Capacity and predictors to perform integrated leading, managing and governing practices for results among the health system workforce: cross-sectional survey

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Abstract

Introduction: Observing over-led and under-managed, over-managed and under-governed, and even out of these health organizations remains a common phenomenon in low and middle-income countries.

Objective: To determine the capacity and predictors to perform integrated leading, managing and governing practices for results among the health system workforce.

Methods: A cross-sectional study, from December to January 2018, was carried out in northwest Ethiopia. Eight hundred thirteen health facility employees were selected to rate her/his respective staff's capacity on performing integrated leading, managing and governing practices for results. The capacity with 95% CI was computed from 20 items loaded in a four-factor measurement model and leveled into four ordinal categories. Moreover, predictors of this capacity were identified by conducting ordinal logistic regression analysis.

Results: From 813 participants, 396 (48.7%) and 582 (71.6%) were females and service owners respectively. The magnitude estimates for the low, moderate, high and very high capacity levels with 95% CI were 41.3% (37.8, 44.6); 42.7% (39.5, 46.0); 13.5% (11.2, 15.9) and 2.5% (1.5, 3.7), respectively. Sex ($p = .031$) and responsibility ($p = .019$) were identified as the main predictors.

Conclusions: The capacity to perform integrated leading, managing and governing practices for results 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. Feature research could be conducted considering hierarchical variables, mixed design, and large sample size.

Introduction

Observing over-led and under-managed, over-managed and under-governed and even out of these health organizations remains a common phenomenon, particularly, in low and middle-income countries(1). This puzzle has been palpated in dealing with the successes, glitches, and trends of health initiatives to ensure Universal Health Coverage (UHC). Particularly, in driving the Millennium Development Goals (MDGs) that were in place from 2000 to 2015, 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 is identified as the backbone of the health system(6, 7). This is also underlined to be continuing as a locus in executing Sustainable Development Goals (SDGs)(8).

Currently, there is a promising signal in that the health system workforce at all levels look forward to applying a scientifically reliable and empirically scalable integrated leading, managing and governing practices for results(9–11). The signal is skyrocketing among the health system workforce in low and

middle-income countries who are assigned to ensure UHC in an increasingly socially, politically, economically and technologically turbulent ecosystem(2).

Although integrated leading, managing and governing practices for results has caught the attention of the health system workforce in the low and middle-income countries, yet, there has been a dearth of attempts to develop or test scientifically reliable and empirically scalable practices among the three paths(11–14). Four major reasons can be mentioned to such limited attempts. First, since long ago, concepts of leadership(15, 16), management(17, 18) and governance(19, 20) have been seen as separate agencies. Second, preaching these paths as they belong to an elite group of people who are naturally gifted, rather than discoursing as every ones job. Third, poor integration between the three worlds: civil service, academic sphere and research institute. Usually, the workforce residing in civil service focuses on how to do it; those nesting in the academic sphere emphasize what it is; and those living within research institute stress on how to model it. Lastly, the concept of integrated practices of the three paths for results is mainly donor-driven, not initiated from within the countries.

Some studies indicate that the health system workforce who are competent in performing leading, managing, and governing practices for results improve the health service outcomes(1, 10, 21–24). Some other studies report that there is a significant duplication among the practices of the three dimensions(22, 23). Yet, as the best of our knowledge, no study determined the capacity of the workforce to perform the integrated leading, managing and governing practices for results and identified its predictors. This needs rethinking and redesigning beyond the rhetoric(25–27).

Therefore, the current study aimed at determining the capacity and predictors to perform integrated leading, managing and governing practices for results among the health system workforce. This was carried out after developing a scientifically reliable and empirically scalable measurement model benchmarking the Management Science for Health (MSH) integrated health system leading, managing and governing practices for results framework(9, 14), illustrated in figure 1.

Figure 1. Integrated health system leading, managing and governing practices for results model (Source: MSH, 2015)

This model has been introduced in many low and middle-income countries including Ethiopia(14). It consists of twelve practices, of which four-practices are put parallel for leading, managing, and governing in equidistant(25, 28, 29). Nonetheless, neither how these practices are correlated nor modeled is yet reported.

Methods

Study design and participants

A cross-sectional study was carried out from December to January 2018. Thirty-two health care facilities located in northwest Ethiopia were participated. Eight hundred thirteen health facility employees were

selected, using simple random sampling technique, from the 32 health facilities. The employees worked in the health facilities that deployed staff for integrated leadership, management, and governance in-service training so far were excluded.

