



## RESEARCH ARTICLE

# Non-financial incentives and professional health workers' intentions to stay in public district hospitals in Rwanda: A cross-sectional study [version 1; referees: awaiting peer review]

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## Abstract

**Background:** Evidence shows that human resources represent a pillar that supports the healthcare system. As a result, retaining the health workforce has been considered to be a way of significantly improving the quality of healthcare services. However, the challenge of retaining the health workforce has been an issue of concern in Rwanda. The purpose of this study was to assess the level of availability and provision of non-financial incentives, and their association with professional health workers' intentions to stay in public district hospitals.

**Methods:** A cross-sectional survey research design with a quantitative approach was used. With a population of 469 health workers from four district hospitals in Kigali, Rwanda, the study used a sample of 252 individuals. The study measured the perceived levels of variability and provision of working conditions, training and development, career development opportunities, and intentions to stay. Logistic regression was used to show associations between predictors and the outcome variable with 95% confidence intervals.

**Results:** The findings of the study show significant associations between predictors and the outcome variable. In fact, average and high perceptions on working conditions are associated with professional health workers' likelihood of staying in the hospital (OR: 9.70,  $P < 0.001$  and OR: 5.77,  $P = 0.001$ , respectively). Similarly, an average and high level of perception on the availability of career development opportunities is a predictor of intention to stay (OR: 13.98,  $P < 0.001$  and OR: 12.26,  $P = 0.038$ , respectively). In the same view point, there is a likelihood that health workers who perceive high level of training will stay (OR 1.025;  $P = 0.014$ ).

**Conclusion:** There is evidence of significant associations between predictors and the outcome variable. However, the current status of non-financial incentives may adversely affect health workers' intentions to stay.

## Keywords

non-financial incentives, intentions to stay, health workers, Kigali

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## Introduction

The health system in Rwanda has undergone major changes, ranging from traditional healing system to modern practices, including current technological innovations in the health sector<sup>1</sup>. With the atrocities of the Genocide against the Tutsi at the end of the 20<sup>th</sup> century, the Rwandan health system, in terms of infrastructure and human capital, was almost completely destroyed<sup>1</sup>. It is within the last two decades that the system has had to recover through different interventions aiming at developing the infrastructure and building up a comprehensive scheme to provide healthcare institutions with the health workforce capable of responding to healthcare provision needs<sup>2</sup>.

The development of a multi-sectorial capacity building program has resulted in the establishment of human resources for health programs for better healthcare service delivery in Rwanda<sup>3</sup>. In addition to the existing teaching institutions that train the health personnel, there has been an attempt to develop partnerships with foreign healthcare organizations to provide staff with the necessary expertise and engage experts with their Rwandan counterparts for a better healthcare service practical activities. This involves foreign medical and surgical residencies, nursing programs, health professional trainings and support in hospital administration<sup>4</sup>. In addition to this, the Rwandan Economic Development and Poverty Reduction Strategy had in its main goals components relating to providing the health system with adequate personnel<sup>5</sup>. As result of these interventions, the number of professional health workers, including doctors and nurses, increased to such an extent that by 2012 there was one doctor and one nurse to a population of 16,001 and 1,291, respectively<sup>6</sup>. Moreover, the Rwandan Ministry of Health updated the policy strategic plan of human resources for health in Rwanda, and some education programs aiming at strengthening the health workforce were introduced, including a Master's program in family and community medicine and many others<sup>7</sup>.

Despite these considerable efforts to improve the healthcare system in terms of human resources for health in Rwanda, retaining the health workforce in public district hospitals has been an issue of concern in the recent years<sup>8,9</sup>. In fact, the high rates of staff turnover in public district hospitals has become a big challenge for the health system in Rwanda, as retaining key health personnel who can continue to deliver healthcare services, resulting in better health outcomes, continues to be a big issue. As a result of this challenge, healthcare institutions—especially district hospitals as major units of health care service provision in Rwanda—continue to have difficulties with delivering high-quality services, persisting workflow inefficiencies, repetitive costs related to hiring health workforce and dissatisfaction of patients, all of which can have significant negative effects on quality of care and patient safety. In view of the above, a study investigating the association between non-financial incentives and intentions to stay in the service among professional health workers in public district hospitals in Kigali, Rwanda was undertaken.

