Original Research Article

Midwifery Workload and Its Effects on Quality Client Care: A Case Study at the Central Region of Ghana

ABSTRACT

Introduction

The goal of the project was to analyze and explore the midwifery workload and its effects on clients' quality care in some selected districts in Central Region.

Methods

Quantitative cross-sectional and exploratory study designs were employed using 388 participants for the quantitative aspect while 12 participants for the qualitative. The target population was all midwives working in the four selected districts. Online structured questionnaire and in-depth interview were the main data collection tools for the study. Data wereanalysed with SPSS version 23.0. Descriptive and regression with Pearson Chi square and p-value were the main statistical tools for the data analysis.

Results

The daily working hours for the midwives was 7 hours and 6 days per week. The workload for the midwives was higher than normal since the average patient-midwife ration for the district was 7.2:1 while bed-midwife ratio was 5:1. Quality of care was low since most of the indicators were below average (effectiveness of care =32.4%, safety of care =45.3%, efficient use of medical logistics =47.6% and timeliness of care =36.0%). However, maternal and infant mortality rates = 97.6% with average score of 54.8%.The qualitative findings supported the quantitative results.

Conclusions

There was high midwifery workload in the districts as patient-midwife ratio was above the standard of 4:1 which affected quality care negatively. More midwives should be posted to the districts to augment the staff strength of midwives to improve health care at the district level of the Central Region.

Keyword: Midwifery, Workload, Effects, Quality Care, Client, and Central Region of Ghana,

1.0INTRODUCTION

1.1 Background of the study

Pregnancy-related deathsareexcessively high worldwide, particularly in low and middle-income countries with resource constraints (WHO, 2019). In 2017, about 295,000 mothersdiedfrom avoidablepregnancy and child delivery complicationsof which around 94% occurred in resource-limited settings(WHO, 2019). During the same year in 2017, maternal deaths in Sub-Saharan Africa (SSA) and Southern Asia accounted for over 86% of the global estimate, translating to 254,000 deaths (WHO, 2019). Approximately two-thirds of the maternal deaths (196,000) occurred in SSA and approximately one-fifth (58,000) occurred in Southern Asia(WHO, 2019). In spite of about 40% drop in maternal mortality rate in SSAbetween 2000 and 2018, the current numbers of pregnancy and child birth-related deaths are high (WHO, 2019). In Ghana, maternal deaths reduced from 760per 100,000 (1%) live births to 319per100,000 (0.3%) live births from 1990 to 2015, respectively(more than half) and a further slight decrease of to 308 (0.2%) in 2017 (WHO, 2017).

Midwives, who have been an integral part of African medicine for centuries, are the front-line caregivers and backbone of maternal and child health care on the continent(Colla *et al.,* 2005). They support women through pregnancy and childbirth, providing antenatal, intrapartum and post-natal care, and family planning services, as well as breast and cervical cancer screenings (Aiken *et al.*,2010). In emergencies, they can also perform basic emergency obstetric care (WHO, 2022). Poor management of pregnancy-related complications has serious implications for the Sustainable Development Goal target of reducing the global maternal mortality ratio to less than 70 per 100 000 live deaths before 2030 (ICM, 2022). The contributions that midwives have to make towards achieving the Sustainable Development Goals and Universal Health Coverage in Africa cannot be overestimated(Burchinal, 2018). Midwives have been strengthening Primary Health Care for decades, acting as a critical link between women and the health system, and making pregnancy and childbirth safer and more secure (WHO, 2022).

In poor resource settings, maternal mortalities are usually associated withpoverty, poor transport systems including emergency services and above all lack of skilled midwives to manage pregnant women especially in the rural areas(Craymah *et al.,* 2017).Fully integrated into the health care system, and with the necessary enabling support, midwives have the capacity to provide a wide range of clinical interventions, so contributing to broader health goalsparticularly

in the low income countries. These include advancing Primary Health Care, addressing sexual and reproductive rights, promoting self-care interventions during pregnancy, and proper labour management according to the 2022 International Day of Midwives (WHO, 2022). The African Region's tragic record of maternal and infant deaths demands urgent interventions to expand the coverage of emergency obstetric and newborn services, along with a revision of the scope of practice to allow more task-sharing and task-shifting to mitigate the shortage of midwives (Okoroafor*et al*,2021).

