



# THE INFLUENCE OF HEALTH WORKERS' DISTRIBUTION ON THE QUALITY OF HEALTH SERVICE DELIVERY IN PUBLIC HOSPITALS IN MANDERA COUNTY, KENYA

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## ABSTRACT

**Background:** Quality health care access remains a primary agenda on SDGs at global level. Locally, on personnel, the number of medical professionals per capita within the local governmental entities is frequently used to indicate the unequal distribution of healthcare personnel. Variances in increased mortality trends, the necessity for healthcare services per capita, and hence the human required resources per capita, may differ among units. Mandera County faces similar challenges. The main objective of this study was to determine how health workers' distribution influences the quality of service delivery of health services at government hospitals in Mandera County.

**Methods:** Using a descriptive research design, health personnel from Mandera County Referral Hospital, Laffey, Rhamu and Banisa Sub County Hospitals formed the unit of analysis. The study conducted December 2022 used a random sample of 189 respondents from a population of 357 using proportional and simple systematic sampling procedures. A questionnaire method that was self-administered and 10 KII (patients) was used to gather data.

**Results:** The study found and concluded that at the significance level of 95%, skills mix, Individual Factors, Institutional Environment and socio-cultural factors were significant and positively correlated factors in influencing quality of health service delivery in public hospitals in Mandera County with significance values of 0.001, .005, .003 and .002 respectively.

**Conclusion:** All the studied variables only affect quality of healthcare service at 53.2%, implying 46.8% needs to be explored further.

**KEY WORDS:** Quality Healthcare, Health Workers' Distribution, Skill Mix, Service Delivery, Individual Factors, Institutional Environment, Socio-Cultural Factors

## 1.0 INTRODUCTION

Quality healthcare is a fundamental goal of healthcare systems worldwide, and it plays a significant role in influencing the distribution and retention of the health workforce. The availability of high-quality healthcare services can attract and retain healthcare professionals in specific regions or healthcare facilities (Buchan & Aiken, 2008). In this discussion, we will explore the relationship between quality healthcare and its effects on health workforce distribution, supported by citations and references. In addition, Quality healthcare services, including well-equipped facilities, access to advanced medical technology, and competent healthcare professionals, are attractive to healthcare workers. Areas or healthcare institutions that provide a high standard of care tend to be more successful in recruiting and retaining healthcare professionals (Arah et al., 2012). Healthcare workers are more likely to choose to work in environments where they can deliver high-quality care and make a meaningful impact on patient outcomes.

Quality healthcare in underserved areas help address health disparities and reduce geographical imbalances in health workforce distribution (Bärnighausen et al., 2011). By improving healthcare quality in remote or underserved regions, health systems can attract healthcare workers to these areas and mitigate workforce shortages.

Healthcare professionals are more likely to stay in regions or healthcare facilities where they can access continuous education and professional development opportunities. Quality healthcare institutions often invest in training, research, and skill development, which can be attractive to healthcare workers seeking career advancement (Dieleman et al., 2006). This can contribute to a more stable health workforce. High-quality healthcare often relies on interdisciplinary collaboration among healthcare professionals.

The general scarcity of health personnel in low-income countries has received considerable attention in recent decades, and the



critical need of lowering it to meet the Millennium Development Goals (MDGs) and now the Sustainable Development Goals (SDGs) (WHO, 2017). Aside from the overall lack of health personnel in these nations, there is a widespread belief that there are significant in-country disparities in the allocation of health personnel (Mumbo *et al.*, 2017). Due to the absence of reliable, relevant data at the national scale, the proof to support the claim has been restricted so far in this. This research aims to fill in the gaps in our understanding by looking at the impact of health personnel allocation on the delivery of services.

Medical officials and medical assistants typically perform healthcare activities in nations such as Ghana, Tanzania, Malawi, Kenya, and Mozambique, particularly in remote areas (Antwi & Phillips, 2017). Furthermore, in Malawi, these workers supplied the majority of 'medical' treatment, including anesthesia, medical treatment, and surgical techniques. South Africa has recently started a large-scale transfer to nurse-led ward-based primary care services. Every group comprises a nurse and a couple of community health workers chosen from the population.