Data collection and analysis

Data were collected using a pretested structured self-rated multi-item questionnaire. It was comprised of the participants' socio-demographic characteristics (sex, age, educational level, responsibility, and year of service) and items measured the Dependent Variable (DV) that is the capacity to perform integrated leading, managing, and governing practices for results. Each participant rated his/her respective staff's capacity using 26 items (Table 2). The 26 items were a five-point Likert scale, ranging from 1 = very low to 5 = very high. From these, ten items were on leading practices, eight items were on managing practices and the remaining eight were on governing practices. The test stimuli (psychometric properties) of the questionnaire was refined through rigorous debriefing sessions. The debriefing was focused on questionnaire clarity and validity. Five specialists of health service management, of whom three were from civil service and two from the academic spheres were involved. The questionnaire was pretested on 42 participants working in similar settings but out of the actual study setting. Finally, an item was retained only if there was an internal consistency, alpha value of 80% or greater(30).

Data were analyzed using Statistical Package for Social Science (SPSS). Data analysis techniques such as descriptive, exploratory factor, composite reliability, average variance extraction, and ordinal logistic regression were conducted. Descriptive statistics was employed to summarize the information about the socio-demographic characteristics of the participants (Table 1) and the central tendency of the rated items (Table 2). Exploratory Factor Analysis (EFA) was unlocked to develop a measurement model through assembling latent factors extracted, items loaded and error variances observed. Here, four data to model fit indices were tested. Firstly, inter-correlation of .3 and greater was checked between items. Secondly, Kaiser-Meyer-Olkin (KMO) test of overall Measure of Sampling Adequacy (MSA) of .5 and greater with Bartlett's test of sphericity ($p < .05$) and intra-item consistency of .7 and greater were verified. Thirdly, the total variance explained by 60% and greater was proved. Lastly, communality of .5 and greater was confirmed. The communality represented a proportion of each item's variance that can be explained by the factors(31, 32). Two items, looking for best practices and match deeds to words (Table 2), were removed from the original dataset due to violating the rule of communality. This reduced the dataset to a 24-item. EFA was iterated to extract factors and to display factor loadings using principal axis factoring method with varimax rotation and a cut point of eigenvalue greater than 1. But, additional four items: set annual and strategic plan, allocate adequate resources, provide accountability and authority and provide appropriate feedback (Table 2) were removed from the 24-item dataset due to violating the rule of complex structure that is any factor had not resided on more than one item with factor loadings of .4 and greater(33). It showed that the dataset that satisfied the requirements of factor analysis was reduced again to a 20-item. From this dataset, the measurement model (Figure 2) that used to determine the DV was developed. As noted earlier, this was carried out by assembling factors extracted, items loaded and

error variances observed. An item was a measured variable that is clustered within a latent factor; a latent factor was unobserved variable which typically could not be directly measured, but it was assumed to cause the observed scores on the item, and error variance was the portion of the factor that could not be predicted from the remaining factors.

Figure 2: Measurement model: integrated leading, managing, and governing practices for results

The above figure indicates the four-factor measurement model. Observing the figure from left to right, the lines rayed from the integrated leading, managing, and governing practices for results denote the latent factors extracted. The lines radiated from each factor towards the item represent the degree of correlation of each item with the corresponding factor. The lines reflected against each item symbolize the error variance. These variances were calculated from one minus communality, which explained the portion of each observed item that was not predicted from the factors. The higher error variance (.5 and greater) indicated that an item might not belong to any factor. The four latent factors extracted were labeled considering the contents (scientific and empirical domains) of the items clustered within each factor(31, 34, 35). The eight items that loaded highly on factor 1 seemed to value the different aspects of organizational principles. Thus, this factor was labeled as compliance with principles. Besides, the four items that loaded highly on factor 2 contained diverse characteristics of strategy. Hence, it was termed as strategic sensitivity. Additionally, another four items that loaded highly on factor 3 appeared to correlate to various features of system development. Then, it was named as system building. Finally, the remaining four items that loaded highly on factor 4 gave the impression to relate to context, which accordingly was called contextual thoughtfulness.

Moreover, the reliability and validity of the measurement model were tested(36, 37). The reliability of the model was tested with Composite Reliability (CR), which was calculated from the squared sum of factor loadings divided by the squared sum of factor loadings and the sum of error variances(38). To reaffirm the reliability of the model the CR was triangulated with the total variance explained. Whereas, the validity of the model was tested using the Average Variance Extraction (AVE), which was triangulated with factor correlations. AVE was calculated from the sum of factor loading squared divided by sum of factor loading squared and sum of error variances(39). The square root of AVE was also considered, by which the presence of validity was supported if this value was greater than most of the correlation coefficients of items clustered within its factors. Correlations were also tested whether they were significantly different from zero, which supported convergent validity; or the higher number of times that the item highly correlated within its factor compared with the items of the other factors, that covered the divergent validity. Here, the percent of variability that the items shared was determined by squaring the correlations between items and multiplied by 100. Generally, the rule is that items should relate more strongly to their factor than to another factor.

