

# **KNOWLEDGE AND PRACTICES ON MANAGERIAL ELEMENTS OF HEALTHCARE MANAGERS IN RULINDO DISTRICT, RWANDA**

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## **ABSTRACT**

**Background:** The healthcare industry is gradually becoming a knowledge-based community that is linked to health facilities, pharmacies, and customers for sharing knowledge, reducing administrative costs and improving quality of care. Rwanda's health sector faces significant barriers of which the critical shortage of skilled healthcare managers. **Objective:** The aim of this study was to assess the level of knowledge and practices on managerial elements of healthcare managers in Rulindo District, Rwanda. **Methodology:** It was a cross-sectional study using quantitative techniques, where the census targeted all the 111 Healthcare managers working in Rulindo District health facilities. A structured pre-test questionnaire aided in data collection. Data analysis utilized Statistical Package for Social Science (SPSS) Version 17.0 and descriptive statistics. Input in SPSS included answers of respondents, number of respondents, frequencies, and percentages in different tables and figures. **Results:** This study found that healthcare managers (97.3%) set their performance objectives and

performance appraisal. There was a high degree of cooperation between employees and the management (82%); awareness of training and development importance (75.7%); knowledge of career planning (90.1%); performance of HR management (92.8%) and overall knowledge on managerial elements of healthcare (93.7%). The main challenges included the lack of HR development strategies (64.8%); negative workforce attitudes towards managerial elements (58.5%); lack of financial resources (56.7%); and inadequate training (69.3%). **Conclusion:** managerial practices and competences are crucial for healthcare managers in performing their functions. They must be practiced and implemented to improve the local community's health status as an indicator of the quality of good functioning and performance of the Rwanda's healthcare system. Therefore, we recommended the employees' training upgrading, allocation of sufficient resources and considering motivational factors.

**Key Words:** *health sector, health program, health system, human resource, leadership*

## **INTRODUCTION**

Worldwide, the healthcare workers' shortage is estimated to reach 13 million by 2035. If the problem is not resolved, health workers' shortages will have negative implications on the health status of billions of persons all over the world.<sup>(1)</sup> Even though almost half of the global population lives in rural regions, only 38% of the global nurses and 25% of the doctors are appointed in these regions. The inefficiency of healthcare workers is more severe in developing countries where it is significantly undermining the accomplishment of the Sustainable Development Goals (MDGs) (WHO, 2013).<sup>(2)</sup> In developed countries such as the United States and the United Kingdom, the scarcity of healthcare workers is instigated by the rise of chronic diseases, conflicts, brain drain (migration) and health professionals' concentration in urban zones. Majority of African and Asian countries face acute healthcare workers deficiency, and about 2,360,000 health providers and 1,890,000 health managers are needed to fill the current gap. The estimated shortage of health workers for Africa is 817,992; and correction of the deficit requires an increase in health workers of 130% (UK Department of Health, 2015).<sup>(3)</sup>

In Rwanda, a persistent shortage of adequately trained health professionals poses a major barrier to scaling up the availability and quality of specialized care. In 2011, Rwanda had 625 physicians, 8273 nurses, and 240 midwives providing care at 4 referral hospitals, 41 district hospitals, and 442 health centers (Ministry of Health, 2012).<sup>(4)</sup> With a combined health-service-provider density of 0.84 physicians, nurses, and midwives per 1000 population, Rwanda falls far below the minimum recommended level of 2.3 providers per 1000 population.<sup>(5)</sup> The only medical school in the country produces an average of 100 physicians each year. The country is unable to recruit enough skilled personnel and retain high performing managers, while existing managers are given responsibilities without any prior training.<sup>(6, 7, 8, 9)</sup> Nevertheless, there is a research gap about the “knowledge and practices on managerial elements of healthcare managers” in the selected area.

The study’s main objective was to assess the level of knowledge and practices on managerial elements of healthcare managers in Rulindo District, Northern Rwanda. Specifically, it was designed to: (1) assess the level of practices on managerial elements possessed by healthcare managers in Rulindo District; (2) analyze the extent of knowledge on managerial elements possessed by healthcare managers in Rulindo District; and (3) determine the challenges related to lack of knowledge and practices faced by healthcare managers in Rulindo District.