Kenya's Department of Health laboriously recruits and dispatches medical laborers to the nation's famished districts (sub-County and County hospitals), terrible circumstances and displacement result in a contradictory position of personnel gaps, shortages, and jobless medical employees (Ndeti, Khasakhala, & Omolo, 2016). As a result, health personnel is compelled to seek jobs worldwide. Underprivileged compensation, terrible operating habitat with insufficient resources and no monitoring, an enormous amount of work in remote government healthcare (due to increased want), restricted profession and training chances for local employees, lack of communication, and the effect of HIV and AIDS are all aspects that force people to migrate (Aluku, 2015).

During the last few years, much attention has been paid to the general shortage of health workers in low-income countries, [1,2] and to the crucial importance of reducing it to attain the Millennium Development Goals [3-5]. In addition to the general shortage of health workers in these countries, there is a common understanding that large in- country inequalities exist in the distribution of health workers. So far, the evidence to support this proposition has been limited, owing to a lack of reliable disaggregated data at the country level.

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### 1.1 Problem Statement

Access to quality healthcare services is a fundamental human right, and it is critical for achieving optimal health outcomes. However, in many low- and middle-income countries, including Kenya, the quality of healthcare services remains poor due to various factors (WHO, 2017). One of the significant challenges is the inadequate distribution of health workers, which affects the quality of health service delivery in public hospitals. According to Mboya *et al.* (2022) Kenya has a health worker shortage of 42%, meaning that the country has less than half the number of health workers needed to provide adequate health services to its population. Furthermore, there is a significant disparity in health worker distribution, with some regions having a surplus of health workers, while others have an acute shortage. The disparity has a direct impact on the quality of healthcare services delivered in public hospitals, as regions with a shortage of health workers experience longer waiting times, delayed diagnoses, and inadequate treatment, leading to poor health outcomes (Tuwein & Tarus, 2017). Additionally, health workers in areas with a surplus experience burnout and exhaustion due to the high workload, leading to a decline in the quality of healthcare services provided (Washeya, 2018).

Mullei *et al.*, 2017 in their study found that a variety of push and pull variables affect the availability and distribution of healthcare professionals in Mandera County, which negatively impacts healthcare services delivery.

### 1.2 Purpose of the study

The main objective of the study was to establish the influence of distribution of healthcare workers on quality delivery of health services at public hospitals in Kenya's Mandera County.

### 1.3 Methods and Materials

Mixed methods research design was used in establishing the influence of health workers' distribution on the quality of health service delivery in public hospitals in Mandera County, Kenya. The study conducted in November 2022 to December 2022; focused on healthcare workers from Mandera County's level 4 government hospitals including Mandera County Referral Hospital, Laffey Sub County Hospital, Rhamu Sub County Hospital, and Banisa Sub County Hospital totaling to 357 individuals.



**Exclusion criteria:** All healthcare workers in levels 1,2 and 3 were excluded primarily due to the level of service provision with limited access to sophisticated equipment and the level of support provided to patients; and arguably the increased referrals made to higher facilities. **Inclusion criteria:** All levels 4 and 5 facilities were included in the study. The study employed the simple systematic selection technique. The sample size was realized by applying the Yamane formula (1967).

$$n = \frac{N}{1 + N(e)^2}$$

Where: N = Population size  
 n = sample size

e = Margin error of the study  
 Sample size therefore will be

$$n = \frac{357}{1+357(0.05)^2} = \frac{357}{1+357(0.0025)} = \frac{357}{1+0.8925} = \frac{357}{1.8925} = 189 \text{ which is } 53\% \text{ of the target population.}$$

A questionnaire and interview guide were used in collecting the necessary data aimed at fulfilling the purpose of this study. The study employed the quantitative approach in fulfilling its purpose. The raw data realized from the field was sorted, cleaned, coded, entered and analyzed by the use of Statistical Package for Social Sciences version 26. Descriptive outputs were used. The outputs

included the percentiles, means, and standard deviations. The results were presented in the form of figures and tables and interpreted in prose. Further, Pearson correlations was used to assess the strength of the association between the study variables. Finally, the multiple regression was run in order to find out the collective predictive power of the independent factors on the dependent variables. The model below was adopted to demonstrate the relationship that exist between the independent and the dependent variables.

