Levels of the health system workforce's competence and predictors to lead, manage, and govern in northwest Ethiopia

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Abstract

Aim: The purpose of this study was to determine the levels of competence and predictors to lead, manage, and govern among the health system workforce.

Methods: A cross-sectional study was carried out in northwest Ethiopia. Eight hundred thirteen workforce were participated in the study. Competence to lead, manage, and govern was computed from 20 items. It was also leveled into four categories. Ordinal logistic regression analysis was conducted to identify predictors of this competence.

Results: From 813 participants, 396 (48.7%) and 582 (71.6%) were females and service owners respectively. The estimates for low, moderate, high and very high levels of competence to lead, manage and govern were 41.3%; 42.7%; 13.5% and 2.5% respectively. Sex ($p = .031$) and responsibility ($p = .019$) were identified as main predictors.

Conclusions: Competence to lead, manage and govern among the health system workforce in northwest Ethiopia is inadequate. Policymakers, program planners and researchers need to take action giving due attention to females and service owners. Feature research could be conducted considering hierarchical variables.

Introduction And Background

Observing over-led and under-managed, over-managed and under-governed and even out of these health systems remains a common phenomenon(1). This puzzle has been palpated in dealing with the successes, glitches, and trends of health initiatives to ensure universal health coverage.

In driving the millennium development goals, diverse experiences were recorded from countries around the globe(2). Reports show that many countries have made incredible achievements; some others made optimal improvements and few with little progress. These trends doubted the reachability of the goals at a considerable number of countries. This doubt unduly pressured the globe to sit for a strategy(3-5). Consequently, leadership and governance are identified as the backbone of the health system(6-8).

Contemporary, low and middle-income countries have launched integrated Leadership, Management, and Governance (LMG) capacity-building program(9-11). The program aims to build the competence of the workforce in influencing people, improving performance and ensuring societal health and well-being(12, 13).

Although integrated LMG has caught the attention of the workforce in low and middle-income countries' health systems, yet, there has been a dearth of attempts to measure the workforce's competence to lead, manage, and govern(11, 12, 14).

As the best of our knowledge, no study levels the health system workforce's competence and predictors to lead, manage and govern. On the contrary, limited studies indicate that workforce who are competent to

lead or/and manage or/and govern improve the health service outcomes(1, 10, 15-18).

Thus, the results of this study would support policymakers, program planners, implementers, and researchers to scheme scientifically reliable and empirically scalable integrated LMG capacity building program.

Materials And Methods

Study design and participants

A cross-sectional study was carried out in December 2018. Eight-hundred thirteen health facility workforce were selected, randomly from 32 health facilities located in northwest Ethiopia. The workforce that took integrated LMG in-service capacity building training so far were excluded.

Data collection

Data were collected using a structured multi-item questionnaire. It comprised the participants' basic characteristics (**Table 1**) and items that potentially measured competence to lead, manage, and govern (dependent variable). The measuring items were adapted among activities clustered in the integrated leading, managing, and governing framework(12).

The test stimuli (psychometric properties) of the questionnaire was refined through rigorous debriefing sessions, focused on instrument clarity and validity. In this process, five specialists of health service management, of whom three were from civil service and two from the academic spheres were involved.

All of the measuring items were rated with a five-point Likert scale, ranging from 1 = very low to 5 = very high. The data related to measuring items (**Table 2**) were checked for inter-correlation of 0.3 and greater, intra-item consistency of 0.7 and greater(19), communality of 0.5 and greater(20, 21), and complex structure that is whether any factor had resided on more than one item with factor loadings of .4 and greater(22) using factor analysis. In this process, six items were removed from the original dataset. Of which, two items: looking for best practices and match deeds to words were removed due to violating the rule of communality, and the other four items: set annual and strategic plan, allocate adequate resources, provide accountability and authority, and provide appropriate feedback were removed due to violating the rule of complex structure. It showed that the dataset was reduced to a 20-item dataset. Note that the six measuring items trimmed from the original dataset due to violating the rules of communality or complex structure were taken as predictors.

Data analysis

The dependent variable was computed from the 20-item dataset. The computed values were leveled into four ordinal categories: low, moderate, high and very high that represented scores of <60, 60-79.99, 80-

94.99 and ≥ 95 respectively. These scales were taken from the Ethiopian ministry of health workforce performance appraisal guideline (unpublished work).

The relationship between the dependent variable and its predictors was modeled using ordinal logistic regression analysis with logit link function. Model fitting information tested by (-2Log Likelihood) was significant at $p < 0.001$. The consistency of the observed data tested with Pearson chi-square goodness-of-fit was remained satisfactory with $p = 1$. The explained variance of the dependent variable from the predictors was tested by pseudo-r-squared value (Nagelkerke's $R^2 = 0.765$), which indicated a strong association. The test of parallel lines or testing proportional odds assumption that is testing whether the location parameters (slope coefficients) of predictors were the same across outcome variable categories was tested by (-2Log Likelihood) and became non-significant with $p = 0.487$. This showed that the slope coefficients were the same across response categories, which told that there had no evidence to reject the parallelism hypothesis. Here, to interpret the impact of individual predictors in a better way, odds ratios with 95% CI were calculated from the odds.

