- Arrange in-service trainings to scale-up LMG skills, encourage the development of performance-oriented job descriptions and create more opportunities for PCHU managers to share experiences with peers.
- Organize LMG trainings for senior health care providers so they can support their immediate supervisors in decision-making and problem-solving.
- Consider years of experience, previous work experience and LMG training when nominating PHCU managers.
- Create opportunities for PHCU managers to have exposure to other work environments or organizations.

For researchers:

- Further research needs be conducted, using more robust methodology and covering a wider geographical area, to test the results of our study.

References

1. United Nations. *World Population Prospects 2019*. Available from: https://population.un.org/wpp/DataQuery/.
2. World Bank. *World Development Indicators*. Available from: https://databank.worldbank.org/source/world-development-indicators.
3. Misganaw A, Haregu TN, Deribe K, et al. National mortality burden due to communicable, non-communicable, and other diseases in Ethiopia, 1990–2015: Findings from the Global Burden of Disease Study 2015. *Population Health Metrics*. 2017;15(29): 1-17. Available from: https://doi.org/10.1186/s12963-017-0145-1.
4. *Health Policy of the Transitional Government of Ethiopia*. 1993. Available from: http://phe-ethiopia.org/resadmin/uploads/attachment-157-Health_Policy_Sept_1993.pdf [Accessed August 1, 2017].
5. Wamai RG. Reviewing Ethiopia's Health System Development. *Japan Medical Association Journal*. 2009;52(4): 279–286. Available from: https://www.med.or.jp/english/journal/pdf/2009_04/279_286.pdf.
6. Federal Democratic Republic of Ethiopia Ministry of Health. *Health Sector Development Program IV 2010/11 – 2014/15*. Ministry of Health. 2010. Available from: http://phe-ethiopia.org/admin/uploads/attachment-721.
7. Workie NW, Ramana GNV. *The Health Extension Program in Ethiopia*. The World Bank. UNICO Studies Series 10. 2013. Available from: http://documents1.worldbank.org/curated/en/356621468032070256/pdf/749630NWP0ETHI00Box374316B00PUBLIC0.pdf.
8. Federal Democratic Republic of Ethiopia Ministry of Health. *Health Sector Transformation Plan of Ethiopia*. Ministry of Health. 2015. Available from: https://www.globalfinancingfacility.org/sites/gff_new/files/Ethiopia-health-system-transformation-plan.pdf [Accessed August 15, 2017].
9. Seims, LK, Alegre JC, Murei L, Bragar J, Thatte N, Kibunga P. Strengthening management and leadership practices to increase health-service delivery in Kenya: an evidence-based approach. *Human Resources for Health*. 2012;10(25): 1-7. Available from: https://doi.org/10.1186/1478-4491-10-25.
10. Federal Democratic Republic of Ethiopia Ministry of Finance and Economic Development. *Growth and Transformation Plan (2010/112014/15) Annual Progress Report for F.Y. 2010/11*. Ministry of Finance and Economic Development. 2012. Available from: http://www.mofed.gov.et/English/Resources/Documents/GTP%20Annual%20progress%20Report%20(20 10-11).pdf [Accessed October 29, 2017].
11. USAID. *Pre-service Leadership, Management and Governance Syllabus*. USAID. 2016. Available from: https://www.msh.org/sites/msh.org/files/pre-service_leadership_management_and_governance_syllabus.pdf.
12. Uneke CJ, Ezeoha AE, Ndukwe CD, Oyibo PG, Onwe FD. Enhancing Leadership and Governance Competencies to Strengthen Health Systems in Nigeria: Assessment of Organizational Human Resources Development. *Health Care Policy*. 2012;7(3): 73-84. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3298023/pdf/policy-07-073.pdf.
13. Jeon YH, Glasgow NJ, Merlyn T, Sansoni E. Policy options to improve leadership of middle managers in the Australian residential aged care setting: a narrative synthesis. *BMC Health*

Services Research. 2010;10(190): 1-7. Available from: https://www.biomedcentral.com/1472-6963-10-190.
14. i Solà1 GJ, i Badia JG, Hito PD, Osaba MAC, Del Val García JL. Self-perception of leadership styles and behaviour in primary health care. *BMC Health Services Research*. 2016;16(572): 1-9. Available from: https://doi.org/10.1186/s12913-016-1819-2.
15. Tabrizi JS, Gholipour K, Farahbakhsh M, Hasanzadeh A. Managerial barriers and challenges in Iran public health system: East Azerbaijan health managers' perspective. *Journal of Pakistan Medical Association*. 2017;67(3): 409-415. Available from: https://jpma.org.pk/PdfDownload/8119.
16. Munyewende PO, Levin J, Rispel LC. An evaluation of the competencies of primary health care clinic nursing managers in two South African provinces. *Global Health Action*. 2016;9(1): 1-11. Available from: https://doi.org/10.3402/gha.v9.32486.
17. Björkman M, Svensson J. *Power to the People: Evidence from a Randomized Field Experiment on Community-Based Monitoring in Uganda*. World Bank. Policy Research Working Paper; No. 4268. 2009. Available from: https://openknowledge.worldbank.org/handle/10986/7447.