There are many packages of non-financial incentives provided to employees; most of them are related to improvements in

conditions of work, opportunities for career development, and training and development<sup>10</sup>. Non-financial incentives also include appreciation, meeting new challenges, caring attitudes from the employer and recognition<sup>11</sup>. In addition to the benefits observed in monetary value, employees have expectations in terms of working conditions that can enhance a professional relationship with employers, fulfillment of training and development needs, job security, and career development.

There is a body of evidence in the literature of human resources for health showing a positive relationship between non-financial incentives and a reduction in the turnover intentions of health workers<sup>12-23</sup>. Ronnie & Longmore<sup>12</sup> investigated human resource management practices, including non-financial incentives, in a medical complex in the Eastern Cape, South Africa and their association with the retention of medical doctors. On the basis of qualitative responses, the conclusions of the study stressed the need for such incentives for the healthcare setting in South Africa. The study revealed that poor working conditions led to frustrations in doctors in the hospitals, which hindered the institution's capacity to retain medical staff. In the same way, frustration of the health personnel caused by lack of training opportunities and career progression was associated with lower retention of staff in Malawi<sup>24</sup>.

Similarly, two studies were conducted in the health care setting in Kenya. In the framework of assessing factors affecting retention of human resources for healthcare workers in Trans-Nzoia County, Kenya<sup>25</sup>, it was realized that nurses' intentions to stay or leave healthcare facilities are determined by the institutions' capacity to integrate different human resource management practices, including training and development of the health personnel, effective policies aimed at improving working conditions and improved work-life balance. Another study aimed at investigating factors affecting the motivation and retention of healthcare workers in three different regions<sup>26</sup> recommended the establishment of policies relating to improvement in the provision of non-financial incentives, benefits and other intervention measures to be able to retain health workers.

In an attempt to study the determinants of retention of health workers in rural hospitals in Zimbabwe<sup>14</sup>, researchers came up with recommendations for proactive measures, interventions and strategies that address pertinent factors that are important to health professionals at varied stages of their careers. In fact, interventions to support employees and drive them to remain in the healthcare institutions were recommended, which they included packages to help them meet their professional career aspirations and initiation of equity in training and development of the health personnel.

In a recent study conducted in Sierra Leone, researchers investigated the intention of health workers to stay as a measure of their retention<sup>15</sup>. Qualitative findings from life stories showed that, apart from cases of Ebola outbreak that had exacerbated substantial health system and human resources for health challenges, the motivation of health workers through more

focused policies related to non-monetary schemes needed more careful attention in order to increase intentions to stay and the overall retention of health workers.

Another two studies in this area were conducted in Nigeria. The first one investigated the factors contributing to the attraction and retention of qualified health workers<sup>16</sup>, with findings showing that motivating health workers mainly depends on the institutional capacity to improve their working conditions and provide opportunities for career development. With the aim of assessing factors that affect retention of nurses in Lagos, it was revealed through the second study<sup>17</sup> that the availability and provision of training and development opportunities, coupled with opportunities for career growth affected nurses' intentions to stay. In addition to this, the study suggests other interventions: safety measures, bringing injuries to the lowest minimum, communicating with health workers and assisting those who work alone, and providing financial assistance for health workers to attend conferences. The study also suggests that leave provision and promotion are other best practices to motivate the nurses to remain in the service.

In a study conducted in Vietnam<sup>19</sup>, researchers sought to investigate the determinants of job retention among health workers. The findings of the study revealed that a lack of supervision and few opportunities to upgrade professional competencies affected retention levels among health workers. In fact, it was recommended that improvements of knowledge and maintaining skills through provision of in-service training could be the core foundations for retaining health workers. It also came out from the study findings that working environment with availability of medical equipment and supplies was associated with a reduction of turnover intention in the health workers.