Ethical approval

Ethical clearance with a protocol record 090/18-04 was secured from the institutional review board of Bahir Dar University. Each participant provided written consent. The process was strictly anonymous and questionnaires completed were stored in a locked cabinet.

Results

Basic characteristics of participants

Table 1 presents the participants' basic characteristics. From 813 participants, 396(48.7%) were females and 582 (71.6%) were service owners.

Table 1: Basic characteristics of participants (n = 813)

Variable	Category	Frequency	Percent
Sex	Male	417	51.3
	Female	396	48.7
Age	<= 24 years	124	15.3
	25-29 years	334	41.1
	30-34 years	256	31.5
	>34 years	99	12.2
	Diploma and less	363	44.6
Educational level	First degree	411	50.6
	Second degree and above	39	4.8
	Head of office	61	7.5
Responsibility	Process owner	35	4.3
	Unit coordinator	135	16.6
	Service owners	582	71.6
	<2 years	209	25.7
Year of service	2-4 years	222	27.3
	5-8 years	283	34.8
	>8 years	99	12.2

Central tendency of the measuring items

Table 2 indicates the means and standard deviations of measuring items.

Table 2: Means and standard deviations of measuring items (n = 813)

	Item	Mean	Standard deviation
1	Identify client and stakeholder needs and priorities	3.35	1.103
2	Recognize trends, opportunities, and risks	3.36	1.076
3	Look for best practices	3.11	1.168
4	Articulate the organization's mission, strategy, and vision	3.33	1.103
5	Determine key priorities for action	3.38	1.097
6	Enlist the stakeholders to commit resources	2.86	1.197
7	Unite mobilized resources to reach organizational vision	2.97	1.214
8	Match deeds to words	3.25	1.161
9	Show trust and confidence and acknowledge contributions	3.04	1.197
10	Model of creativity, innovation, and learning	3.00	1.160
11	Set annual and strategic plan	3.32	1.165
12	Allocate adequate resources	3.04	1.172
13	Provide accountability and authority	3.06	1.111
14	Considers the organizational lines of authority for delegation	3.24	1.126
15	Integrate work structures and workflow	3.16	1.091
16	Coordinate practices with other workforce's programs	3.22	1.097
17	Monitor their achievements against the plan, and take lessons	3.20	1.136
18	Provide appropriate feedback	3.19	1.125
19	Uphold ethical and moral integrity to serve the public interest	3.24	1.230
20	Establish a consultation mechanism to heard public voice	2.95	1.171
21	Ensure the participation of key stakeholders	2.86	1.160
22	Establish alliances for joint action at all levels	2.96	1.162
23	Oversee a shared direction to achieve organizational mission	3.10	1.240
24	Advocate organizational mission and vision to stakeholders	2.97	1.223
25	Use resources in a way that maximizes the public well-being	3.07	1.284
26	Describe the outcomes related to the allocated resources	2.76	1.231

Competence to lead, manage, and govern

Figure 1 indicates the levels of competence to lead, manage, and govern

Predictors of levels of competence to lead, manage and govern

Table 3 displays the estimated coefficients of the ordinal logistic regression model. The estimates labeled "location" were the coefficients (odds) of the predictors. To interpret the impact of individual predictors in a better way, proportional odds ratio with 95% CI was calculated by coefficient exponentiation, which were indicated in the exponential (EXP) column of the table.

Table 3: Estimates of predictors fitted to ordinal logistic regression analysis (n = 813)

