

HEALTH CARE WORKING CONDITIONS AND QUALITY
OBSTETRIC CARE AMONG HEALTH CARE PROVIDERS AT
ANTENATAL AND DELIVERY UNITS AT KIBONDO DISTRICT
COUNCIL

By

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A dissertation submitted in partial fulfillment of the requirement for the
Degree of Master of Public Health (MPH) of the Muhimbili University of
Health and Allied Sciences

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CERTIFICATION

The undersigned certify that he has read and hereby recommend for acceptance by the Muhimbili University of Health and Allied Sciences a dissertation entitled: **Health care working conditions and quality obstetric care among health workers at antenatal and delivery units at Kibondo district council**, in partial fulfillment of the requirements for the degree of Master of Public Health (MPH)

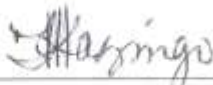


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DECLARATION AND COPYRIGHT

I hereby solemnly declare that this dissertation is my original work and that has never been submitted for a diploma or degree in any other University.

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DEDICATION

This work is dedicated to my beloved family, my wife Maria Lucas, Josephine Lucas and Joseph Lucas for the physical, psychological support, and economical support you extended to me and tolerance you displayed during my absence at home.

I dedicate this dissertation to my father and my mother, the late Josephine Kazingo, may the Almighty God rest her soul in eternal peace, Amen.

Thanks to former Kibondo District Commissioner, Honorable. Antonyo Mzurikwao and his family: Executive Director Jimmy Mray, acting District Medical Officer Ezra Ngereza and all the Health staff at Kibondo District, relatives and family friends for their moral support which made me work tirelessly to complete this study.

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ABSTRACT

A good Working condition is one of the supportive environments which managers always strives for in their institutions. The main objective was to assess health care working conditions and quality obstetric care among health care providers in antenatal and delivery unit at Kibondo District council. This study was conducted at Kibondo District Council. The study was a cross sectional descriptive study. Study population was health workers at antenatal and delivery unit. Questionnaires and health facility data checklist tools were used to collect data. Epi Info system version 6 was use for data analysis. About 116 health workers were studied. About 89.7% of all health workers were satisfied with their job. 42% had salary per month ranging from 100,00-200,000TSHS. 73.3% were not satisfied with the salary. (16.4%) experienced violence at place of work. Politicians were leading to cause violence to health workers at place of work. More than 80% had attended training in the past 12 moths after initial professional training. All health facility was supplied with drugs all the time (60.3%). Three quarters (75%) reported to be heavily overloaded. There was about 140 per 100,000 live birth maternal mortality in 39 health facilities studied. There is evidence that health care working condition was not conducive

ACRONYMS

AMO	Assistant Medical officer
CO	Clinical officer
HMIS	Health Management Information System
MO	Medical Officer
MCHA	Maternal and child health Aide
MMR	Maternal mortality rate
MNH	Muhimbili National Hospital
NMW	Nurse Midwife
NO	Nursing Officer
PHN	Public Health Nurse
PHNB	Public health nurse B
Nurse ass.	Nurse Assistant
RHAQ	Research Agency for Healthcare and Quality
WHO	World Health Organization
UNFPA	United Nation for Population Agency
UNICEF	United Nation Childrens Fund
UN	United Nations
USA	United States of America

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background Information

Working condition is one of the supportive environments which we strive to achieve desired quality of care in the health system. Such a phenomenon may also be called a working climate. The working climate may affect individuals day to day working habits at the facility as whole (Macgregor et al, 2005) Always managers strive to improve and sustain the working climate among the health workers. This may be made possible through many ways such as:

Improve working conditions by motivating staff, providing clarity, support, strengthening communication system among health workers, strengthening commitment, Supportive technique among health workers and Set the organizational supportive supervision.

Working condition (Working climate) is defined as the prevailing work place atmosphere as experienced by employees.

1.2 Health care working condition

This explains the characteristics of the health care workplace and all the factors that influences the working environment in the institution (Bursitin; 2001). When people work in a supportive environment, they strive for better results. Work place condition can affect your daily activities and also staff behavior at workplace. "A positive working condition is a conducive situation to Health workers (Macgregor, 2005).

Quality of care has been defined as extent to which application of medical science and technology is expected to achieve the most favorable balance between risk and benefits (Donabedian, 2003). Quality of care also reflects how the resources allocated to the health care correspond to the required standards in the health system. Effort of increasing quality in maternal health has significantly increased in the country.

1.3 Categories of Indicators for Assessing Quality of Care

According to Donabedian there are three major categories of indicators in assessing quality of care namely structure, process and outcome. Structure indicator denotes the conditions under which care is provided. These will include human resources (number, variety, and qualification), financial resources, and physical resources, material resources, health facility, and, organizational characteristics such as qualification of medical and nursing staff etc.

Process indicators- involve procedures performed by health personnel in the course of providing services. This may constitute procedures like history taking, physical examination, laboratory diagnosis, treatment, rehabilitation, prevention, patient education carried by professional personnel.

Outcome indicators-focus on the results achieved during the whole process antenatal and delivery services. Also denotes desirable changes that have occurred whether positive or negative in the population receiving the services. The care or services rendered by the health service providers in the health facility. Other results expected