The following was the regression formula:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$$

Where the variables are identified as follows:

Y = Quality of Service delivery

X<sub>1</sub> = Skill Mix

X<sub>2</sub> = Individual Factors

X<sub>3</sub> = Institutional Environment

X<sub>4</sub> = Socio-cultural factors

While β<sub>1</sub>, β<sub>2</sub>, β<sub>3</sub>, and β<sub>4</sub> are coefficients of determination and ε is the error term.

#### 1.4 Results and Discussion

The study achieved a response rate of 168(88.9%) which was considered sufficient (Mugenda and Mugenda, 2009). The background information considered was the respondents' gender, age, highest level of education, period of time working in facilities.

**Table 1.**

| <b>Gender</b>                     | <b>Frequency(N)</b> | <b>Percent (%)</b> |
|-----------------------------------|---------------------|--------------------|
| Male                              | 60                  | 36                 |
| Female                            | 108                 | 64                 |
| <b>Total</b>                      | <b>168</b>          | <b>100</b>         |
| <b>Age bracket</b>                | <b>Frequency(N)</b> | <b>Percent (%)</b> |
| ≤ 20 years                        | 5                   | 3                  |
| 21 - 25 years                     | 29                  | 17                 |
| 26 - 30 years                     | 40                  | 25                 |
| 31 – 35 years                     | 66                  | 39                 |
| 35 years and above                | 28                  | 16                 |
| <b>Total</b>                      | <b>168</b>          | <b>100</b>         |
| <b>Level of Education</b>         | <b>Frequency(N)</b> | <b>Percent (%)</b> |
| Diploma level                     | 57                  | 34                 |
| Higher National Diploma           | 22                  | 13                 |
| Bachelor's degree                 | 50                  | 30                 |
| Master's degree                   | 32                  | 19                 |
| PhD                               | 7                   | 4                  |
| <b>Total</b>                      | <b>168</b>          | <b>100</b>         |
| <b>Duration of service as HCW</b> | <b>Frequency(N)</b> | <b>Percent (%)</b> |
| 2 years and below                 | 27                  | 16                 |
| 3 – 7 years                       | 64                  | 38                 |
| 8 – 12 years                      | 45                  | 27                 |
| 13 years and more                 | 32                  | 19                 |
| <b>Total</b>                      | <b>168</b>          | <b>100</b>         |



### 1.5 Skill Mix

The results show that majority 113 (68%) of the respondents disagreed that task shifting in the hospitals was done for the enhancement of service delivery which agrees with Buchan & Dal Poz (2002).; that Task shifting, which involves delegating specific healthcare tasks to non-physician health workers, has been a strategy used in many healthcare systems to improve access to services, especially in resource-constrained settings 86(51%) agreed that responsibilities in the hospital-based were on competencies required for service delivery hence in line with WHO (2007) healthcare workers are assigned tasks and responsibilities that match their competencies is essential for providing safe and effective care. In addition, 87(52%) disagreed that hiring of staff decision took into account the service delivery needs in the hospitals hence in line with Dieleman et al., (2006) that Human resource management in healthcare should be closely linked to the strategic goals and service delivery priorities of the organization; 104(62%) disagreed that the hospitals included the health professionals in skill mix decision making. **See Table 2.**

An interview participant held that:

“.....there is a shortage of specialist doctors in public health facilities.....giving examples that there is a short in the number of gynecologists, nutritionists etc.....and is you manage to secure one they are expensive beyond what many people can afford.....” (KII, 009, Female).