## Methods

### Setting

The study was implemented in Kigali City, Rwanda. Rwanda has four main provinces and Kigali City: Southern Province, Northern Province, Eastern Province and the Western Province. Each province has Districts as the main units of local administration. Kigali City is administered at the level of province as it also has districts. With a population of more than 1 million, Kigali is the capital and largest city of Rwanda. Its geographic situation is in the centre of the country and has been considered the economic, cultural and transport hub of Rwanda since 1962, the period of independence. Being the capital city of the country, Kigali enjoys a good distribution of health facilities. There are two referral hospitals in Kigali, four district hospitals, one military hospital which also serves for the public and currently 29 health centers. With different types of health services offered to people in the capital city of the country, Kigali attracts different types of professional health workers who are employed in the four public district hospitals available in the city. In this regard, there is availability and variability of data among respondents.

### Design

The study used a cross-sectional survey with a quantitative research approach. The choice of the design was based on the

nature of the problem being studied, requiring professional health workers' views on the magnitude of the level of availability and provision of non-financial incentives and their perceived intentions to stay in (or leave) hospitals, and therefore the researcher's intention to measure the respondents' opinions behavior from a representative sample at one point of time.

### Population and sample

There are four public district hospitals in Kigali. The study was conducted in three hospitals because one of them did not meet the requirement of having served as a district hospital at the time the study was conducted. The study considered doctors, nurses, midwives, pharmacists and dentists as health professionals considered in the literature according to the International Standards Classification of Occupations<sup>27</sup>. To determine the sample, four main steps were undertaken. Firstly, purposive sampling was used to consider all dentists and pharmacists, considering that their number was small and the importance of their contribution to the study. Secondly, Slovin's formula was used to determine the total sample from the remaining population, including doctors, nurses and midwives. Thirdly, the principle of proportionate allocation was used to determine the number of respondents from each of the three hospitals. The proportionate allocation was also used to determine the number of doctors, nurses and midwives, from each hospital. Lastly, simple random sampling was used to determine the study participant among doctors, nurses and midwives, in each hospital. Therefore, 252 participants from the total number of 469 professional health workers, including doctors, nurses, midwives, dentists and pharmacists from three district hospitals were selected. For the matter of consistency, health workers who were on duty as internees and those who were in the probationary period (less than 6 months on duty) were not considered to participate in the study. The study participants were directly contacted by the researcher and the research assistants in the different departments of the hospitals, and each respondent was given up to up to 3 weeks to complete the questionnaire, which was administered in June 2017.

### Instrument, measurement and data analysis

The study used a survey questionnaire as the data collection tool for the level of availability of non-financial incentives and intentions to stay. The study instruments were designed and pilot-tested with 23 professional health workers from public district hospitals in the Southern Province of Rwanda, and corrections were made to the instruments. Working conditions included indicators of workload management practices and fairness, flexibility in working hours, the status of health institution facilities and equipment (e.g. offices, wards, theaters, wash rooms), appropriate lightning, mechanisms for noise reduction in the health care facilities, flexibility in the lifestyle changes and job-life balance, availability of safety measures for the health personnel and their equipment, and job security. The predictor of training and development was measured in terms of existence of training and development policy, fairness in provision of training and development opportunities among professional health workers, line managers' support to facilitate sharing health workers' new skills and techniques with other staff members, and aligning training and development opportunities

with promotion opportunities. The indicator of career development was measured through availability of professional health workers' self-assessment tools to facilitate career development, job rotation programs, career planning workshops and recognition of high achievement.