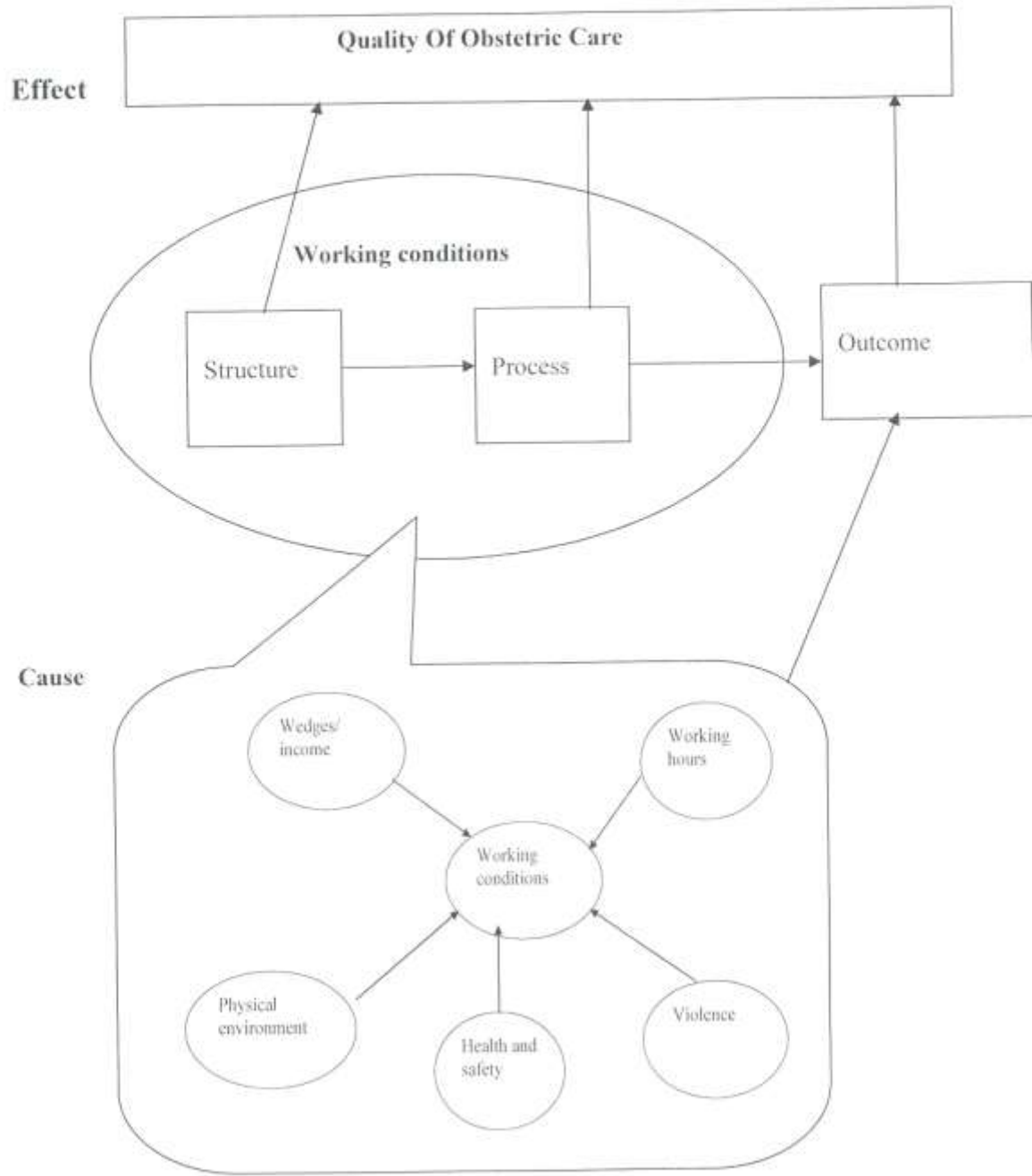
may be like immunization, number of maternal deaths, maternal complications, and patient satisfaction with the services.

Antenatal care and delivery care were widely introduced in the Western world in the 20th century. Resource use is hardly measured routinely, but must vary enormously because of variation in the amount and intensity of care and in its uptake. When resource use is at the lower end of the spectrum, antenatal care should be audited so that the needs of women and their babies can be best addressed. (Marion; 1993)

Maternal mortality has been one of the public health problems in the world, Africa, sub Saharan countries. WHO estimated maternal mortality ratio (MMR) for the world to be 400/ 100,000 live birth and 920/ 100,000 live births for sub Saharan countries in the year 2000 (WHO 2004). The quality of obstetric care provided is still debatable among the researchers. Organizations that have tried to define quality of care as the excellence in reference to improvement in health status; (Urassa, 2004).

In Tanzania estimates of maternal mortality is 578/ 100,000 live births based on Tanzanian Demographic health survey of 2004. Also inadequate human resources for maternal health services have remained a challenge. Barriers in accessing emergency obstetric care, drugs and equipment supplies may be one of the indicators leading to high maternal mortality in Tanzania. (TDHS, 2004). Kibondo District council is among the hard to reach Districts in Tanzania. These Districts have experienced many challenges in providing quality obstetric care in Tanzania.

Fig 1. Conceptual framework of quality of Obstetric care and health care working conditions



1.4 Problem Statement

In 1990s the Government of Tanzania introduced Health sector reform in which the aim was to improve Health service delivery in the country. The Health sector reform had eight strategies which were to be implemented of which provision of quality health services is one of them. Health services delivery and quality obstetric care service provision have been facing significant gap since the introduction of the reform. These challenges includes high maternal mortality, high obstetric complications, client dissatisfaction, and poor health facility infrastructures. Working Conditions was identified as an important factor that can affect health worker effectiveness. In so doing there were number of plausible explanations for the incongruity between what is known for the Health worker to be effective and deliver quality structure and outcome in the community. These included staff client ratio, availability of medical equipments, staffing level at the Health facility, staff motivation, drug availability, role of staff training, supervision on quality of obstetric care provision as structural quality and quality outcome as a whole. It was observed that where interaction between Health workers and patient was good the level of service delivery performance becomes good. According to HMIS during the year 2007 the Kibondo District experienced 104/100,000 live birth, while Under five mortality rate was 119/1000 live birth for the same year. Little is not known about the associated health workers working Conditions that affect staff performance. This study is aimed to explore health workers working environment and how it is related to structural, outcome and quality obstetric care among antenatal

and delivery unit at Kibondo District. And also for partial fulfillment of Masters of Public Health of Muhimbili University of Health and Allied Sciences.

1.5 Research questions

- What are the working conditions for health workers at Kibondo District?
- What is the outcome quality among Health Facilities in Kibondo District?
- What is the structural quality of obstetric care at health facility in the district?
- What is the level of perceived health care workload in area of maternal care?

1.6 Rationale of the Study

When health care working condition was conducive people felt well motivated for high performance. This was what people strived for in the workplace.(McClelland ,1985). In Canada it was observed that the relationship between working condition and quality outcome was just intuitive. Also Canadian nurse staff found that positive working conditions increased their sense of empowerment and job commitment which improved the patient outcomes (Laschinger et al, 2001).

Maternal mortality was one of the public health problems in the world, Africa, sub Saharan countries as well as in Tanzania. WHO estimated maternal mortality ratio (MMR) for the world to be 400/ 100,000 live births and sub Saharan countries to 920/ 100,000 live births in the 2000, while in Tanzania remains as high as 578/ 100,000 live births (NBS & Micro, 2005)

Kibondo District council is among the several Districts located in remote areas of Tanzania with Maternal Mortality of 104/ 100,000 live Birth for the year 2007. Little is known about health care working conditions in relation to structural and outcome quality of care. Therefore this study aims at exploring working conditions, structural and outcome among health workers at antenatal and delivery unit in Kibondo District council. This study is also a requirement for partial fulfillment of masters in Public Health.

1.7 Broad objective

To assess health care working conditions, structural and outcome quality of obstetric care among health care providers in antenatal and delivery units at Kibondo District.

1.8 Specific Objectives

1. To assess elements of working conditions among health workers in Kibondo District
2. To assess structural quality of Antenatal clinic and delivery units
3. To determine health care workload for health staff at antenatal clinics and delivery sections in Health facilities for the past One Year.
4. To determine antenatal and delivery unit outcome in the past One Year

CHAPTER TWO

LITERATURE REVIEW

2.3 Health Care Working Condition

2.3.1 Health workers Motivation

A study exploring the general influence of workplace trust over health worker performance at primary care level was undertaken in Tanzania and South Africa in 2003. The main factors identified by respondents as underlying poor health worker motivation in the public sector were. Staff shortages and low salaries, favoritism and lack of transparency in human resource management practices, limited supervision and monitoring weak disciplinary procedures, limited and rigid employment management policies, slow decision-making across the public service, and conflicting lines of accountability at district level were among the barriers of conducive working conditions (Thakildsen et al 2007).