The shortage of health workers iscompounded by inequitable distribution of those available and increased out migration ofthe highly skilled health workers (WHO, 2021). Thoseavailable are usually based in urban areas, making access to health services difficult for rural andunderserved populations (Weissman*et al.*,2007). Thus, the available healthworkers, particularly in rural areas, are facing highworkload pressure with often very difficult workingconditions (WHO, 2021).

As a result of increased midwives' workload, Ghana could not achieve the millennium development goal 5 which aimed at improving maternal health and reducing maternal and pregnancy-related deaths (WHO, 2019). According to the 2021 State of the World's Midwifery report, by the WHO, the International Confederation of Midwives (ICM) and the United Nations Population Fund (UNFPA) (2022), the global shortage of midwives stands at nine hundred thousand (900 000), and is particularly acute in Africa. With estimates that 75% of essential needs for maternal and reproductive health care are met by midwives, it is concerning that the comparative figure for the WHO African Region is only 41% (WHO, 2022). With adequate investment in midwifery, 4.3 million lives could be saved annually by 2035 (WHO, 2022). This has particular relevance for the WHO African Region, which records about 196 000 maternal deaths each year, along with the deaths of one million babies younger than one month. Unfortunately, if current trends persist, only 300 000 midwifery jobs are likely to be created in low-income countries, with the shortage of midwives set to increase to 1 million by 2030 (WHO, ICM, 2022).

The 2006 World Health Report classified Ghana among 36 countries in sub-Saharan Africa facing Human Resources for Health (HRH) crisis which became a clarion call for concerted efforts to address a myriad of health workforce challenges notably, inadequate production, excessive out-migration and low wages among others (Boniol*et al,*2019). Midwives experience myriad challenges in providing sufficient women-centred care in rural Ghana (Afaya*et al.*,

2017). To overcome these challenges, measures such as providing adequate beds and physical space, making more equipment available, and increasing midwifery staff strength to reduce individual workload, coupled with motivation from facility managers, is needed to improve pregnancy and labour related outcomes (WHO, 2022: Kvist*et al.*, 2011).

The upsurge in workload, especially among midwivesin Central region remains a key constraint to scalingup quality health services in the region (Asamani *et al*., 2019). Central region has Women within their Fertility Age (WIFA) population of Twenty-five Thousand Four Hundred and thirteen (25,413) with 129 (%) maternalmortalities in 2018 (Asamani *et al*., 2019).According a study published in 2019, increased midwifery workload in the Central region has brought about high maternal mortality rate (Asamani *et al*., 2019: Cai *et al*,2012).

Incorporating the National Health Insurance Scheme into the facility care deliverystructures in Ghana where potential clients pay premiums and subsequently access health care when they need it, the hospitals have reported an increase in the number of clients seeking medical care(Allen et al, 2010). For instance, in 2006 the total number of active registered members on the National Health Insurance scheme in Ghana was two million, four hundred and ninety-seven (2,422,097). This number increased to just over eleven million (11,132,981) in 2009 (Afaya *et al*., 2017:Bowers, 2015). It has further increased from 10.8 million in 2018 to over 12 million in 2019 (http://www.nhis.gov.gh/News/nhis-active-membership-soars-5282). This has subsequently put a lot of pressure on the medical staff to care for the increasing number of patients (McDowell, 2009). The clients have also demanded value for money that is, insisting that they get quality of care. This has further increased the workload of midwives. Therefore the study answered the research question: what is the midwifery workload and its effects on quality client care in the Central Region?