### Data analysis

Statistical analysis of the data were conducted using STATA 13.1. Descriptive statistics were used to report the respondents' socio-demographic characteristics. In order to determine professional health workers' levels of perception on the availability and provision of non-financial incentives in the hospitals, a single composite variable was computed from all indicators of each of the predictor (either working conditions, training and development or career development). Using an equal cut off, three levels from a computed composite variable were determined for each predictor. Logistic regression was used to show associations between predictors and the outcome variable with 95% confidence intervals. It should be noted that there are other factors that can affect professional health workers' intentions to leave or stay, including their socio-professional background; therefore, an adjusted multilevel logistic regression model was plotted to control for factors like age, marital status, experience, education level and sex.

### Ethical approval and consent

The research ethical clearance was obtained from the University of Rwanda Institutional Review Board (016RPGS017). Before undertaking the study in each hospital, research authorization was sought from and provided by each hospital research and ethical committee (1072/MSK/DH/2017; 247/HOP.KIBAG./2017; 483/KH/17). Before undertaking the study, respondents were provided with detailed explanation on the purpose of the study. Respondents were also assured of subject confidentiality and voluntary participation and written informed consent was provided before participation in the study.

## Results

### Demographic characteristics of respondents

The socio-professional characteristics of respondents show that there is a slight difference in the proportion of male and female respondents (53.1 and 46.9%, respectively). It is also realized the area of work where female respondents are dominant is the one of the dentists as they represent 56%. The dominant age group is between 31 and 45 years (59.3% of respondents), with 17.7% of respondents 30 years old or younger and those above 46 years making up 23.1% of respondents. Results also show that the majority of respondents have a university degree (more than 53% had a bachelor's or master's degree, or a PhD). The remaining have a university diploma or less. No dentist nor pharmacist are educated beyond bachelor's degree. As for respondents' marital status, the majority of them (72%) are in the category of married people, either still living with a partner, widowed, divorced or separated. While 70% of respondents were found to have been health professionals for 3

years or longer, the proportion of those that had worked in their current institution for that time is 45.7%. Foreigners make up only 5.4% of the total respondents. Socio-professional characteristics are summarized in [Table 1](#).

### Association between non-financial incentives and intention to remain in work

Although working conditions are not significantly associated with health workers' intentions to stay in the hospitals, there is a significant association between training and development and health workers' intentions to stay in the hospitals. In fact, there is a likelihood of remaining in-post among health workers who perceived themselves to have an average opportunity for of training and development compared with those with a perception of a low opportunity (OR=1.47; P=0.031). Similarly, health workers whose perceptions of training and development availability and provision are at high level were found to be more likely to stay in-post than their counterparts with low perceptions (OR=1.56; P=0.004). In terms of organizational capacity to provide professional health workers with opportunities for career development, statistical significance between predictors and the variable outcome was found. As a matter of fact, perceiving an average level of opportunity for career development in the healthcare institution was a determinant of intending to stay (OR=14.50; P<0.001) when compared with perception of a low level of opportunity for career development. In the same way, there is a greater likelihood of remaining among those who perceive opportunities for career development as high (OR=15.88; P=0.010), when compared with their counterparts with low perceptions.

By considering non-financial incentives that affect professional health workers' intentions to leave and stay in the hospital, it is worth noting that two predictors (training and development, and career development) are significantly associated with remaining in the workers' current position, while the third one, working conditions, does not ([Table 2](#)). By controlling for other factors, results in the adjusted model show a significant association between working conditions and professional health workers' intentions to stay. Perception of an average level of working conditions is more likely to influence professional health workers' intentions to stay in-post than a perception of working conditions as low (OR=9.70; P<0.001). Similarly, health workers whose perceptions of their working conditions are at a high level are more likely to stay than those who perceive that their working conditions are at a low level (OR=5.77; P=0.001). It is worth noting that having high perceptions on the availability and provision of training opportunities is likely to influence health workers' intentions to stay (OR 1.025; P=0.014). Controlling individual characteristics in the model led to finding out that health workers who perceive career development opportunities to be at average and high levels are more likely to stay (OR=12.48; P<0.001 and OR=12.26; P=0.038) compared with those whose perceptions rank career development opportunities as low ([Table 3](#)).