Health workers were treated as major production tool in which financial incentives were introduced to increase production without looking to the output to be achieved.

As the health expenditure increases also the gross domestic products increases; wages costs such as salaries, bonuses, and other payments have increased from 65% to 80% of the total recurrent health budget expenditure. (Dussault et al, 2003)

Study done in Uganda assessed four categories as motivating factors which included monetary reward involvement in decision making and conviction; More than 10% had experienced demotion, less than 5% had experienced disciplinary measures and approximately 50% had been promoted more than twice in their career (Nilsen et al; 2005) . In Tanzania study done on quality aspect of maternal health showed that about two thirds of Health Workers were satisfied neither with their promotions nor their working conditions. (Urassa, 2004). Study done in Kongwa Tanzania revealed that about 77% of studied health worker had received their annual leave, while 49% received payment for their sick leave benefits and 44% had received medical services (Mwangi et al; 2008)

2.3.2 Salaries/ wages

Study done in Kongwa Tanzania did show that about 18.6 % had salaries ranging between \$2000 to \$2500 per year while 9.3 % had salaries less than \$1500 per year. (Mwangi et al; 2008). In payment satisfaction was highly associated with positive outcome of the workplace, while professional demand was negatively related to positive outcome (Warren et al; 2007). However about 43.2% of the health workers population studied in Dar es Salaam Tanzania needed increment of their salaries and allowances as part of the motivation (Ikeda; 2006)

2.3.3 Working Hours

Study done in Mpwapwa showed that long working hours has been associated with health problems such as fatigue, irritability, and back ache where about 17% had an experience of working for 50 to 100 hours per week (Mwangi et al; 2008).

2.3.4 Physical Environment

Study done in Dar es salaam Tanzania revealed that majority had received (94 %) had received their job descriptions during the time of the research; However about 34 % had job evaluated monthly while others their job was evaluated once per year (Ikeda N; 2006)

2.3.5 Workplace Security

Study done in Kongwa and Mpwapwa Tanzania showed that about 12% of the population had experienced bullying or harassment from others while, about 10% had history of physical violence from others (Mwangi et al; 2008).

2.1 Structural Variables

2.1.1 Health workers qualification

The availability of human resource for health in sufficient numbers, with adequate skills and conducive environment is needed to provide the quality Antenatal and delivery care services. Study done in the USA found that staffs employed in Health Services were qualified in their field. They were also cooperative and helpful throughout the audit process. It was observed that the staff performed admirably in managing a wide scope of services with limited resources. (Harmon et al, 2009). Also it was found that influence in balanced staffing on the technical quality of services that affects the perceived quality among users in USA.

(Dussault; 2003)

As study done in Argentina emphasized that in some areas of maternal health there was poor quality of care in Health Institutions (WHO, 2001). In Kenya it was found that health facilities had a shortage of staff and equipment where it seemed that the public had lost their trust. (Fried L; 2009). In Tanzania it was found that about 94% women were attended by qualified health worker at antenatal clinic at least once, while 37.8% delivered at public health facility(Tanzania DHS 2004-2005). In Tanzania the greatest shortage was found in among Assistant medical officers, Clinical officers, Laboratory assistants 60%, Nursing cadres 50% and Doctors 40% of the required level (Maestad et al, 2004). Study done in Tanzanian rural Districts to measure quality of care by indicators, scored 31% of what was considered optimal. The poorest results were for

history taking while 89% of febrile children were treated with antimalarials (Eriksen et. al. 2007)

2.1.2 Training

Continuous Education and professional training is essential to health worker quality services provision. A study done in Kagera, Tanzania showed that there was a limited capacity of the district to address reproductive health priorities at the facilities and community level. There was also a need to increase training on reproductive health in place where there was a shortage of qualified health personnel(makundi et al ,2005).

Training was one of the tools to push forward improvement of quality obstetric care provision in various places. So technical aspect might raise through both short and long term training. study done in Tanzania indicated that two thirds of studied health workers did not attend any training course in the past one year prior to research. The only trainings they received were three monthly supervisions by district health management team. (Urassa; 2004). In Kongwa District, Tanzania 51.2% had their training from the co workers, while 46.5% had training paid by the employer and about 11.6% their training paid by themselves.(Mwangi, (2008)

2.1.4 Availability of Drugs and Equipment

Quality of obstetric care provision can highly be affected by inavailability of supplies such as drugs and equipments like delivery kits. A study done in Kenya indicated that public sectors health facilities were lacking essential drugs, equipment and supplies due to rapid growing cities. (Fried L (2009). According to the UN report modified

definition each health facility should have all injectable drugs. "Two dispensaries had shortage of essential emergency obstetric care drugs while all rural health centers and hospitals had the drugs" (Urassa ; 2004)

2.1.5 Health Workers Attitudes toward Supervision

Study done in USA shows that health workers who have experienced job restructuring such as reforms tend to have negative attitude about their impact on patient care than those who have not (Felix; dussault; 2003). In Indonesia supervision of midwives has improvement in providing quality obstetric care. Evidence shows that before the program they had limited ability to manage obstetric complications. 90% of deliveries were taking place at home. Only 37% of deliveries were being attended by skilled personnel. In 1998-99 skilled delivery increased from 37% to 59% and caesarian section increased from 1.7% to 1.4%. Life saving intervention reduced from 1.1% to 0.7%. (Carine at al; 2001)

2.1.6 Supportive supervision

Supportive supervision was a process of promoting quality of service in the health system. This involved strengthening relationships and interaction between health staff in the health system. Focuses on identification of problems and help to optimize the allocation of resources and promote required standards in service. Teamwork, improved quality, and two way communication between health workers of different qualification were some of modalities to address in Supportive Supervision (PAHT, 2003). Organizational performance may be highly influenced by many factors such as

team work, employee involvement in decision making, communication between staff and management on issues related to disciplines (Nilsen et al, 2005)

In Uganda approximately 25% of public institutions visited by public service commissioner within one year and about 10% of public institutions were visited annually. (Guest , 1999)

2.2 Outcome Quality

2.1.3 Work Load

Study done in Quebec indicates how in the mid 1990s the pattern of professionals in both clinical and managerial was highly reduced. This led to increase in work load, disruption of performing team, and raised stress among health workers. (Quebec Government, 2000).

In Scotland the study done on workload had association between increasing staffing ratio and with lower odds of adjusted neonatal resuscitation. The direction of increasing workload suggested detrimental outcomes although the effect was very small (Tucker et al; 2003).