According to the Central Region Annual Health Report 2018, maternal mortality stood at 132 per 100,000 live births. It was revealed during the maternal auditing, midwives attributed the high maternal deaths in the region to the high workload in the various health facilities (McCormick, 2018). The Central Regional Health Directorate over the years has tried to bridge the gap between the national and regional maternal and under five mortality rates. However, most of the midwives complain of increase workload especially in the rural communities where health facilities are not enough to meet the health needs of the clients (McCormick, 2018). This studytherefore sought to assess the midwifery workload and its effects on quality clients care in

the Central Region ofGhana. It is hoped that the findings would inform the Regional Health Directorate and facilities to re-strategize to solve the high workload among midwives that contribute to poor health care of clients. The findings of this study would help policy makers revise their policies to address midwifery workload in the region. This research would complement the existing studies as reference documents by policy makers such as the Ministry of Health and the Nurses and Midwives Council as to whether or not to increase the enrolment of midwives in the region.

2.0 METHODS

2.1 Study area

The study was conducted in seven health facilities of four Municipalities in the Central region of Ghana. The region has an estimated area of 9,826 square kilometers and approximately 6.6% of Ghana.The Central region is bounded by the Gulf of Guinea to the south, the western region to the west, the Greater Accra region to the east the Ashantiregion to the north and the Eastern region to north east.Thepopulation of Central Region was estimated to be 2,521,118 in 2017, a population density of about 162 inhabitants per square kilometer with an annual population growth rate of 2.1. Nevertheless, about 63% of the area is agricultural (RHD, Annual report, 2019).In Ghana, health delivery under the orthodox system exists up to Level C under the primary health care system, with referral services rendered by the Regional, Quasi and Teaching Hospitals (Robert *et al.,*2018). Each district capital has at least one government-owned hospital with one or more competent medical doctors, nurses, pharmacists, laboratory technicians, auxiliary nurses, and other support staff. All cases are handled by district hospitals, with the exception of specialized care, which is sent to regional tertiary institutions. In the sub-districts, there are also a number of health centers, most of which are staffed by a medical assistant or a nurse. In the district and sub-district capitals, there are also private clinics and chemical shops/pharmacies (Danso-Appiah *et al.,*2010).

2.2 Study population

The study population was made up of all categories of midwives irrespective of their grades working in the Central Region (Government, CHAG and Private Health facilities. Accessible population was all midwives in the four randomly selected municipalities (TwifoHeman Lower

Denkyira, Mfanstiman, Upper Denkyira East and West) in the region. The four municipalities were randomly selected for the study.All the midwives in the four selected municipalities were included in the study.Midwives who were on their annual or study leave and other official assignments and therefore not available at the time of the data taking, were not included. Moreover, midwives who did not agree to participate in this research were excluded.

2.3Study design

The study employed mixed method (both quantitative and qualitative methods). Cross-sectional survey designwas used to determine the effects of workload on quality client care.The descriptive cross-sectional survey looks at current challenges, dominant activities, perceptions and behaviors, including ongoing processes and evolving patterns. The cross-sectional form of survey design deals with concerns about what happens in a situation with regard to factors or circumstances. Thedesign of descriptive surveys is a tool used by researchers to ask respondents questions about the existence of problems at a certain point in time. In this analysis, samples are chosen to represent the entire population and inferences made for the entire population and occur in a few days to weeks. The qualitative design involved case study which solicited the views of participants on workload and its effects on client care. Bracketing was observed by first stating the researcher's features that could have influenced the research questions, approach, methods, results and transferability. The researcher's characteristics included personal attributes, qualification/experience, relationship with participants, expectations and or presuppositions. These were done to prevent possible bias in the study.

2.4Sample size determination for the quantitative component

To get asuitable sample size for the study, Yamane's (1967) statistical formula was used for the determination of the sample size for this study as follows:

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

n= the required sample size

N= known population size

1= constant

e= standard error (0.05)

With the known population size of 3257 midwives in the region, the minimum sample size for the study was calculated at 356. The 10% non-response rate wasincluded to the smallest sample size to make it 392.The actual sample size was therefore 392. Also,Purposive sampling technique was used to sample midwife managers, doctors and bed side midwives from the four selected districts due to their experiences in the study area. To this end, 12 participants (four midwife managers, four doctors and four bed-side midwives) were used for the qualitative aspect of the study.