**Table 1. Social and demographic characteristics of respondents.**

Individual characteristics	Type of work, %				
	Doctors (n=49)	Nurses/midwives (n=153)	Dentists (n=25)	Pharmacists (n=16)	Total (n=243)
Sex					
Male	53.1	54.3	44.0	56.25	53.1
Female	46.9	45.7	56.0	43.75	46.9
Age groups, years					
≤30	12.2	24.2	0.0	0.0	17.6
31–45	67.4	52.9	68.0	81.2	59.3
≥46+	20.4	22.9	32.0	18.8	23.1
Education					
Diploma and less	34.7	46.4	72.0	37.5	46.1
Bachelor's Degree	61.2	39.9	28.0	62.5	44.4
Masters and PhD	4.1	13.7	0.0	0.0	9.5
Marital Status					
Single	42.9	26.1	8.0	31.3	28.0
Married and others	57.1	73.9	92.0	68.7	72.0
Number of years in the service					
<3	20.4	32.7	20.0	50.0	30.0
≥3	79.6	67.3	80.0	50.0	70.0
Number of years in the facility					
<3	53.1	43.1	44.0	50.0	45.7
≥3	46.9	56.9	56.0	50.0	54.3
Nationality					
Rwandan	83.7	98.7	88.0	100.0	94.7
Non-Rwandan	16.3	1.3	12.0	0.0	5.3

**Table 2. Associations between non-financial incentives and intentions to stay.**

Intentions to stay predictors	Odds ratio	95% confidence interval	P-value
Working conditions (vs low)			
Average	0.90	0.50–1.61	0.730
High	0.78	0.79–9.74	0.070
Training and development (vs low)			
Average	1.47	0.24–0.93	0.031
High	1.56	0.00–0.40	0.004
Career development (vs low)			
Average	14.50	5.54–37.93	0.000
High	15.88	1.91–13.14	0.010

**Table 3. Adjusted logistic regression model of association between non-financial incentives and intentions to stay.**

Intentions to stay predictors	Odds ratio	95% confidence interval	P-value
Sex (vs male)			
Female	0.73	0.30–1.76	0.480
Age group, years (vs ≤30 years)			
31–45	0.44	0.14–1.39	0.160
≥46	0.26	0.07–1.00	0.050
Marital status (vs single)			
Married and others	0.98	0.30–3.23	0.980
Education (vs diploma and less)			
Bachelor's Degree	0.41	0.18–0.90	0.021
Others	3.12	0.48–20.04	0.224
Type of work (vs doctors)			
Nurses and midwives	0.27	0.08–0.83	0.023
Others	0.09	0.02–0.44	0.003
Experience in the service (vs <3 years)			
≥3	3.91	0.88–17.43	0.073
Experience in the facility (vs <3 years)			
≥3	0.14	0.03–0.51	0.003
Working conditions (vs low)			
Average	9.70	3.14–29.95	0.000
High	5.77	15.41–2.16	0.001
Training and development (vs low)			
Average	1.19	0.46–3.06	0.708
High	1.025	0.00–0.22	0.014
Career development (vs low)			
Average	13.98	4.17–3.94	0.000
High	12.26	1.29–12.01	0.038

## Discussion

The present study found that working conditions, training and development, and opportunities for career development are positively associated with health workers' intentions to stay, confirming findings by other researchers who studied the issue of non-financial incentives and intentions to stay in health workers. Lehmann *et al.*<sup>28</sup> revealed that working environment, which is closely associated with working conditions, coupled with mechanisms for supporting career development among health workers, is among the interventions that could positively influence health workers' intentions to stay, thus fostering health institutions' capacity to retain workers. Working conditions and workload were also found to be factors associated with intent to stay in studies conducted by Odhiambo *et al.*<sup>29</sup> and Gilles, Burnard and Peytremann-Bridevaux<sup>30</sup>. The study mentions manageable workload, job security and supervisor

support, among other interventions, that led to a reduction in health workers' intention to leave. A recent study also assessed factors that predict attraction and intentions to stay among primary health care workers in Kenya<sup>13</sup>; its findings confirmed the hypothesis that working conditions and career development were positively correlated with health workers' intentions to stay, the latter being a measure of retention.