## **MATERIALS AND METHODS**

### **Study Design and Setting**

We carried out a cross-sectional study in Rulindo District, Northern Province, Rwanda. The study area was Rulindo district located in the Northern Province with 567 km<sup>2</sup> of surface, 269,859 residents, 476 inhabitants/km<sup>2</sup> of density, and divided into 17 administrative sectors. The district has only 2 district hospitals, 21 health centers, and 2 health posts.<sup>(10, 11, 12)</sup>

### **Study Population and Sampling Technique**

The study targeted all the 111 healthcare managers working in Rulindo District. The census which is a count of each and every member in the target population was used as sampling technique.<sup>(13)</sup>

### **Data Collection Method**

A pre-tested questionnaire was used and distributed to participants, and consisted of several modules for collection, entry, processing and analysis of the data. For the reliability and validity, the questionnaire was first pre-tested in Gasabo District and assessed by administering it to ten (10) healthcare managers. The questionnaire content was assessed by other experienced researchers, checked and approved by the research supervisor.

### **Measurement of Dependent Variable**

Human resource and financial management was the dependent variable of this study. Human resource management was defined as “the ability to apply effective human resource practices in recruitment, selection, affirmative action, labor and employees’ management, and employee well-being programs; while financial management was the ability to estimate, justify and manage appropriate funding levels to support mission accomplishment”<sup>(14)</sup>.

## **Data Management and Analysis**

Data from questionnaires were passed in a designed computer using MS-Excel application. Then data were analyzed using “Statistical Package for Social Science [SPSS] Version 7.0”. Input in SPSS included respondents’ answers, number of respondents, frequencies, and percentages in tables and figures. Interpretation of results was done with personal comments and supported by inferences. Pearson’s chi-square test and odds ratio with corresponding 95% confidence interval were computed to establish the relationship between the dependent variable and the independent variable. Variables significant (less than 0.05) at bivariate analysis were considered together in multivariate analysis by specifying “backward LR” method. The statistical significance level set at P-value < 0.05 and 95% CI without including ORs of one in between were considered significant.

## **RESULTS**

### **Socio-demographic Characteristics of Respondents**

Findings showed that the majority of respondents were female (64.9%), aged from 25-35 years old (56.8%), a higher percentage of married healthcare managers (76.6%), bachelor’s degree holders (52.2%), having received regular training on HR and financial management (53.2%), and more experienced/seniors (56.7%). With regard to positions occupied by study participants, findings indicated that the highest percentages of respondents were those holding health centers representatives of non-clinical staff (18.9%) and deputy heads of health centers (18.9%). These are followed by heads of health centers (18.0%) and sector's health officers (16.2%).

### **Knowledge and Practices on Managerial Elements of Healthcare Managers**

Findings on knowledge and practices on managerial elements of healthcare managers indicated that most of respondents and set performance goals/objectives (97.3%) and performance appraisal is discussed with the employee respectively (92.8). Although 70.3% of the respondents reported that assessment of employees is conducted on regular basis, the remaining considerable percentage (28.8%) indicated otherwise. Majority agreed that there is high degree of cooperation between employees and the management (79.3%); staff member have the right to see the results of evaluation (82.0%); performance appraisals are based on input from multiple sources (78.4%); and immediate action is taken when employees lack capacity respectively (82.0%). The remaining percentages indicated otherwise.

With regard to organizational and career development findings showed that 70.3% of the respondents reported that they receive financial incentives while the 29.7% indicated they did not receive any financial incentives during the services. Large percentage (94.6%) pointed out that there is training needs assessment. Majority (82.0%) agreed for skills development and training on different roles. Majority (79.3%) indicated that prompt decisions are made on the basis of facts, whereas 20.7% indicated that it was not based on facts. About 73.9% and 75.7% indicated sharing best practices with rewards and giving priority on training respectively.

As regards, selection and recruitment findings indicated that majority of respondents (81.1%) and (82.9%) were attracting/retaining qualified personnel as well doing extensive employee

selection process respectively. Similarly, 77.5% of the respondents indicated that multiple applicants are screened before a position is filled. However, considerable percentage (36.9%) reported that candidates with irrelevant skills were not considered during the selection and recruitment process.

### **Overall Practice on Managerial Elements of Healthcare Managers**

The overall practice on managerial elements among healthcare managers was determined by using a score of responses. Twenty two (22) variables were considered together. The score 1 was given to the option “yes” while score 0 on the scale represented the category “no”. The overall score was generated by aggregating the scores. The maximum attainable total score was 22. A mean score was generated (17) and classified as adequate practice (above mean which is > 17) and in-adequate practice (below mean which is <17). Findings showed that about two third of the respondents (64.9%) scored adequate practice on managerial elements of healthcare while the remaining about one third (35.1%) scored in-adequate practice.