2.2.1 Antenatal outcomes

Study done in Kenya showed that only 32% of women who attended antenatal clinic had secondary Education or above with (Odds Ratio 1.83; 95% CI 1.06-3.15); Same study shows that women who attended at least twice at antenatal clinic were more likely

to have live births with adjusted odds ratio of 4.39; 95% CI 1.36-14.15. (Celia; et al, 2008)

2.2.2 Natal outcomes

Safe motherhood initiative program has been experiencing many challenges in measuring outcome of maternal complications. To reduce these complications different stake holders have been on the front line to reduce maternal mortality of which in Tanzania remains at 578/ 100,000 live birth.(Urassa; 2004) In Guinea implementation of refugee assistance lead to increase in caesarian section from 0.03% to 0.12% (WHO; 1997)

CHAPTER THREE

3.0 Methodology

3.1 Study Area

The study was conducted in Kibondo District council. This was one out of four Districts of Kigoma Region. It is one of the hard to reach Districts in Tanzania. It is located on the Western Border of Tanzania.

3.2 Study Design

This was Quantitative cross sectional Descriptive study which was conducted among health workers delivering Antenatal services and delivery services in Health facilities at Kibondo District Council by June 2009.

3.3 Study Population

Study population included all health workers involved in antenatal and delivery care services at Kibondo District Council. This population included health staff from District Hospital, Health Centers and Dispensaries regardless of ownership (Kothari, 2008)

3.4 Sample Size

All health workers at antenatal and delivery sections who were present at the time of study (Whole sample) were included in the study.

3.5 Sampling Technique

Kibondo District was purposefully selected to represent the hard to reach Districts in Tanzania. One District Hospital and 4 Health Centers were purposefully included in the study and 60% of all 58 Dispensaries were randomly selected and included in the study. There fore 34 Dispensaries out of 58 Dispensaries were sampled (Kielman et al, 1995)

3.6 Data Collection Instruments

Self administered questionnaire was used to collect information from health workers. In addition review of HMIS at the health facility using check list tool was done to obtain information from registers to get information on outcome quality assessment. To ensure accuracy on the process of collecting the information Research Assistants were trained on how to collect the data. Prior to actual field work the 10 instruments were pre tested in Dar es salaam using health workers at MNH to test the viability and appropriateness on capturing required information.

3.7 Data Management Procedures

Data was collected daily under the principal investigator was the overall supervisor of data collection. The tool was administered to the respondent bearing in mind they all know how to read and write. Any arising error was corrected before leaving the health facility. Proper handling of data collecting tool was the duty of principle investigator and proper coding of tool was ensured before data analysis.

3.8 Data Analysis

Data analysis was done using Epi Info version number 6. Measures of association and strength of the relationship between the independent and dependent variable was obtained using chi square test, proportion and frequency distribution

3.9 Study Limitation

Study focused only those staff found at the facility. And those in leave and traveled were not included in the study. Information bias was avoided by using research assistants in data collection and also by ensuring the providers that the information they provided was strictly confidential.

3.10 Ethical Clearance

Before executing the study, ethical approval was obtained from the research and publication committee of Muhimbili University of Health and Allied Sciences (MUHAS). In addition research permission was obtained from Kigoma Region and the Kibondo District Authorities. However, District Medical Officer was briefed on the purpose of the study before the meeting with participants.

Moreover informed consent was sought and obtained from respective participants before they participate in the study. Participants were informed about the objectives of the study and that their participation would be voluntary.

For the purpose of confidentiality, participants were anonymous and the information provided whether orally or in writing would strictly be used for research purposes only. Informed consent was obtained from each participant at the time of research.

CHAPTER FOUR

4.0 Study Results

The data collection in this study included all hospital (1) and health centers (4) and 34 randomly selected Public Dispensaries. This constituted 60% of all health facilities in Kibondo district. The study also included a sample of all health workers who were found at the health facilities either at antenatal clinic or delivery units on the day of data collection.

A total of 116 health workers who were present on the day of data collection were included in this study to assess health care working conditions and quality Obstetric care among health care providers at antenatal units and delivery units. A checklist was filled from each health facility to assess the quality outcome such as antenatal attendances, Number of deliveries, Maternal deaths, and Number of staff at antenatal and delivery units.

4.1 Health Care Working Conditions

Table 1: Distribution of health workers by levels of health facilities at Kibondo district June 2009

Health workers	Health facilities							
	Dispensary		Health Centre		Hospital		Total	
Nurses	61	89.7%	22	84.6%	13	59.1%	96	82.8%
Prescribers	7	10.3%	4	15.4%	9	40.9%	20	17.2%
Total	68	100%	26	100%	22	100%	116	100%

The distribution of health workers from each health facility is shown in table 1 below.

Most health workers were nurses 96(82.8%) while prescribers were 20(17.2%)



Table 2: Distribution of health worker's profession by their age group, at Kibondo district September, 2009.

Health worker's profession	Age group				Total (No./%)	
	20-40 Years		40-60 Years			
Nurses (Nurse ass, TN, NMW, PHN,NO)	32	33.3%	64	66.7%	96	100%
Prescriber (MO, AMO, CO)	3	15%	17	85%	20	100%
Total	35	30.2%	81	69.8%	116	100%

Majority of the study participants 81(69.8%) were found between the age group of 40 to 60 years old. More nurses (33.3%) than prescribers (15%) were in the age group 20-40.



Table 3: Percentage distribution of levels of Education by health workers profession at kibondo District by September 2009.

Category of health worker profession	Level of Education					TOTAL
	Primary Education		Secondary Education And above		Total	
	Number	%	Number	%		
Nurses	65	67.7%	31	32.3%	96	100%
Prescribers	5	25%	15	75%	20	100%
Total	70	60.4%	46	39.4%	116	100%

P Value = 0.0012, Chi square = 32.4, df = 12

Almost two thirds (60.4%) of health workers had up to primary education. Higher proportion (75%) of prescribers had more than primary education (i.e form four, six and above) compared to nurses (32.3%). The difference in education level between nurses and prescribers was statistically significant $p < 0.05$ (Table 3)

Table 4: Percentage distribution of job satisfaction by category of health workers at Kibondo district by September, 2009

Category health worker profession	Job satisfaction					
	Yes	%	No	%	Total	%
Nurse (Nurse ass., TN, PHN, NMW, NO)	87	90.6%	9	9.4%	96	100%
Prescriber (MO, AMO, CO)	17	85%	3	15%	20	100%
Total	104	89.7%	12	10.3%	116	100%

Chi square =14.38, df = 6, p-value = 0.025656

The table 4 above shows that, majority of health workers (89.7%) reported to be satisfied with their Job. Nurses were more satisfied than prescribers (90.6% Vs 85%) this difference was statistically significant ($p < 0.05$).