2.5Sampling procedure

Stratified, simple random and purposive sampling techniques were used. Stratified sampling method determined the level of respondents from each municipality. Based on the required sample size (392) the number of respondents from each stratum (district) was proportionately calculated using the formula: A/B * C, where A' was the total number of midwives in the municipality, B'= the total number of midwives in the four (4) selected municipality and C'= the determined sample size. Sample size for each municipalitywas calculated as follows:TwifoHeman Lower Denkyira; 187/591*392= 124, Mfantsiman; 190/591*392= 126, Upper Denkyira East; 97/591*392= 64 and Upper Denkyira West; 117/591*392= 78. The sampling frame was created by listing all midwives (Public, CHAG and Private) after obtaining lists from their respective District Health Directorates and facilities.The lottery method wasused to select the respondents from each municipality.This was done by writing the assigned numbers of the elements on slips of paper. The papers were folded, put in a bowl and shuffled. The papers were then picked randomly with non-replacement method until the sample size of 392 was met.

2.6Variables of the study

The study variables were grouped into independent and dependent variables. The independent variables were the facility and client care factors which include: number of beds, number of midwives on duty, shift of midwife, number of patients, hours on duty and hours on off duty. Client care factors included mortality, readmission and safety of care.Others included effectiveness of care, timeliness of care, patient experience and efficient use of medical logistics. On the other hand, quality of client care was the main dependent variable for the study.

2.7Quantitative data collection tools and techniques

Structured questionnaireand interview were the main tools for the collection of data in this study.COVID-19 protocols were observed during the data collection to prevent the spread of the disease. The questionnaire consisted of three sections: Personal and general information on respondents and staffing in the unit, workload at a shift was measured using a validated Workload Indicators of Staffing Need (WISN) tool and data on quality of clients care were collected using a validated Center for Medical Services (CMS) quality assessment tools. The questionnaire and the interview guide were given to supervisor and experts for assessment before using them for the actual data collection.

2.8Qualitative data collection procedure

The interview guide with seventeen (17) items was presented to reflect the various study objectives. This was administered to the midwife managers (matrons), doctorsand some bedside midwives in the four selected districts and responses written down. Data collection occurred until saturation of responses. This was achieved when respondents started giving similar responses. In all, fifteen participants were used for the qualitative data collection. Data collection occurred daily until the entire fifteen participants were interviewed. Triangulation with the quantitative data was done to determine any deviation of data.Secondary data from the various health facilities were assessed to compliment the primary data to verify the response from the participants. Social distancing, wearing of nose masks, proper hand washing and application of hand sanitizer were observed during the data collection to prevent the spread of COVID-19.

2.9Pre-testing

At the TwifoPraso Government Hospital in TwifoAtimokwa District, Central Region, pre-testing of the research data collection instruments took place. The pre-test facility was situated outside the study area, but in terms of personnel, facilities given to clients and the configuration of the wards, it had similar characteristics. The pre-testing helped classify certain difficulties that were linked to the understanding of the respondents. The researcher pre-tested the questionnaire on 30 midwives and interviewed one respondent each for the qualitative aspect to check for reliability of the instruments. The Cronbach Alpha co-efficient was calculated and yielded 0.867 making the research instrument valid and reliable.

2.10Data management and analysis

The quantitative data werecoded, cleaned and keyed into SPSS version 23.0 for analysis. The WISN formula was used to measure the midwifery workload while all categorical variables for quality of clients care were computed into percentages. Bivariate analysis was conducted to assess the relation between the workload of midwifery and the quality of patients' service using a 95 percent confidence interval and alpha= 0.05 for p-values. In order to enter any oversight data, incomplete data were resolved by referring to the primary data. Any information that was actually absent from the primary data was omitted. The investigator made sure respondents completed all items on the questionnaire before submission to minimize missing data.

The midwifery daily workload was calculated using the formula AWT=A-(B+C+D+E) where AWT=Available working time: A =number of possible working days in a year, B =number of days off for public holidays in a year, C =number of days off for annual leave in a year, D =number of days off due to sick leave in a year and E =number of days off due to other leave, such as training, etc., in a year.Patient/midwife ratio was calculated by dividing the number of patient on the ward by the number of midwives on duty whilst midwife deficit was attained by subtracting the WISN standard (4:1) from the observed. Negative integers signified midwife deficit whilst positive integers showed surplus midwives in the facility.