The findings of the present study also confirm those of other studies that investigated into the determinants of health workers' intentions to stay<sup>31–33</sup>, which found that the availability of medical equipment to facilitate assigned tasks at the workplace, support from management, mechanisms for supporting health workers to develop their career and improved organizational arrangements could affect health workers' intentions to stay or leave, depending on how they are handled. Similarly, a strong

positive association between these variables was also confirmed by a study involving six countries: Cameroon, Ghana, Senegal, South Africa, Uganda and Zimbabwe<sup>34</sup>.

In the same view point, findings for this study are also in tandem with those from studies performed by Dussalt and Franceschini<sup>35</sup>, and Aluku<sup>36</sup>, who analyzed different aspects of human resource management practices relating to non-financial incentives. They concluded that a lower likelihood of staying at work in health institutions among health workers is associated with a lack of equipment, supplies and other infrastructure, poor management, stress, poor workload management (including a lack of mechanisms for flexible working hours) and poor management support. In the same manner, the issue of equipment and supplies, coupled with workload-management policies and supervision are variables that correlated with health workers' intentions to stay, which corroborated with the findings of Mullei *et al.*<sup>37</sup>.

This study revealed a positive association between career development opportunities and the intention of health workers to stay in their job. In this perspective, it has been evidenced though a number of studies that the more health workers are facilitated to make their career growth dreams realized, the more they are likely to be committed to their job and become loyal to their institutions, which then reduces intentions to leave and therefore translates into high rates of intentions to stay<sup>38-40</sup>. In addition to this, a study by Cavanagh & Coffin<sup>41</sup> revealed a lower likelihood of health workers leaving their positions if they perceived that there were high levels of promotional opportunities, as this was revealed to be a positive determinant of job satisfaction.

The observed positive associations between training and development and health workers staying in their current position are in line with a findings of another study conducted in Ethiopia<sup>42</sup>. Other prior studies in this area made links between training opportunities and intentions to stay<sup>43</sup> and lack of such opportunities was associated with intentions to leave<sup>44</sup>. A study conducted in Malawi<sup>45</sup> also argued that continuous education was considered as one of the primary motivation schemes that should be undertaken to make health workers remain in their current role.

## Conclusion

Worker retention is a noteworthy issue for ensuring a strong, well-functioning healthcare system. In this view, the retention of professional health workers will ensure better quality healthcare services and enhance the professional commitment of the workers. The present study explored the associations between

non-financial incentives and intentions to stay among professional health workers employed in public district hospitals in Kigali, Rwanda. The findings of this study revealed a significant relationship between professional health workers' perceptions on the level of non-financial incentives in the hospitals and their intentions to stay. The intention of professional health workers to stay varies across levels of perceptions, depending on whether they feel a low, average (medium) or high level of non-financial incentives in their healthcare institutions. However, the current status of non-financial incentives in the public district hospitals may have an adverse effect on professional health workers' intentions to stay and the overall retention of health workers.

## Data availability

The raw data for this study are available on OSF: <https://doi.org/10.17605/OSF.IO/7RXP346>.

Data are available under the terms of the [Creative Commons Zero "No rights reserved" data waiver](#) (CC0 1.0 Public domain dedication).

The dataset has been provided in the excel format and the explanations of abbreviations within the dataset have been provided in an accompanying legend. The details on the measures of both independent and outcome variables have been also provided, along with data analysis process and statistical tests.

## Competing interests

No competing interests were disclosed.

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## Supplementary material

**Supplementary File 1. Questionnaire used in the study.**

[Click here to access the data.](#)

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