Research finding also indicated that about 75.7% were aware of training and development from managerial elements point of view, whereas 24.3% were not aware. Large percentages of respondents (90.1%; 93.7%; 92.8%; and 92.8%) affirmed being aware of career planning/development, familiar with performance appraisal, knew importance of integrating HR development and able to develop HR development strategies respectively. However, considerable percentages (21.6%) did not know how to utilize HR assessment technology to plan and (19.8%) were not familiar with the importance of paying attention to professional development.

The overall knowledge on managerial elements was determined by using a score of responses. Ten (10) variables were considered together. The overall score was generated by aggregating the scores. The maximum attainable total score was 10. A mean score was generated (7.5) and classified as adequate knowledge (mean > 7.5) and in-adequate knowledge (mean which <7.5). Findings indicated that about 73.0% respondents were scored adequate knowledge on managerial elements while 27.0% were scored in-adequate knowledge. Majority of respondents (73%) were more innovative, more productive, and more accountable; able to read financial statements; to understand how leaders get things done; they were very smart about competitive analysis and forging a strategy that considers realities and which way public policy is moving; they also understood capital markets, group dynamics, and different kinds of leadership.

### **Challenges Faced by Healthcare Managers**

Findings indicated that tough challenges include: lack of comprehensive human resource development strategies (64.8%), negative workforce attitudes towards managerial elements (58.5%), lack of financial resources (56.7%), and inadequate training and development (69.3%). Findings also revealed the following important suggestions by respondents to improved managerial elements: upgrading trainings (38.5%), allocating sufficient resources (30.8%) and considering motivation (30.8%).

### Association between Socio-demographic Characteristics and Practices on Managerial Elements

Findings in table 1 indicate that respondents who had working experience of greater than 10 years were about 4 times more likely to have adequate practice on managerial elements compared to those who were less than 6 years [OR=4.29; 95%CI=1.01-16.89; P=0.037]. Likewise, those who indicated regular training on managerial elements were 2.5 times more likely to have adequate practice on managerial elements than those who indicated otherwise [OR=2.51; 95% CI=1.13-5.60; P=0.022].

**Table 1: Socio-demographic characteristics and practices of managerial elements**

Variable	Adequate practice, n(%)		In-adequate, n(%)		COR(95%CI)	*P value
	n	%	n	%		
<b>Age in years</b>						
25 to 35	40	63.5%	23	36.5%	0.87(0.40-1.92)	0.729
36 and above	32	66.7%	16	33.3%	Reference	
<b>Gender</b>						
Male	23	59.0%	16	41.0%	Reference	
Female	49	68.1%	23	31.9%	1.48(0.66-3.32)	0.340
<b>Marital Status</b>						
Single	19	73.1%	7	26.9%	1.64(0.62-4.33)	0.316
Married	53	62.4%	32	37.6%	Reference	
<b>Working experience</b>						
1-5 year	25	52.1%	23	47.9%	Reference	
6-10 years	33	71.7%	13	28.3%	2.34(0.99-5.50)	0.052
>10 years	14	82.4%	3	17.6%	4.29(1.01-16.89)	<b>0.037</b>
<b>Level of educational</b>						
Secondary	32	69.60%	14	30.40%	1.69(0.69-4.10)	0.247
Higher	17	68.00%	8	32.00%	1.57(0.55-4.48)	0.399
Bachelor or masters	23	57.50%	17	42.50%	Reference	
<b>Regular training on managerial elements</b>						
Yes	44	74.6%	15	25.4%	2.51(1.13-5.60)	<b>0.022</b>
No	28	53.8%	24	46.2%	Reference	

COR= Crude Odds Ratio; CI= Confidence Interval, \* Significant at p<0.05 bolded

### Relationship between Knowledge and Practices on Managerial Elements

Findings in table 2 indicate that healthcare managers were acquainted with organizational development from managerial elements as standpoint were 10 times more likely to have adequate practice on Managerial elements compared to those who stated otherwise [OR=10.22; 95%CI=2.67-39.08; P=0.000]. Respondents who knew HR assessment technology to plan were 3.5 times more to practice Managerial elements adequately than those who did not [OR=3.47; 95% CI=1.36-8.844; P=0.007].