Here, the authors want to note that the detailed outputs of the correlations of items; internal consistencies and communalities of original items; total variance explained; factor loadings and communalities of items only loaded and CR and AVE of the factors indicated on the four-factor measurement model were enclosed in the supplementary file. These were represented with S1, S2, S3, S4, and S5, respectively.

Following the above analyses, the DV was computed from the 20 items indicated on the measurement model. This again was 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. This was done based on categories indicated in the performance appraisal guideline of the Ethiopian ministry of health.

Next, ordinal logistic regression analysis with logit link function was conducted to model the relationship between the DV and its predictors. Model fitting information tested by (–2Log Likelihood) was significant at $p < .001$. Besides, the consistency of the observed data tested with Pearson chi-square goodness-of-fit was remained satisfactory with $p = 1$. Besides, the explained variance of DV from the predictors was tested by pseudo-r-squared value (Nagelkerke's $R^2 = .765$), which indicated a strong association.

Moreover, 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 $p = .487$. This showed that the slope coefficients were the same across response categories, which told that there had no evidence to reject the parallelism hypothesis. Finally, 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.

Results

Socio-demographic characteristics of participants

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

Central tendency of the measuring items

Table 2 indicates the means and standard deviations of measuring items that summarized their central tendencies.

Capacity to perform integrated leading, managing, and governing practices for results

Figure 3 indicates the capacity to perform integrated leading, managing, and governing practices for results among the health system workforce. The 95% confidence interval for low, moderate, high and very high levels were (37.8, 44.6); (39.5, 46.0); (11.2, 15.9); and (1.5, 3.7), correspondingly.

Predictors that affect capacity to perform integrated leading, managing, and governing practices for results

Table 3 displays the estimated coefficients of the ordinal logistic regression model. The estimates labeled “threshold” indicated that where the latent variable was cut to make the groups that were observed in the table, other ways it was not used in the interpretation of the results.

The other estimates labeled “location” were the ones that the researchers interested in, which 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. From the observed significance levels: sex and responsibility were significantly related ($p < .05$). Whereas, age, educational level and service year were appeared non-significant ($p > .05$). For example, the odds ratio of male health system workforce was 1.502 (95% CI, 1.038 to 2.173). This could be interpreted as being male health system workforce was 50.2% higher to perform integrated leading, managing, and governing practices for results in a very high level compared with those of females ($p = .031$).

Furthermore, all the six items that trimmed from the measurement model due to violating the requirements of factor analysis and treated as predictors were significantly related to the capacity of the workforce ($p < .05$). For instance, the odds ratio of the workforce who had a very low rate of ‘looking for best practices’ was .029 (95% CI, .011 to .080). This inferred that a very low rate of ‘looking for best practices’ reduced the workforce’s level of capacity by 97.1% compared with a very high rate ($p = .000$).

Discussion

The low and moderate levels of capacity to perform integrated leading, managing and governing practices for results accounted for 84% among the health system workforce in northwest Ethiopia. Sex and responsibility are identified as the main statistically significant predictors. The other statistically significant predictors are looking for best practices, match deeds to words, set annual and strategic plan, allocate adequate resources, provide accountability and authority, and provide appropriate feedback.

Regarding sex, being a male workforce has a higher capacity to perform integrated leading, managing, and governing practices for results. This deviation might arise from that the limited number of females are authorized to lead, manage, and govern organizations. 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 the 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 the office has more than two-fold higher capacity compared with the service owner. The potential reason might be that the service owners take limited training in the field. This together with the existed rhetoric (noted in the introduction section) make the service owners incapable of it. This directs that huge investment in integrated leading, managing, and governing practices for results is awaiting service owners, almost 3/4th of the workforce. About the other six significant predictors, as explained in the methods section, essentially these were developed among items to measure the DV, but later on, due to violating the requirements of factor analysis they are taken as predictors(33). However, their higher significant relationship with the capacity implies that in scheming integrated leading, managing, and governing practices for results projects; considering them as measuring items would be more meaningful. Accordingly, looking for best practices can be captured by contextual thoughtfulness; match deeds to words can be enclosed within strategic sensitivity; items like set annual and strategic plan, allocate adequate resources and provide accountability and authority can be nested within system building; and provide appropriate feedback can be contained by compliance with principles (figure 2).