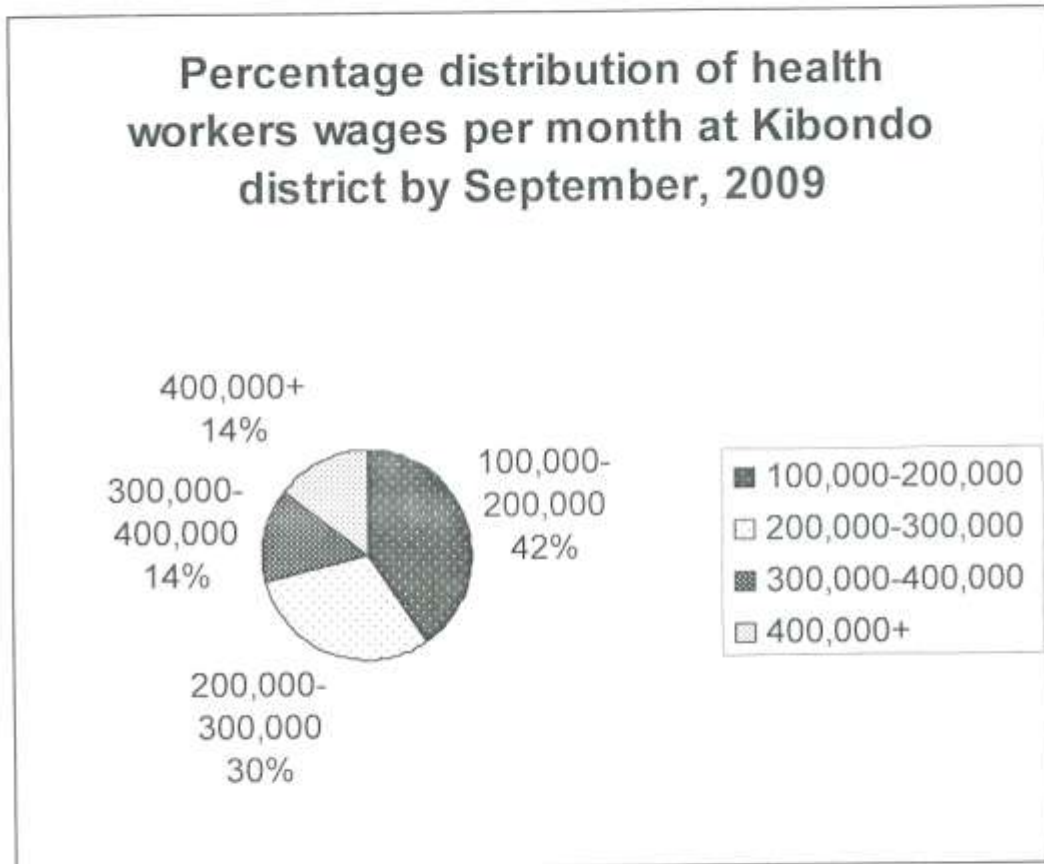
Table 5: Distribution of health workers wages by category of health workers at Kibondo district.

Wages per month	Number	Percentage
In (TShs.)		
100,000-200,000	46	41.4%
200,000-300,000	36	31.0%
300,000-400,000	17	14.7%
400,000+	17	14.7%

Table 5. shows the distribution of wages or salaries of health workers per months.

The highest proportion of health care workers delivering antenatal clinic services and delivery units was found to have salary ranges of 100,000 to 200,000 TSHS per month (41.4%). Those who were receiving salaries between 300,000- 400,000TSHS, and 400,000TSHS had least proportion (14.7%).

Figure 3: Distribution of health workers wages by category of health workers at Kibondo district by September, 2009.



In the figure 3 below shows that 42% of health workers had salary ranged between 100,000 to 200,000TSHS. While 30% receiving 200,000 to 300,000TSHS per month. The least area on the pie chart was 28% of those had a salary of 300,000 to 400,000TSHS or more 400,000 TSHS per month.

Table 6: Percentage distribution of salary satisfaction by health workers profession at Kibondo District by September 2009

Type health worker profession	Salary satisfaction					
	Yes		No		Total	
	No.	%	No.	%	No.	%
Nurses (Nurse ass., TN, PHN, NMW, NO)	29	30.2%	67	69.8%	96	100%
Prescriber (MO, AMO, CO)	2	10%	18	90%	20	100%
Total	31	26.7%	85	73.3%	116	100%

P Value = 0.52

Most workers (73.3%) were dissatisfied with their salaries. Higher proportion (90%) of prescribers (MO, AMO, CO) were more dissatisfied than nurses (70%) but the difference was not statistically significant (Table 6).

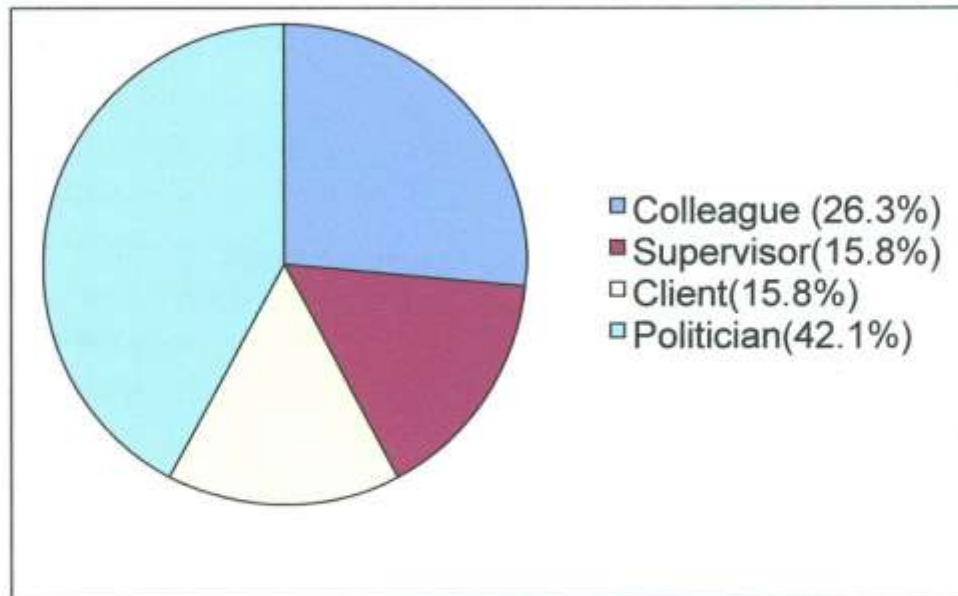
Table 7: Violence experience by the type of health workers at Kibondo district September 2009

Types of Health workers	Violence experience					
	YES		No		Total	
	Number	%	Number	%	Number	%
Nurses	11	11.5%	85	88.5%	96	100%
Prescribers	8	40%	12	60%	20	100%
Total	19	16.4%	97	83.6%	116	100%

P = 0.005, Chi square = 18.5, df = 6

Violence experienced at the place of work is reported in Table 7. About one in every six health workers (16.4%) had experienced some form of violence at a place of work of which prescribers were significantly more likely to report incidences of violence than nurses (40% and 11.5%) respectively. Chi square = 18.5, df = 6, p=0.005).