In addition, another participant held that;

“.....some of the health staff can handle more than task at a time.....especially the nurses some help in dressing of wounds

and at the same time administrations of drugs.....” (KII, 006, Male)

Further, a female participant held that:

“..... the receptionists play roles in pharmacies, injections and attending to patients in wards (KII, 007, Female)

It is notable that task shifting in public hospitals in Mandera County was not done to enhance service delivery. Instead, responsibilities were assigned based on the competencies required for service delivery. The hiring decisions did not take into account the service delivery needs of the hospitals, and that health professionals were not involved in the skill mix decision-making process. Additionally, training capacity was not considered when making HRH decisions, and role competency was irrelevant in assigning tasks and responsibilities. The results agree with Baine, Kasangaki, and Mugisha (2018) that skill level has a considerable impact on the quality delivery of health services. In Addition, the findings are in line with Nabudere et al., (2017) that considerable influence of staffing levels on the delivery of services as judged by patient outcomes. Also, the findings agree with Lori (2015) that the training capacity of nurses substantially impacted productivity. Respondents recognize the value of skills mix, and the desire to see it reflected in the processes and systems of the facility is acknowledged. Skill mix remains a critical influence in successful delivery of health care services.

**Table 2:  
Skill Mix**

| Statement   | Disagree | Agree  | Mean   | Std. Deviation |
|---|----------|--------|--------|----------------|
|   | N (%)    | N (%)  |        |                |
| Task shifting in the hospital is done for the enhancement of service delivery   | 113(68)  | 55(32) | 2.8690 | 1.15068        |
| Responsibilities in the hospital-based on competencies required for service delivery  | 86(51)   | 82(49) | 3.2917 | 1.29649        |
| Hiring of staff decision takes into account the service delivery needs in the hospital  | 87(52)   | 81(48) | 3.2143 | 1.26275        |
| The hospital includes the health professionals in skill mix decision making   | 104(62)  | 64(38) | 2.9881 | 1.28085        |
| Training capacity is put into consideration when making HRH decisions   | 90(54)   | 78(46) | 3.1131 | 1.42864        |
| Role competency is key in assigning tasks and responsibilities  | 115(68)  | 53(32) | 2.7738 | 1.23668        |
| The hospital ensures there are sufficient health professionals to provide the required training, direction, supervision, and lifelong learning of staff at all levels | 106(63)  | 62(37) | 2.9286 | 1.42506        |
| Shifting of tasks, new specialization, and new skills are associated with changes in the distribution of staff, hence affecting service delivery                      | 107(64)  | 61(36) | 2.6488 | 1.56358        |

### 1.6 Individual Factors

The results tabulated in table 4.6 below shows that 136(81%) of the respondents agreed that the career specialization of staff influenced the deployment of the health workers to different areas; 124(74%) agreed that the experience of the health workers influenced their distribution. Additionally, 101(60%) disagreed that there was preference of workers residing in the county to those residing in other counties; 126(75%) disagreed that the ethnicity of workers had an influence on their distribution and service delivery. Finally, 113(67%) of the respondents disagreed

that attitudes and knowledge of the workers influenced service delivery. The results imply that the respondents were aware of the role taken by individual factors in the delivery of quality health services. **See Table 3.**

On staff, one participant held that:

“.....majority of the health workers are male and sometimes they show negative attitudes towards the patients..... they end up harassing patients or delaying in attending to them.....in most times I request to be attended to by female service providers.....” (KII, 007, Female)



In addition, another participant indicated that: “..... some staff ignore the responses given by the patients during treatments.... I had severe side effects for Malaria medication and the nurse was always ignoring my concerns until I was forced to change hospital..... In the new facility I was listened to and changed my medication and within few days I was well and healthy....” (KII, 004, Male). The study findings agree with Artiga and Hinton (2020) that the existence of a social support system was also discovered to impact service provision contentment and that the accommodating physical environment

and supporting social networks were related to improved service provision. Additionally, the results agreed with Kodjo (2009) that that service personnel’s attitudes influenced public treatment. Also, the findings are in line with the findings of Juckett (2015), patients are satisfied whenever they believe their requirements are being met correctly and recommended that healthcare providers must evaluate their personal views, habits, and attitudes, which have a substantial impact on communication with patients and, as a result, on client satisfaction

**Table 3:**  
**Individual Factors**

| Statement   | Disagree | Agree   | Mean   | Std. Deviation |
|---|----------|---------|--------|----------------|
|   | N (%)    | N (%)   |        |                |
| The career specialization of staff influences the deployment of the health workers to different areas | 32(19)   | 136(81) | 4.3393 | .70779         |
| The experience of the health workers influenced their distribution                                    | 44(26)   | 124(74) | 3.8333 | 1.10885        |
| There is preference of workers residing in the county to those residing in other counties             | 101(60)  | 67(40)  | 3.0536 | 1.24419        |
| The ethnicity of workers has an influence on their distribution and service delivery                  | 126(75)  | 42(25)  | 2.7857 | 1.16405        |
| Attitudes and knowledge of the workers influence service delivery                                     | 113(67)  | 55(33)  | 2.7917 | 1.29880        |