As noted earlier, yet, no study reports the capacity of the health system workforce to perform integrated leading, managing, and governing practices for results and its predictors. Rather, some studies simply show that the health system workforce who are competent in performing leading, managing, and governing practices improve the health service outcomes(1, 10, 21–24). Also, some other studies reported that there is a significant duplication among the practices of the three dimensions(22, 23). These study reports say nothing about the depth of such duplications while there are works of literature that encourage discussing. Regarding to leadership: level of organizing details, the stand of the people to do what they would ask another to do, expectation of what people paid for, perception towards colleagues, level of creativity, self-perception, indulgence, level of loyalty, leadership approach, title and expertise, environment, and common sense are reported as determinants of it(40). Likewise, division of work, authority, and responsibility, discipline, unity of command, unity of direction, subordination of individual interest, remuneration, the degree of centralization, scalar chain, order, equity, stability of tenure of personnel, initiative and esprit de corps are indicated as elements of management(17). Similarly, leadership, corruption, management, transparency, accountability, systems to manage data, participation of key stakeholders, political context, check and balance strategy, and financial resources are specified as basis of governance(19). These exemplifications clearly show that one path is even accounted as determinant for the other path. For instance, leadership and management are mentioned as determinants of governance. Additionally, regardless of the level of specificity, most-perhaps-all of the characteristics mentioned as determinants in one path have a twin concept in the other paths. For example, common sense, unity of direction, and participation of stakeholders are similar concepts but mentioned as determinants of different paths. Moreover, the determinants exemplified above might be less helpful,

particularly, when policymakers, programmers, planners and researchers designing projects on integrated leading, managing, and governing practices for results based on socio-demographic characteristics such as sex and responsibility.

Generally, the current study tried to fill the existed gaps by determining the capacity of the health system workforce integrated leading, managing, and governing practices for results and identifying its predictors using a scientifically reliable and empirically scalable four-factor measurement model that amalgamated latent factors extracted, items rated and error variances observed. Such practices improve health results by balancing the people's needs, workloads and organizational requirements.

Away from all the implications, the results of the current study ought to be interpreted with two-fold limitations. First, as the questionnaire was self-rated, there might have been some information bias. Second, results from such a small sample size to the entire health system workforce could be generalized with caution.

Conclusions

The capacity to perform integrated leading, managing and governing practices for results 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, mixed design, and large sample size. In future actions, noting the current four-factor measurement model might be helpful.

Abbreviations

AVE	Average Variance Extraction
BDU	Bahir Dar University
BSC	Balance Score Card
CI	Confidence Intervals
CR	Composite Reliability
EFA	Exploratory Factor Analysis
Epi-Info	Epi-demographic Information
EXP	Exponential
FMoH	Federal Ministry of Health
KPIs	Key Performance Indicators
KMO	Kaiser-Meyer-Olkin
L+M+G	Leading, Managing and Governing
MDGs	Millennium Development Goals
MSA	Measure of Sampling Adequacy
MSH	Management Science for Health
OR	Odds Ratio
ORLA	Ordinal Logistic Regression Analysis
SDG-3	Sustainable Development Goal-3
SPSS	Statistical Package for Social Science
P	Probability value
PhD	Doctor of Philosophy
UHC	Universal Health Coverage
WHO	World Health Organization

Declarations

DATA AVAILABILITY

The dataset supporting the current conclusions is included in the article and supporting file.

AUTHOR CONTRIBUTIONS

YA pictured the original idea, designed the study and participated in all performance stages of the project; analyzed the data and finalized to write the manuscript.

GA pictured the original idea, designed the study and participated in all performance stages of the project; analyzed the data and finalized to write the manuscript.

DG pictured the original idea, designed the study and participated in all performance stages of the project; analyzed the data and finalized to write the manuscript.

All authors reviewed and approved the final manuscript.

COMPETING INTERESTS

All the authors declare that they have no competing interests.

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Tables

Table 1: Socio-demographic characteristics of participants (n = 813)

Variable	Category	Frequency	Percent
Sex	Male	417	51.3
	Female	396	48.7
	<= 24 years	124	15.3
Age	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
Year of service	<2 years	209	25.7
	2-4 years	222	27.3
	5-8 years	283	34.8
	>8 years	99	12.2

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 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 work flow	3.16	1.091
16	Coordinate practices with other staff'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 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

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

Variable			Estimate	Sig.	95% CI		95% CI		
					Lower Bound	Upper Bound	EXP	Lower bound	Upper bound
Threshold	Level of capacity	Low	-8.329	.000	-9.781	-6.876	.000	.000	.001
		Moderate	-3.282	.000	-4.579	-1.984	.038	.010	.138
		High	.932	.130	-.273	2.136	2.540	.761	8.466
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
		Moderate	-1.791	.000	-2.522	-1.059	.167	.080	.347

Provide appropriate feedback	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	-	-

Figures

Figure 1

Figure 1

Integrated health system leading, managing and governing practices for results model (Source: MSH, 2015)

Figure 2

Figure 2

Measurement model: integrated leading, managing, and governing practices for results

Figure 3

Figure 3

The capacity to perform integrated leading, managing, and governing practices for results among the health system workforce

Supplementary Files

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