Figure;4 . Distribution source of violence among Health Workers



The figure above represents distribution of sources of violence experienced by health workers at their work place. Majority of health workers experienced violence from politicians 42.1% followed by colleagues and lastly were clients and supervisors both with same proportion of 15.8%.

4.2 Obstetric Structural Quality

Table 10. Percentage distribution of training for the past 12 by category of health workers profession at Kibondo district by September 2009

Type of Health worker profession	Training within 12 months				Total	
	YES		NO			
Nurses	80	83.3%	16	16.7%	96	100%
Prescribers	18	90%	2	10%	20	100%
Total	98	84.5%	18	15.5%	116	100%

Majority of health workers (84.5%) had undergone training within the past 12 months.

This was true for both nurses and prescribers (Table: 10)

Among the 98 health workers who had received training in the past 12 months, the sponsorship for the training was mainly coming from training organizers (50.9%) followed by their employers (43.9%). A very small proportion was self sponsored or trained for free (Table: 10)

Figure:4 Percentage distribution of mode of payment of training received by health workers at Kibondo District, September, 2009.

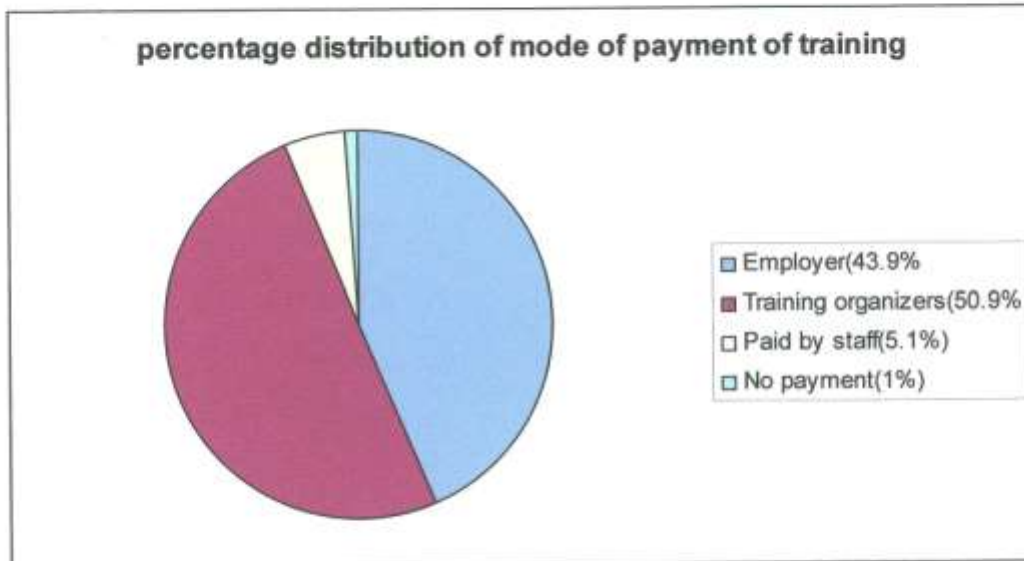


Figure: 4. above presents the source of fund for training activities conducted. Most of the training activities were sponsored by training organizers 49(50.9%).Followed by employer 43.9%.The lowest proportion was 1(1%) who attended unsponsored training.

Table 11. Percentage distribution of availability essential drugs by type of health facility at Kibondo district by 2009

Type of Health facility	drugs availability						Total	
	Rarely	Sometimes	All the time					
Dispensary	9	13.2%	7	10.3%	52	76.5%	68	100%
Health centre	7	26.9%	7	26.9%	12	46.2%	26	100%
Hospital	5	22.7%	11	50%	6	27.3%	22	100%
Total	21	18.1%	25	21.6%	70	60.3%	116	100%

P-Value = 0.0005, Chi square = 24, df = 6

Availability of essential drugs was varied in duration and by type of health facility.

Availability of drugs all the time was higher (76.5%) at dispensary level followed by health centers (46.2%) and lastly at hospital (27.3%). Availability of drugs for sometimes was highest at hospital (50%). This difference was statistically significant ($p < 0.05$) (Table 12)

Table: 11. Percentage distribution of emergency drugs by type of health facility at Kibondo district by September, 2009.

Health facility	Emergency drugs availability							
	Rarely		Sometimes		All the time		Total	
Dispensary	44	64.7%	14	20.6%	10	14.7%	68	100%
Health centre	18	69.2%	1	3.9%	7	26.9%	26	100%
Hospital	7	31.8%	12	54.6%	3	13.6%	22	100%
Total	69	59.5%	27	23.3%	20	17.2%	116	100%

P = 0.0000

Availability of emergency drugs at all the facilities all the time was only (17.2%) , followed by periodic availability i.e sometimes (23.3%) and while most of the time the emergency drugs were rarely available (59.5%). Availability of emergency drugs all the times was higher at health centre level (26.9%). Rarely availability of these emergency drugs was lower at hospital (31.8%) level (Table 13) This difference was statistically significant ($p < 0.05$)

Table: 12. Percentage distribution of medical equipment by type of health facilities at Kibondo district by September, 2009

Health facility	Medical equipments availability						Total	Total
	Rarely	Sometimes	All the time					
Dispensary	18	26.5%	9	13.2%	41	60.3%	68	100%
Health centre	16	61.5%	2	7.7%	8	30.8%	26	100%
Hospital	3	13.6%	11	50%	8	36.4%	22	100%
Total	37	31.9%	22	19%	57	49.1%	116	100%

P = 0.0001

Generally the availability of medical equipment all the time in all the health facilities was almost 50% with dispensary level having higher proportion (60.3%) while health centers having the lowest (30.8%) . Health centre had higher proportion (61.5%) of rarely availability of medical equipment. The difference in availability of medical equipment in different types of health facility was statistically significant ($p < 0.05$) (Table 14)

Table: 13. Percentage distribution of emergency medical equipment by type of health facility at Kibondo district by September, 2009

Health facility	Emergency medical equipments availability							Total
	Rarely	Sometimes	All the time					
Dispensary	55	80.9%	7	10.3%	6	8.8%	68	100%
Health centre	17	65.4%	6	23%	3	11.5%	26	100%
Hospital	4	18.2%	12	54.6%	6	27.3%	22	100%
Total	76	65.5%	25	21.6	15	12.9%	116	100%

P – Value = 0.0000

In figure 15 above dispensaries appeared to be rarely supplied with emergency medical equipments 55(80.9%) while District hospital had small proportion 4(18.2%). Emergency medical equipments were sometimes available 12(54.6%) compared to Health centers and Dispensaries 7(10.3%). District hospital was highly supplied with emergency medical equipments all the time compared with Health centers and Dispensaries 6(8.8%). The study shows that availability of emergency equipments at health facilities was statistically significant ($P < 0.05$)