Center for Medical Servicesformula was adapted for the calculation of the quality client care. In all, seven main indicators with average of two sub-indicators were assessed. All indicators were assessed separately with high quality of care been 100%. After individual calculations of the indicators, an average score was derived by adding the 'Yes' scores and dividing by seven that gave the average score in percentage for quality care in the region.

The data collected were made available to members of the research team (principal investigator and supervisor). Data collected through recordings and field notes were coded to ensure anonymity and protect the privacy of respondents. The researcher kept records of data, time and place of interview. Participants were identified by pseudonyms which were written in the files kept for every participant. The recorded tapes, transcribed data, field notes and diaries were kept in a cabinet under lock and key accessible to only the researcher. The audio tape was kept on hard disc to avoid data loss.

2.11Qualitative data analysis

Discussions from the interviews were analyzed manually by the researcher and the results obtained were used to substantiate the study's objectives. Transcription and interpretations were made on the main and subthemes that emerged from the interview. Presentation of results was strictly based on the findings and the objectives of the study. Direct quotes and text excerpts were used to substantiate the main analytic findings.

3.0 RESULTS

This chapter presentsresults of data analysis in SPSS. The results are presented according to the objectives of the study. Out of 392 sample size, 388 questionnaires were retrieved giving a 98.9% response rate.

3.1 Socio-demographic characteristics of respondents

From table 1, most of the midwives242(62.4%) were within the age range of 20-29 while26(6.7%) were within 40-49 age range. While238(61.3%) of the respondents were single,7(1.8%) were divorced. An overwhelming majority of the respondents 305(78.6%) were Diplomaholders with 34(8.8%) being Post-Basic Midwives.The majority of the participants247(63.7%) were Christians as against 141(36.3%) of the participants who were Muslims. Most of the midwives342(88.1%) had been midwives for 1-3 years while 13(3.4%) had worked for 4-10 years. Majority of the respondents321(82.7%) were Staff Midwives while27(7.0%) were Senior Midwife Officers.

3.2 Determining daily workload of midwives

Table2 shows the daily workload for midwives in the four selected districts in the Central Region. The WISN formula AWT=A-(B+C+D+E) was used to determine the daily workload of midwives. The average workload in hours for midwives was 7 hours daily for 6 days. In effect, the participants worked 7 hours a day, 1743 hours a year and 249 days annually.

Table 1:Socio-demographic characteristics of respondents

Variables	Frequency, n=388	Percent

Age range of respondents		
20-29yrs	242	62.4
30-39yrs	120	30.9
40-49	26	6.7
Marital status		
Married	123	31.7
Single	238	61.3
Widowed	20	5.2
Divorce	7	1.8
Academic qualification		
Degree	49	12.6
Diploma	305	78.6
Post-Basic Midwife	34	8.8
Religion		
Christian	247	63.7
Muslims	141	36.3
Number of years as a midwife		
1-3yrs	342	88.1
4-10yrs	13	3.4
11-15yrs	33	8.5
Rank of respondents		
Staff Midwife	321	82.7
Midwife Officer	40	10.3
Senior Midwife Officer	27	7.0

Source: Authors' field work, 2022

Table2:Determining daily workload of midwives

Staff category	Weeks per year	Working days per week	Possible working days per year	Days absent	Actual working days per year	Working hours per day
Midwife	52	6	312(52*6)	Public holidays=13 Annual leave=36 Sick leave=7 Other leave=7 Total=63	AWT=A-(B+C+D+E) 312-(13+36+7+7) =249	AWT=A-(B+C+D+E)*F =249*7=1743

Source: Authors' field work, 2022

AWT=Available Working Time

A =number of possible working days in a year

B =number of days off for public holidays in a year

C =number of days off for annual leave in a year

D =number of days off due to sick leave in a year

E =number of days off due to other leave, such as training, etc., in a year

F= average number of working hours in one day

3.3 Determining midwives' workload ratio

Table 3 depicts the midwives' workload ratio in the four districts comparing with the WISN gold standard. The average number of midwives for particular shift in district 'A' was 4 with 41 clients on the ward. Patient/midwife ratio for district 'A' was 10:1 with a staff deficit of 6 per WISN gold standard. District 'B' also had patient/midwife ratio of 3:1 with 0.3 as surplus staff. Also, district 'C' had patient/midwife ratio of 9:1 creating a shortage of 6 midwives. District 'D' also had ratio of 5:1 with a shortage of negative one (-1). The total average of patient/midwife ratio for the four districts stood at 7.2:1 with -2.6 shortage of midwives