**1.7 Institutional Environment**

The study findings show that 132(79%) of the respondents agreed that leadership and governance of the facilities were aimed at streamlining the working relationships among workers and promoting team work; further 135(80%) agreed that there were clear TORs for the employees. Moreover, 121(72%) disagreed that there was HMIS which made patients work flow and made work easier; 115(68%) disagreed that employees participated in work scheduling and arranging working hours. In addition, 101(60%) agreed there were designated waiting areas, screening section within the facilities; 115(68%) disagreed that workers regularly received feedback regarding work performance from supervisors. Further, 94(56%) disagreed that job description was precise and elaborate; 114(68%) agreed that teams in the hospitals shared responsibilities for achieving the teams’ goals. Additionally, 100(59%) agreed that employees had good relationships with fellow team members; 118(70%) disagreed that there were enough facilities to enable employees to do their duties in the hospitals and 108(65%) disagreed that workplace politics influenced staff distribution. The findings imply that the respondents were cognizant of the role played by institutional environment in the delivery of quality health services. **See Table 4.**

An interview participant held that: “.....there are many public health challenges as a result of water and food scarcity, distance from health facilities, and the nomadic culture.....The participant recommended that the county government should establish outreaching programmes aimed at boosting quality service delivery of health facilities.....” (KII, 007, Female)

A youthful participant added that:

“..... the NHIF financial reservoirs sometimes depletes and some requests for medical funds are left unfunded and we are forced to pay out-of-pocket to receive health services.....” (KII, 002, Female)

In addition, another participant added that:

“.....the maternities, washrooms etc. fail to meet and maintain hygiene standards is compromised in the public health facilities.....” (KII, 001, Male).

One participant held that:

“.....there are too many referrals as the county health system has loopholes in attending to major emergencies..... for example the fatal accidents or sicknesses which needs oxygen incubators or assisted breathing.....Many are forced to air lift the patients to Nairobi for specialized treatment.....” (KII, 006, Male)

Another participant added that:

“..... The sitting places were insufficient for the health services seekers.....further added that.... there is no designated sitting sections and all the patients are made to sit together irrespective of their illnesses.....” (KII, 003, Male)

Further one key informant had the following to say:

“ ..... We don’t have a health facility nearby but people need health services. The participant added that the ambulance services are not available especially in case of an emergency in the night.....” (KII, 004, Male)

Further, a participant added that:

“..... our hospitals lack functional laboratories, radiological services at some points in time we are forced to seek laboratory services from the neighboring counties like Wajir and Garissa.....” (KII, 010, Male)

**Table 4:**  
**Institutional Environment**

|  | Disagree | Agree   | Mean   | Std. Deviation |
|--|----------|---------|--------|----------------|
|  | N (%)    | N (%)   |        |                |
| Leadership and governance of the facility is aimed at streamlining the working relationships among workers and promoting team work | 36(21)   | 132(79) | 2.9524 | 1.23720        |
| There is clear TORs for the employees  | 33(20)   | 135(80) | 4.2560 | .88227         |
| There is HMIS which makes patients work flow and makes work easier   | 121(72)  | 47(28)  | 2.9048 | 1.12797        |
| Employees participate in work scheduling and arranging working hours   | 115(68)  | 53(32)  | 2.9226 | 1.26205        |
| There are designated waiting areas, screening section within facility  | 101(60)  | 67(40)  | 3.0476 | 1.24203        |
| Workers regularly receive feedback regarding my work performance from my supervisor  | 115(68)  | 53(32)  | 2.8393 | 1.19043        |
| Job description is precise and elaborate   | 94(56)   | 74(44)  | 3.0357 | 1.20325        |
| Teams in this hospital share responsibility for achieving the team goal  | 54(32)   | 114(68) | 3.7500 | 1.20751        |
| Employees have a good relationship with my fellow team members   | 68(41)   | 100(59) | 3.5119 | 1.30860        |
| There are enough facilities to enable me to do my duties in this hospital  | 118(70)  | 50(30)  | 2.7381 | 1.12797        |
| Workplace politics influences how staff are distributed  | 108(65)  | 60(35)  | 3.0357 | 1.13672        |