4.3 Health Workers Work Load

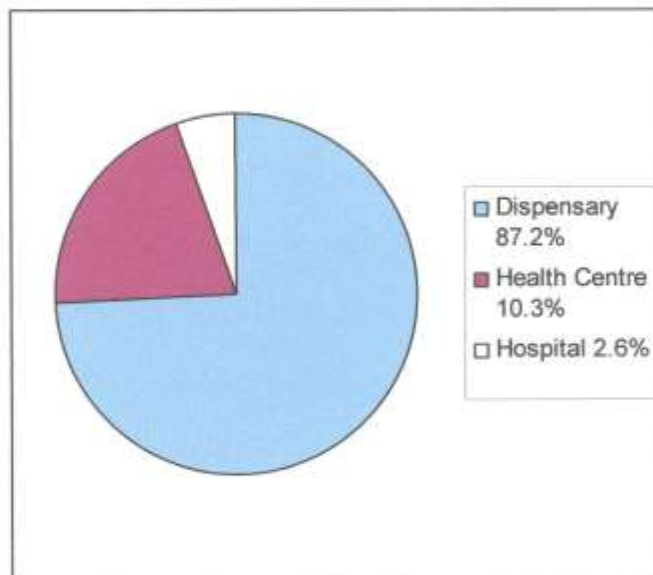
Table: 14. Distribution of Perceived workload by category of health workers in Kibondo district, September, 2009.

Category of Health worker	Perceived workload					
	Light		Heavy		Total	
Nurses (Nurse ass.,TN, NMW, NO, PHN)	21	21.8%	75	78.2%	96	100%
Prescribers (MO,AMO,CO)	7	35%	13	65%	20	100%
Total	28	24.1%	88	75.9%	116	100%

P -Value = 0.00000 Chi square = 53.6 df = 18

About three quarters (75.9%) of interviewed health workers reported that they had heavy workload. Higher proportion of nurses (78.2%) reported to have heavy workload compared to prescribers (65%). The difference was statistically significant ($p < 0.05$)

Figure 5: Frequency distribution of types of health facilities at Kibondo District



The figure 17 below shows that 34(87.2%) were Dispensaries, 4(10.3%) were Health centers and 1(2.6%) District hospital.

4.4 Obstetric Quality Outcomes

Assessment of quality obstetric outcomes at antenatal unit and delivery unit show that out of 7747 clients who attended as first antenatal attendance 5655(73%) visited Dispensaries followed by Health centers and the least proportion was from Hospital 844(10.9%).

Out of 15,626 clients who attended antenatal clinic majority 11,089(71%) were from Dispensary level while the least proportion was from the Health centers 2007(12.8%).

Regarding health workers, out of 67 health workers from all the facilities majority 52(77.6%) were from Dispensaries, 8(11.9%) from district hospital and 7(10.5%) were from the Health centers.

Looking at number of referred visits per year, it was found that among 5656 total visits referred 4786(84.6%) were from dispensary level and District hospital had small proportion of those who were referred to special attention during their deliveries (Table18).

Table: 18. Distribution of facility outcomes by type of health facilities at Kibondo district by September, 2009.

Descriptions	Number and percentages(%)							
	Dispensary		H/Centers		Hospital		Total	
	(mean)		(mean)					
Number of 1st visit year	5655 (166)	73%	1248 (312)	16.1%	844	10.9%	7747	100%
Number of antenatal attendance per year	11,089 (326)	71%	2007 (501)	12.8%	2532	16.2%	15,628	100%
Number of health workers at antenatal clinic	52(2)	77.6 %	7(2)	12.8%	8	11.9%	67	100%
Number of visits Referred per year	4786 (140)	84.6 %	595 (149)	10.5%	275	4.9%	5656	100%

Almost two thirds of deliveries per day 52(62%) took place at the Dispensary level while few deliveries were from the hospital 15(18.1%).

Majority of deliveries per year were from the Dispensary 5036(58.9%) followed by District hospital 2050(24%) and Health centers 1465(17.1%) had least number deliveries.

Delivery units appeared to critical shortage of health workers at all levels while Dispensaries had 57(59.4%) and hospital had 13(13.5%) less than other health facilities.

Out of 12 maternal mortality took place in District, majority happened at the District hospital 11(91.7%). Dispensaries included in the study sample had not experienced any maternal death for the past year.

In exploring the number of health workers at health facility it was found that there were Total of 311 health workers and out of these 189(60.8%) while Dispensaries seemed to be have high shortage of staff compared to other facilities.

**Table: 19. Delivery unit check list of health facility at
Kibondo district by September, 2009**

Description	Number and percentages(%)							
	Dispensary (mean)		H/Centers (mean)		Hospital		Total	
Number of deliveries								
Per day	52 (2)	62%	16(4)	19.3%	15	18.1%	83	100%
Number of deliveries								
per year	5036 (148)	58.9%	1465	17.1%	2050	24.0%	8551	100%
Number of health								
workers at delivery unit	57(2)	59.4%	26(7)	27.1%	13	13.5%	96	100%
Number of maternal								
death per year	0(0)	0%	1(0)	8.3%	11	91.7%	12	100%
Number of facility								
health workers	59(2)	18%	63(16)	20.35	189	60.8%	311	100%

Almost all health facilities had all the basic supplies, drugs and medical equipments according their level or type of health facility. Hydrocortisone drugs, caesarian section equipments, introduction of family planning, and family planning devices were not present at dispensary level.

Table: 20. Drug and equipments check list at health facility at Kibondo district by September, 2009

	Number of scores			
	Disp.	H/Centre	Hosp.	Total
Drug availability				
Family planning drugs	34	4	1	39
Anti malaria for prophylaxis	34	4	1	39
Adrenaline	34	4	1	39
Hydrocortisone	0	4	1	39
Injectable antibiotics	34	4	1	39
Gloves	34	4	1	39
Syringes	34	4	1	39
Cotton wool	34	4	1	39
Gausses	34	4	1	39
Delivery kits	34	4	1	39
Caesarean section equipments	0	2	1	3
Weighing scale	34	4	1	39
Foetascopes	34	4	1	39
Introducer(family planning)	0	4	1	5
Family planning devices	0	4	1	5

CHAPTER FIVE

5.0 Discussion

Health care working conditions is one of the positive environments which every institution struggle to maintain in the health care system. When the working condition is well addressed the quality health services can be achieved. This study aimed at addressing the health care working conditions and quality obstetric care among health care providers at antenatal and delivery units at Kibondo district, Kigoma region Tanzania. In health care working conditions the main components were wages or income of health care providers, violence at working place, health and safety and working hours.

The main findings of this study can be summarized as follows; about 73.7% of all respondent were dissatisfied with their salaries per month, also more than 75.9% of all health workers who were studied reported to be heavily overloaded, and the proportion of health workers experienced violence at their working place was about 16.4%.

Structural quality was fairly supported by difference of variables of availability of drugs, emergency drugs, medical equipments and emergency medical equipments at the health facility.