Variable			95% CI					95% CI	
			Estimate	Sig.	Lower	Upper	EXP	Lower	Upper
Bound	Bound	bound			bound				
Location	Sex	Male	.407	.031	.037	.776	1.502	1.038	2.173
		Female	0	.	.	.	1	-	-
	Age in years	≤24	.359	.353	-.398	1.115	1.432	.672	3.050
		25-29	-.391	.236	-1.037	.256	.676	.355	1.292
		30-34	-.526	.110	-1.171	.119	.591	.310	1.126
		>34	0	.	.	.	1	-	-
	Educational level	Diploma & below	.731	.103	-.147	1.609	2.077	.863	4.998
		First degree	.625	.152	-.230	1.479	1.868	.795	4.389
		Masters & above	0	.	.	.	1	-	-
	Responsibility	Head of office	.868	.019	.144	1.592	2.382	1.155	4.914
		Process owner	-.022	.965	-1.030	.985	.978	.357	2.678
		Unit coordinator	.445	.083	-.058	.948	1.560	.944	2.581
		Service owner	0	.	.	.	1	-	-
	Service in years	<2	.577	.114	-.138	1.292	1.781	.871	3.640
		2-4	.548	.119	-.142	1.238	1.730	.868	3.449
		5-8	.392	.245	-.269	1.053	1.480	.764	2.866
		>8	0	.	.	.	1	-	-
	Look for best practices	Very low	-3.531	.000	-4.541	-2.521	.029	.011	.080
		Low	-2.579	.000	-3.356	-1.802	.076	.035	.165
		Moderate	-1.602	.000	-2.249	-.954	.201	.106	.385
		High	-1.278	.000	-1.890	-.667	.279	.151	.513
		Very high	0	.	.	.	1	-	-
	Match deeds to words	Very low	-2.030	.000	-2.963	-1.097	.131	.052	.334
		Low	-3.551	.000	-4.415	-2.688	.029	.012	.068
		Moderate	-1.657	.000	-2.270	-1.044	.191	.103	.352
		High	-.559	.049	-1.116	-.002	.572	.328	.998
		Very high	0	.	.	.	1	-	-
	Set anual and strategic plan	Very low	-1.208	.033	-2.319	-.097	.299	.098	.908
		Low	-1.387	.001	-2.179	-.595	.250	.113	.552
		Moderate	-1.266	.000	-1.891	-.641	.282	.151	.527
		High	-.391	.153	-.928	.145	.676	.395	1.156
		Very high	0	.	.	.	1	-	-
	Allocate adequate resources	Very low	-.469	.365	-1.485	.546	.626	.227	1.726
		Low	-1.227	.002	-2.010	-.444	.293	.134	.641
		Moderate	-.584	.104	-1.289	.120	.558	.276	1.127
		High	-.919	.006	-1.575	-.262	.399	.207	.770
		Very high	0	.	.	.	1	-	-
	Provide accountability and authority	Very low	-2.877	.000	-4.085	-1.669	.056	.017	.188
		Low	-2.415	.000	-3.279	-1.552	.089	.038	.212

Provide appropriate feedback	Moderate	-1.791	.000	-2.522	-1.059	.167	.080	.347
	High	-.921	.007	-1.591	-.252	.398	.204	.777
	Very high	0	.	.	.	1	-	-
	Very low	-4.490	.000	-5.947	-3.033	.011	.003	.048
	Low	-4.069	.000	-4.960	-3.177	.017	.007	.042
	Moderate	-2.383	.000	-3.078	-1.687	.092	.046	.185
	High	-1.381	.000	-2.001	-.761	.251	.135	.467
	Very high	0	.	.	.	1	-	-

Discussion

The current study results revealed that low and moderate levels of workforce competence to lead, manage, and govern accounted for 84%. However, limited previous studies reported that competent workforce to lead or/and manage or/and govern improve the health service outcomes(1, 10, 15-18), nevertheless, no study determined the levels of competence and predictors to lead, manage, and govern. This might be due to the significant duplication among the functions (practices) of the three paths(13, 16, 17, 23, 24). Hence, integrated the three paths can support to balance the people's needs, workloads, and organizational requirements simultaneously.

Alongside integrating the practices of the three paths in a scientifically reliable and empirically scalable way, identifying predictors regarding basic characteristics of the people is also helpful, particularly, when one wishes to design individuals' specific integrated LMG capacity-building program. In the current study, sex and responsibility are identified as the main statistically significant predictors.

Regarding sex, being a male workforce has a higher competency to lead, manage, and govern. This deviation might arise from that the limited number of females are authorized to lead, manage, and govern. In Ethiopia, this has a historical trend, in which breaking it and bringing the adequate number of females to the stage is a troublesome investment. However, almost 50% of the participants in this study are females, which might indicate that a considerable number of workforce in the health system are females. Thus, whatever reasons people have, without empowering half of the segment of the workforce, getting organizations to the intended stage would be rather impossible.

Concerning responsibility, being head of office has more than two-fold higher competency compared with the service owner. The potential reason might be that the service owners take limited training in the field that thereby makes them incompetent of it. This directs that huge investment in integrated LMG to service owners, almost 3/4th of the workforce, is awaiting.

Away from the implications, interpreting results with caution is important due to there might have been some information bias.

Conclusions

The competency to lead, manage, and govern among the health system workforce in northwest Ethiopia is inadequate. Sex and responsibility are identified as the main statistically significant predictors. The policymakers, program planners and researchers need to take action giving due attention to females and service owners. This can be also considered in similar settings. Feature research could be conducted considering hierarchical variables.

Declarations

Ethical considerations

Ethical clearance was secured from Bahir Dar University with a protocol record 090/18-04. Written consent was obtained from each participant; and data were protected.

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Conflict of interests

All the authors declare that they have no competing interests.

Additional information

Our related work on this topic can also be found as a preprint here <https://www.researchsquare.com/article/10a05661-f9f4-413e-8283-cee99f1c3247/latest>

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Figures

Figure 1

Levels of competence to lead, manage, and govern