**1.8 Socio-Cultural Factors**

The results show 155(92%) agreed that there were gender imbalances within the health facilities; 156(93%) agreed that values and beliefs led the staff in discharging their duties at public hospitals. Further, 121(71%) of the respondents disagreed that the age of the staff's influenced the deployment of the health workers to different areas, and consequently, service delivery; 97(57%) disagreed that the gender of health workers, whether male or female, influenced the distribution in-county facilities and consequently affect service delivery. Finally, majority 144(86%) of the respondents agreed that the healthcare personnel in the hospitals were posted into any facility within the county irrespective of their cultural factors. The outcomes show that the respondents were aware of the socio-cultural practices of the indigenous people in the county and how these socio-cultural practices influenced the medical services sought by the residents of Mandera county. **See Table 5.**

One participant indicated that:

“.....as an elderly woman I cannot be added to by a youthful staff ..... I cannot trust them.....the young seem careless and not careful.....” (KII, 002, Female)

A youth participant indicated that: “..... the presence of cultures and beliefs meant a lot in the profession of doctors and nurses as the staff training and attending to patients is universalized in approach.....” (KII, 002, Female)

The study found that the career specialization of staff influenced the deployment of health workers to different areas, and that the experience of health workers influenced their distribution. There was no preference for workers residing in the county over those residing in other counties, and the ethnicity of workers had no influence on their distribution and service delivery. Attitudes and knowledge of workers did not influence service delivery. The results agree with Wellman and Gulia (2018) that social networks, support networks, and institutional support were all strongly associated with the quality of health care provided and, as a result, patient contentment with that treatment.

**Table 5:**  
**Socio-Cultural Factors**

| Statement  | Disagree | Agree   | Mean   | Std. Deviation |
|--|----------|---------|--------|----------------|
|  | N (%)    | N (%)   |        |                |
| There are gender imbalances in the workplace in the hospital   | 13(8)    | 155(92) | 4.2321 | .59913         |
| Values and beliefs lead the staff in discharging their duties at public hospitals  | 12(7)    | 156(93) | 4.2738 | .74787         |
| The age of the staff's influences the deployment of the health workers to different areas, and consequently, service delivery                              | 121(71)  | 47(29)  | 2.6250 | 1.04788        |
| The gender of health workers, whether males or females, influences how they are distributed in-country facilities and consequently affect service delivery | 97(57)   | 71(43)  | 2.9464 | 1.20507        |
| The healthcare personnel in the hospital are posted in any facility around the county irrespective of their cultural factors                               | 24(14)   | 144(86) | 4.0833 | .72934         |

### 1.9 Quality of Service Delivery

The results show that 120(62%) disagreed that the hospitals focused on patient's satisfaction as a component of service delivery; 122(73%) agreed that the speed of access to critical components in health care delivery helped in improving service delivery; 126(75%) disagreed that the state of responsiveness at the hospital helped in improving service delivery. The findings further show that 152(91%) disagreed that the quality was assured for the health services provided within the health facilities; 100(60%) agreed that the presence of opportunities for individual and professional development helped in improving service

delivery. Additionally, 110(66%) disagreed that the health facilities had a conducive working environment that ensured adequate service delivery; 119(71%) disagreed that there was improved reliability of service delivery. The findings show that the respondents were aware of what entails quality health services delivery and recognized the role of distribution of health workforce in the delivering quality health services. **See Table 6.** In general, the KII responses indicated that most services were of good quality, some were of moderate quality and others were of sub-standard quality.