Table 3: Midwives' workload ratio in some districts of Central Region using WISN as standard

Health Facilities	Midwives on duty	Number of patients	Patient per Midwife ratio	% ratio workload	Midwife per bed (ratio)	Midwife deficit	Workforce problem	Workload pressure per WISN tool
District A								
Facility 1	6	65	11:1	9 High	28 (5:1)	-10	Shortage	Very high
Facility 2	4	50	13:1	8 High	18 (5:1)	-9	Shortage	Very High
Facility 3	3	30	10:1	10 High	16 (5:1)	-5	Shortage	Very High
Facility 4	2	20	10:1	10 High	15 (8:1)	-3	Shortage	High
D. Average	4	41	10:1	9 High	19 (5:1)	-6	Shortage	Very high
District B								
Facility 1	4	8	2:1	50 Low	12 (3:1)	+2	Surplus	Low
Facility 2	2	4	2:1	50 Low	8 (4:1)	+1	Surplus	Low
Facility 3	3	15	5:1	20 High	20 (5:1)	-1	Shortage	High
Facility 4	2	7	4:1	29 High	14 (4:1)	-0.25	Shortage	High
Facility 5	3	14	5:1	21 High	26(9:1)	-0.5	Shortage	High
D. Average	3	10	3:1	34 Low	16(5:1)	+0.3	Surplus	Low
District C								
Facility 1	5	40	8:1	12.5 High	24(5:1)	-5	Shortage	Very high
Facility 2	3	25	8:1	12 High	12(4:1)	-5	Shortage	Very High
Facility 3	3	31	10:1	9.6 High	22(7:1)	-7	Shortage	Very High
Facility 4	1	10	10:1	10 High	11(11:1)	-1.5	Shortage	High
D. Average	3	27	9:1	11High	17(6:1)	-6	Shortage	Very high
District D								
Facility 1	3	8	3:1	37.5 Low	10(3:1)	+1	Surplus	Low
Facility 2	1	12	12:1	8 high	8(8:1)	-2	Shortage	High
Facility 3	3	15	5:1	20 High	12(4:1)	-1	Shortage	High
Facility 4	2	13	7:1	15 High	13(7:1)	-1.25	Shortage	High
Facility 5	3	14	5:1	21 High	26(9:1)	-0.5	Shortage	High
Facility 6	3	10	3:1	30 Low	16(5:1)	+0.5	Surplus	Low
Facility 7	3	21	7:1	14 High	6(2:1)	-2.25	Shortage	High
D. Average	3	16	5:1	19 High	8(3:1)	-1	Shortage	High
Total average	3.25	23.5	7.2:1	13.8 high	15(4.6:1)	-2.6	Shortage	High

Source: Authors' field work, 2022

3.4 Perceived midwifery workload

From Figure 1, majority of the respondents 370 (95.4%) perceived their workload to be high whilst 18 (4.6%) described it as low.