5.1.1 Health care working conditions

This study has revealed that, although majority of health workers (89.7%) were satisfied with their job, only a quarter 26.7% were satisfied with their salary. The fact that about

three quarters 73.7% of all respondent were not satisfied with their salary earned per month compared to 43.2% in Dar es salaam (Ikeda., 2006), indicates that need for adjusted salary was of greater importance in this rural area as compared to Dar es Salaam.

This study revealed that two fifth (41.4%) of the respondent had salary between 100,000 to 200,000TSHS per month. Similar observation has been reported in Kongwa and Mpwapwa districts where 55% of respondent had salary of 162,500USD per month (Mwangi, 2008).

Over 90.6% of health workers who were studied were satisfied with their job despite of being paid very low salary. These results were contrary to the results obtained from Dar es salaam where 63% of respondents were dissatisfied with their job. Similar results were obtained by

Study done Muhondwa at Muhimbili National hospital. (Muhondwa et al, 2004).

About 16.4% of all respondents had experience violence at the place of work. About 42.1% were from politicians. This result concurs with the study done in Dodoma where 12% had experience of bullying or harassment while 10% had history of physical violence from others (Mwangi 2004).

5.1.2 Obstetric structural quality

The availability of human resource for health in sufficient number, adequate skills and conducive environment is needed to provide quality antenatal and delivery care services. In this study more than 82.8% were Nurses and 17.2% were prescribers. There

were 20 (17.2%) Prescribers in 39 health facilities. This indicated that 22 (56%) of the facilities had no a prescriber. Study done in Tanzania showed similar results where staff shortage was noticed among Assistant medical officers, Laboratory assistants (60%), Nursing cadre 50%, and Doctors 40% of the required level (Maestad et al, 2003).

The study shows that among 39 health facilities studied each health facility had average of 2 staff at both antenatal and delivery unit. Similar results were found in Nyanza province Kenya where it was found that health facilities to have shortage of staff and equipments (Fried, 2004). Also study done Argentina emphasized that to achieve quality services rigorous evaluation of staffing is highly needed (WHO, 2001)

Study revealed that about 84.5% had attended the training 12 months of their initial training. However different results were obtained in study done in Tanzania where about two third of respondent had not received training for the past One year prior to this investigation (Urassa, 2004). Probably a one year period is not enough to conclude a deficiency in continue education for the health staff. This study also shows the training attended was driven by training organizers and not the employers. About half (50.6%) of health workers were sponsored by training organizers and 43.9% by employer. Similar results were obtained from the study done at Kongwa district Tanzania where 51.2% had their training from Co workers 46.5% had training paid by the employer (Mwangi, 2008).

Availability of drugs at the health facility is the cornerstone of achieving quality obstetric care. This study found that generally health facilities were supplied with drugs all the time with proportion of about 60% similar results were obtained in study done in Rufiji district, Tanzania (Urassa, 2004). Health Centers and Hospitals had drug supply and only two dispensaries had shortage of drugs (Urassa, 2004). This was contrary to results obtained in Kenya where public health facilities were lacking drugs and supplies (Fried, 2004).

To achieve quality obstetric services integration of various effort is highly needed. For this case availability of medical equipments and emergency medical equipments has become one of the important initiatives to attain required standard of care. About 49.1% had supply all the time, 31.9% had rare supply and the least 19% was those sometimes with shortage. There was a significant variation on availability of medical equipment in different type of health facilities in Kibondo District ($P < 0.000$) and similar results was also reported at Temeke, Ilala and Kinondoni districts in Tanzania. Where 79.9% Temeke staff reported to have rare or sometimes supply of delivery equipments, (Ikeda, 2004). However the reasons for such shortage were not ascertained.

5.1.3 Staff workload

On exploring the health workers perception on workload, it was found that about 75.9% thought that they had heavy workload compared with 24.1% who had perceived to have light load. These results concurred with study done in Dar es Salaam, which revealed

that staff were complaining to be highly overloaded and also were assigned unrelated works (Ikeda, 2004; Manongi, 2006). Also the same findings were seen in Quebec, Canada in 1990s where the pattern in clinical and managerial aspect were highly reduced and caused increase in workload, disruption of performing teams, and raised stress among health workers.(Gouvernement du Quebec, 2000). And the same results were obtained in Scotland where workload had detrimental effect on outcome indicator like neonatal resuscitation.(Tucker et al, 2003). So this result contemporarily showed how the workload affects both health care working conditions and quality obstetric care.

5.1.4 Quality Obstetric Outcomes

A quality antenatal clinic was assessed through health facility checklist. This had different variables which were assessed. The major components were antenatal clinic unit outputs. This study revealed that Dispensaries and Health Centers had mean antenatal first visits of 166 and 312 visits attended respectively.

The higher result was also reported from demographic health survey in which 94% of women attended at least once and 62% attended four times in whole pregnancy (DHS, 2004, Mganga, 2006).

This study revealed that health facilities were highly understaffed, there were about 67 health workers at antenatal unit in 39 health facilities which were studied with average of 2 staff per each clinic. However this makes outcome quality achievement to be difficultly attained. This also explains the high maternal mortality observed in the District where this study found that about 140/100,000 live birth maternal mortality

occurred in previous year. This was also observed in other studies that staff shortage made poor routine recording of blood pressure measurement (Urassa et al, 2004; Carrol et al, 2001b).

This study found that out of 15,628 antenatal visits 5656/15,628(36.2%) were referred to high health facility. This result was slightly higher to Mganga's study which found that about 12.8% of respondents had complications related to their pregnancy.(Mbaga, 2006). It was also consistent to other studies where four of ten pregnant or postpartum women expected to experience pregnancy related complication (WHO, 2004).

During the assessment this study revealed that the maternal mortality from the 39 health facilities was 140/100,000 live birth for the past year, this figure seemed to be higher than that of Kibondo District which was 104/100,000 live birth for the year 2007, and more than a quarter of Tanzania MMR of 578/100,000 live births from Tanzania demographic health survey (DHS, 2004).

5.2 Conclusion

Health care working conditions at Kibondo district was not conducive due reasons that majority of respondents were dissatisfied with their salary earned per month, health workers perception on workload was very heavy and they had violence at the place of work.

Continuous education for staff, availability of drugs, equipment and supply in most health facilities was satisfactory.

Although there was client attending antenatal clinic still number of maternal deaths was alarmingly very high. 140/100,000 live birth.

Staffing level at health facilities was extremely low with average of 2 personnel per health facility, so staff recruitment is highly needed.

5.3 Recommendations

There is need to address improvement of health care working conditions. This includes improving salary per month, maintaining opportunity to on job training and increasing interpersonal relationship to reduce violence at place of work.

More emphasis should be put to training support and make it equally distributed. Both essential and emergency drugs supply should be maintained. Both medical equipments and emergency equipments should be timely supplied. There is need to study on other components of quality obstetric care since this study was not exhaustive.

Immediate attention has to be put on staff recruitment and hiring to reduce the existing workload.

More studies are needed to explore on workload, quality of care.

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