**Table 6:**  
**Quality of Service Delivery**

|  | Disagree | Agree   | Mean   | Std. Deviation |
|--|----------|---------|--------|----------------|
|  | N (%)    | N (%)   |        |                |
| The hospital focuses on patient's satisfaction as a component of service delivery                        | 120(62)  | 48(38)  | 2.6726 | 1.16072        |
| The speed of access to critical components in health care delivery helps in improving service delivery   | 46(27)   | 122(73) | 3.6905 | 1.00866        |
| The state of responsiveness at the hospital; helps in improving service delivery                         | 126(75)  | 42(25)  | 2.7798 | 1.15518        |
| The quality is assured for the health services provided within the health facilities                     | 152(91)  | 16(9)   | 1.8810 | .98983         |
| Presence of opportunities for individual and professional development help in improving service delivery | 68(40)   | 100(60) | 3.4524 | .97151         |
| The hospital has a conducive working environment that ensures adequate service delivery                  | 110(66)  | 58(34)  | 2.8988 | 1.10329        |
| There is improved reliability of service delivery  | 119(71)  | 49(29)  | 2.7083 | 1.01695        |

### 1.10 Model Summary

The four independent variables in the study influence 53.2% of the quality of health service delivery in public hospitals in Mandera county as represented by the R<sup>2</sup>. This is an implication that factors outside this study influence 46.8% of the quality of

health service delivery in public hospitals in Mandera county. Hence, additional research should be conducted with the aim of determining the other factors that influence 46.8% of the quality of health service delivery in public hospitals in Mandera County. **See Table 7.**

**Table 7:**  
**Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | .729 <sup>a</sup> | .532     | .494              | .31990                     |

a. Predictors: (Constant), Socio-Cultural Factors, Individual Factors, Skill Mix, Institutional Environment

### 1.11 Analysis of Variance (ANOVA)

The p-value (sig.) was 0.007 (p>0.05) indicating that socio-cultural factors, individual factors, skill mix, institutional environment had statistically significant effect on the quality of

health service delivery in public hospitals in Mandera County at 95% confidence level. The F critical at 5% level of significance was 2.235 which was above .05 hence null hypotheses was rejected. **See Table 8.**

**Table 8:**  
**ANOVA of Regression**

| Model |            | Sum of Squares | df  | Mean Square | F     | Sig.              |
|-------|------------|----------------|-----|-------------|-------|-------------------|
| 1     | Regression | 1.359          | 4   | .340        | 2.235 | .007 <sup>b</sup> |
|       | Residual   | 24.780         | 163 | .152        |       |                   |
|       | Total      | 26.139         | 167 |             |       |                   |

a. Dependent Variable: Quality Service Delivery

b. Predictors: (Constant), Socio-Cultural Factors, Individual Factors, Skill Mix, Institutional Environment



**1.12 Coefficient of Determination**

As per the SPSS generated table above, the regression equation is:

$$(Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon) \text{ became:}$$

$$Y = 1.782 + .088X_1 + .218X_2 + .498X_3 + .173X_4 + \epsilon$$

The regression equation shows that the quality of health service delivery in public hospitals in Mandera County would be 1.782 if all factors were constant at zero. A unit increase in skill mix would lead to a 0.188 increase in quality, while a unit increase in individual factors would lead to a 0.218 increase, and a unit increase in institutional environment would lead to a 0.398

increase. A unit increase in socio-cultural factors would lead to a 0.173 increase.

At the 95% significance level, individual factors, institutional environment, and socio-cultural factors were significant factors in influencing the quality of health service delivery in public hospitals in Mandera County. Institutional environment was the most influential determinant, followed by individual factors and socio-cultural factors. Skill mix was not a significant determinant. The results of this study suggest that the quality of health service delivery in public hospitals in Mandera County could be improved by focusing on individual factors, institutional environment, socio-cultural factors and skill mix.