**Table 2: Knowledge and practices on managerial elements**

Variable	Adequate, n (%)		Inadequate, n (%)		COR(95%CI)	*P value
	n	%	n	%		
Awareness of training and development from Managerial elements point of view						
Yes	53	63.1%	31	36.9%	0.72(0.28-1.84)	0.491
No	19	70.4%	8	29.6%	Reference	
Knowing career planning and development as crucial part of HR management						
Yes	64	64.0%	36	36.0%	0.67(0.17-2.67)	0.565
No	8	72.7%	3	27.3%	Reference	
Acquaintance with organizational development from Managerial elements as standpoint						
Yes	69	71.9%	27	28.1%	10.22(2.67-39.08)	<b>0.000</b>
No	3	20.0%	12	80.0%	Reference	
Familiarity with performance appraisal within organization						
Yes	68	65.4%	36	34.6%	1.41(0.30-6.68)	0.658
No	4	57.1%	3	42.9%	Reference	
Accustomed with Good counseling that benefits all employees						
Yes	62	65.3%	33	34.7%	1.13(0.38-3.37)	0.830
No	10	62.5%	6	37.5%	Reference	
Knowledge importance of integrating HR development within organizational objectives						
Yes	65	63.1%	38	36.9%	0.24(0.03-2.06)	0.164
No	7	87.5%	1	12.5%	Reference	
Creating managerial and leadership capacity within the organization						
Yes	59	63.4%	34	36.6%	0.66(0.22-2.03)	0.475
No	13	72.2%	5	27.8%	Reference	
Utilizing HR assessment technology to plan						
Yes	62	71.3%	25	28.7%	3.47(1.36-8.844)	<b>0.007</b>
No	10	41.7%	14	58.3%	Reference	
Familiarity with the importance of Paying attention to professional development						
Yes	63	70.8%	26	29.2%	3.50(1.33-9.18)	<b>0.009</b>
No	9	40.9%	13	59.1%	Reference	
Able to develop HR development strategies						
Yes	66	64.1%	37	35.9%	0.60(0.11-3.10)	0.533
No	6	75.0%	2	25.0%	Reference	
Level of knowledge on Managerial elements of healthcare managers						
Adequate knowledge	61	75.3%	20	24.7%	5.27(2.15-12.93)	<b>0.000</b>
In-adequate knowledge	11	36.7%	19	63.3%	Reference	

Similarly, respondents who paid attention to professional development were 3.5 times more likely to have good practice on managerial elements compared to those who indicated otherwise [OR=3.50; 95% CI=1.33-9.18; P=0.009]. Healthcare managers who had adequate level of knowledge on Managerial elements of healthcare managers were 5 times more to practice Managerial elements than those with in-adequate knowledge [OR=5.27; 95% CI=2.15-12.93; P=0.000].

### **Multivariate Analysis of Factors associated with Practices on Managerial Elements**

**Table 3: Multivariate analysis of factors associated with practices on managerial elements**

<b>Variable</b>	<b>AOR</b>	<b>95%CI</b>		<b>*P value</b>
		<b>Lower</b>	<b>Upper</b>	
<b>Full model</b>				
Working experience				
1-5 year	0.284	0.06	1.351	0.114
6-10 years	0.584	0.118	2.894	0.51
<10 years	Reference			
Regular training on managerial elements				
Yes	2.142	0.855	5.364	0.104
No	Reference			
I acquainted with organizational development from managerial elements as standpoint				
Yes	4.817	0.715	32.47	0.106
No	Reference			
Utilizing HR assessment technology to plan				
Yes	1.001	0.254	3.95	0.998
No	Reference			
I am familiar with the importance of Paying attention to professional development				
Yes	1.3	0.319	5.298	0.714
No	Reference			
Level of knowledge on managerial elements of healthcare managers				
Adequate knowledge	2.753	0.906	8.366	0.074
In-adequate knowledge	Reference			
<b>Reduced model</b>				
Regular training on managerial elements				
Yes	2.661	1.117	6.339	<b>0.027</b>
No	Reference			
I acquainted with organizational development from managerial elements as standpoint				
Yes	10.745	2.715	42.526	<b>0.001</b>
No	Reference			
Level of knowledge on managerial elements of healthcare managers				
Adequate knowledge	2.779	1.12	6.926	<b>0.044</b>
In-adequate knowledge	Reference			
AOR= Adjusted Odds Ratio * Significant at p<0.05 bolded; Code: Adequate practice=1 and In-adequate practice=0				



Logistic regression analysis was conducted to assess factors associated independently with practices on managerial elements among healthcare managers. All factors found to have P value less than 0.05 at bivariate analysis were considered together in a multivariate analysis. Six variables were considered together in multivariate analysis. After running all these factors using binary logistic regression by specifying 'backward LR' with removal at  $P < 0.05$ , three (3) factors were retained in the final analysis as presented in Table 3.