**Table 9:  
Coefficient of Determination**

| Model | Unstandardized Coefficients |            | Standardized Coefficients | t    | Sig.  |      |
|-------|-----------------------------|------------|---------------------------|------|-------|------|
|       | B                           | Std. Error | Beta                      |      |       |      |
| 1     | (Constant)                  | 1.782      | .405                      |      | 4.401 | .000 |
|       | Skill Mix                   | .188       | .063                      | .044 | 1.569 | .001 |
|       | Individual Factors          | .218       | .056                      | .011 | 1.139 | .005 |
|       | Institutional Environment   | .398       | .079                      | .102 | 1.309 | .003 |
|       | Socio-Cultural Factors      | .173       | .073                      | .181 | 2.352 | .002 |

a. Dependent Variable: Quality Service Delivery

The study found that skill mix positively and significantly influenced quality service delivery (p=.001). The findings are in line with the findings of Dixon et al. (2019) that competence has a considerable positive impact on the provision of operations in England's intermediary care facilities. Also the findings agree with the findings of Baine, Kasangaki, and Mugisha (2018) that skill level has a considerable impact on the health delivery of services. Further the results agree with the findings of Lori (2015) that the training capacity of nurses substantially impacted productivity.

The study found that individual factors positively and significantly influenced the quality service delivery (p=.005). The findings are in line with Lagarde and Blaauw (2015) that pro-social attitudes were motivation factors in labor supply decision-making and policy conceptions in healthcare allocation. Further the findings are in line with Kodjo (2009) that service personnel's attitudes influenced public health services. Also the findings are in line with Makahlolo (2017) that happier employees were more likely to stay at government hospitals, resulting in improved quality of service delivery.

Finally, the study found that socio-cultural factors positively and significantly (p=.020) influenced the quality delivery of services. The study findings are in line with Hernandez and Blazer (2006) that health care professionals were much more likely to work in situations with emotionally supportive structure, psychological support, and instrumental support. The findings further agree with Afolayan and Okpemuza (2012) that individuals and the professionals who treated patients were influenced by the

environment, which is why the cultural identity of medical personnel was intimately correlated to the delivery of services.

**1.13 Discussion of the findings**

The study found that skill mix positively and significantly influenced quality service delivery (p=.001). Implying that a rise in skill mix increases the quality service delivery. The findings are in line with the findings of Dixon et al. (2019) that competence has a considerable positive impact on the provision of operations in England's intermediary care facilities.

The study found that individual factors positively and significantly influenced the quality service delivery (p=.005). Implying that a rise in individual factors increases the quality service delivery.

In addition, the study found that institutional environment positively and significantly influenced the quality delivery of services (p=.003). Implying that a rise in institutional environment increases the quality service delivery.

Finally, the study found that socio-cultural factors positively and significantly (p=.002) influenced the quality delivery of services. Implying that a rise in socio-cultural factors increases the quality service delivery. The study findings are in line with Hernandez and Blazer (2006) that health care professionals were much more likely to work in situations with emotionally supportive structure, psychological support, and instrumental support.





### 1.14 Recommendations

The study recommends that in order to promote skill mix, the Mandera county department of health should recruit a health workforce that is multi-skilled with the aim of promoting the availability of specialists purposed which will in turn reduce the number of referrals to other counties for specialized care. In addition, the study recommends that in order to promote institutional environment, the management of the health facilities should involve the employees in making decisions regarding the scheduling of duties, shifts and allowances with the aim of promoting the sense of belonging on the part of the employees. Finally, the county government through the ministry of health should start a programme aimed at teaching new entrants on the socio-cultural factors such as the values, beliefs with the aim of promoting the understanding of the medical needs of the people of Mandera County.

### 1.15 Conclusion

The study draws the conclusion that service delivery in health care can indeed be strengthened by consideration of a number of factors, not exclusive to human resource distribution factors of social, individual, institutional or skills. However, the findings show a representation of factors that contribute a considerable 53% towards quality service delivery, implying significant factors were not considered in this study that would answer the difference about 47%. This then, shows that service delivery in health facilities in Mandera County is a contribution of multi-strategies that fosters interests of staff skills, staff welfare, policies, regulations and laws that abounds delivery of quality services. Consequently, service delivery in health care industry based on findings shows a deliberate effort by governing entities to provide a conducive environment for staff to work as well as patients comfort. It is thus noted, that Mandera county could be among the best performing entity not against the ideal situation but within the context of operation. This study concludes that all the four independent variables affect the service delivery of health care in various facilities studied in Mandera County; however, there are additional factors that were not studied but could contribute to quality service for the citizens.

### 1.16 References

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### Declaration

I declare that this thesis is my original work and has not been presented for a degree or any other award in any other University

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