Healthcare managers with regular training were 2.6 times more likely to have adequate practice on managerial elements than those who indicated otherwise [AOR=2.66; 95%CI=1.12-6.34;  $P=0.027$ ]. Those who acquainted were 10.7 times more likely to have adequate practice on managerial elements compared to those who stated otherwise [AOR=10.75; 95%CI=2.72-42.53;  $P=0.001$ ]. Those who had adequate level of knowledge were 2.8 times more to have good practice managerial elements than those with in-adequate knowledge [AOR=2.78; 95%CI=1.12-6.93;  $P=0.000$ ].

## **DISCUSSION**

The findings of this study showed that high rates of health managers were aged 25-35 years (56.8%), females (64.9%), married (76.6%), bachelor's degree holders (52.2%), receiving regular trainings on human resource and financial management (53.2%), and were more experienced/seniors (56.7%). Further, the importance of the parity was emphasized as the majority of healthcare managers were females. Greater gender equality in educational and employment opportunities fosters faster, more inclusive growth, not only because women are half of the world's population but also because they are more likely than men to invest in the human capital of their families.<sup>(15)</sup> Achieving gender parity in labor-force participation rates would increase GDP by 12% in developed countries over the next 20 years.<sup>(16, 17)</sup>

Positions occupied by respondents replicated exactly that of country's situation as the high proportions of respondents were health center representatives (18.9%) and deputy heads of health centers (18.9%), heads of health centers (18.0%) and sector's health officers (16.2%). The country had 683 doctors, 8,779 nurses, and 451 midwives, matching to: 1 doctor per 15,428 inhabitants, 1 nurse per 1,200 inhabitants, and 1 midwife per 23,364 inhabitants.<sup>(18)</sup> To be most productive, performance appraisals were collaborative and performance appraisals were conducted in a good manner as found by the University of California Riverside.<sup>(19)</sup>

Further, health workers received financial incentives (70.3%); skills development and training for different roles were organized (82%); training needs assessment was done (94.6%); decisions were made on the basis of facts (79.3%); creativity and innovation were supported (82%); sharing best practices with rewards (73.9%) and giving priority on training respectively (75.7%); career planning and development (63.1%); and knowledge and experience-based promotion (77.5%). Career development of employees plays an important role in enriching the human capital component of a company. An effective career development process can help in establishing trust between both parties to reach to the desired organizational outcomes, and reduces costs of high employee turnover.<sup>(20, 21, 22)</sup> The study found that the process of selection and recruitment in Rulindo District followed the five broad functions of HRM, including: (1) Resourcing; (2) Performance; (3) Reward system; (4) Learning and Development; and (5)

Employment relations.<sup>(23)</sup> The district recognizes the “selection” as the process of choosing from a group of applicants those individuals who are best suited for a particular position in an organization.<sup>(24, 25, 26, 27)</sup>

Large proportions of respondents (90.1%; 93.7%; 92.8%; and 92.8%) had the knowledge on managerial elements as established previously by Peggy and Julia<sup>(28)</sup>: (a) Staffing; (b) Performance management; (c) Development and learning; (d) Valuing people; (e) Organizational effectiveness. These HR strategies are essential to the effectiveness of the organization and to demonstrate the importance of human resources in the health care industry. The overall knowledge on managerial elements was about 73.0% respondents scored having adequate knowledge, while 27.0% were scored having in-adequate knowledge. Healthcare managers in Rulindo District were facing several challenges similar to those found in previous studies including among others: lack of healthcare financing; an ageing population; management of chronic diseases; healthcare manpower issues; inadequate infrastructures; and communicable disease control.<sup>(29, 30)</sup>

## **CONCLUSION AND RECOMMENDATIONS**

This study revealed that managerial practices and competences should be practiced and implemented to improve the health status of local communities as well as the quality of good functioning and organizational performance of Rwanda’s healthcare system. Further, enough training is required for healthcare managers to be aware of interpersonal practices, information management practices, analytical practices, and action taking practices. They need to be competent in (1) communication and relationship management; (2) leadership; (3) professionalism; (4) knowledge of the healthcare environment; and (5) business practices and knowledge. The Ministry of Health and other stakeholders should consider upgrading trainings, allocating sufficient resources and motivational factors. Supplementary research on motivational factors of healthcare managers can be undertaken to avoid the drain brain consequences.

## **LIMITATIONS OF THE STUDY**

Our work was undermined by the inaccessibility to the study area, a rural zone generally characterized by dangerous slopes and a mountainous topography, and a poor road network. Accessing health facilities during the rainy season was difficult. Further, the sample size was relatively small due to the limited number of healthcare managers. Thus, results could not be generalized to the whole country. Some respondents were hesitant in describing themselves. However, after explanations on the investigation aim, they became open-minded and self-confident.

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