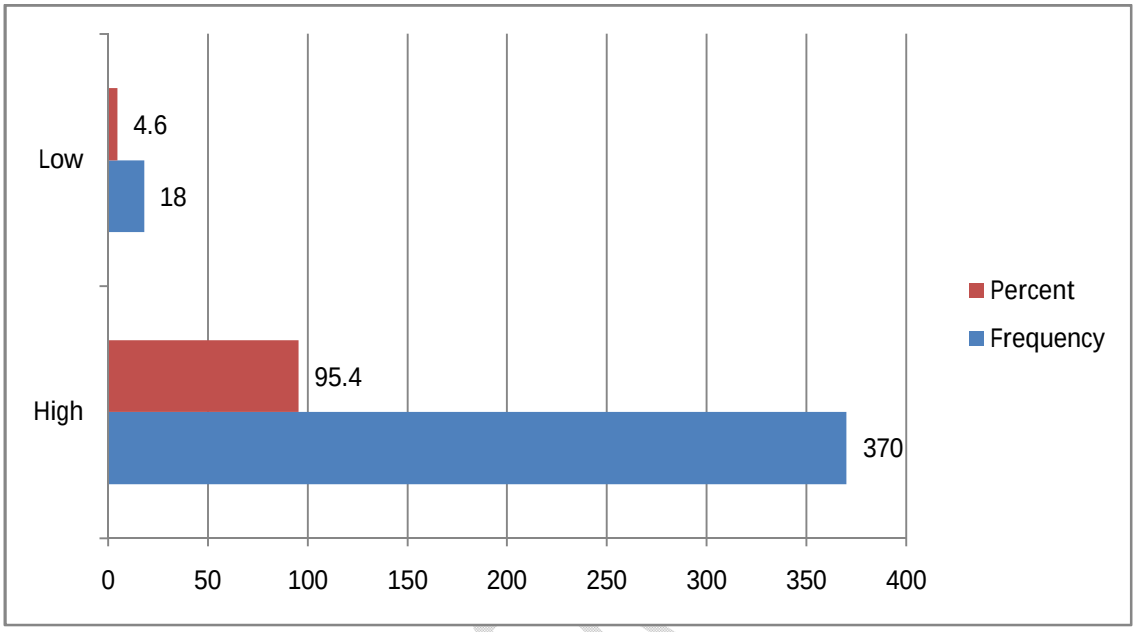

Figure 1: Perceived midwifery workload

3.5 Measuring Quality of client care in the districts

The quality of client care was measured using CMS standard of 100% for the quality health care indicators. Effectiveness of care was rated 32.4%, efficient use of medical logistics was 45.3%, and safety of care was also 47.6%. Others included timeliness of care which was 36%, patient experience achieved 62.3%, readmission equals to 61.8% while mortality was 97.6%. The total average quality care in the region was 54.8%as shown in Table 4.

Table 4: Measuring Quality of client care in the districts

Indicators	Yes n(%)	No n(%)	CMS standardn(100%)	CMSmean n(*100%)*
Effectiveness of care				
Antenatal care before 13 weeks gestation	204 (52.5)	184(47.4)	204(52.5)	129(*32.4*)
Use of partograph during labour	54 (13.9)	334(86.0)	54(13.9)	
Efficient use of medical logistics				
Oxytocin administration after birth	199(51.2)	189(48.7)	199(51.2)	176(*45.3*)
Treating diarrhea in children with ORS and Zinc	210(54.1)	178(45.8)	210(54.1)	
Safety of care				
Clients contract hospital infections	251(64.6)	137(35.3)	251(64.6)	185(*47.6*)
Obstetric complications managed according to standards	120(30.9)	268(69.0)	120(30.9)	
Timeliness of care				
Clients are responded immediately	167(43.0)	221(56.9)	167(43.0)	140(*36.0*)
Overcrowding is dealt well in the facility	134(34.5)	254(65.4)	134(34.5)	
Immediate effective postpartum care	120(30.9)	268(69.0)	120(30.9)	
Patient experience				
Postpartum contraceptive for mother	230(59.2)	158(40.7)	230(59.2)	242(*62.3*)
Neonatal complications management	254(65.4)	134(34.5)	254(65.4)	
Readmission				
Patients are not readmitted due to treatment complications	226(58.2)	162(41.7)	226(58.2)	240(*61.8*)
Patients do not return to the facility as a result of ineffective treatment	254(65.4)	134(34.5)	254(65.4)	
Mortality				
Maternal mortality <308/100,000 LB	378 (97.4)	10 (2.5)	378 (97.4)	379 (*97.6*)
Neonatal mortality <25/1000 LB/yr	379 (97.6)	9 (2.3)	379 (97.6)	
Total average quality of care	-	-	-	213(54.8)

Source: Authors' field work, 2022

3.6 The association between midwifery workload and quality client care

Table 5 shows the association between midwifery workload and quality client care. Significant proportion (p-value= 0.000) of the participants 186(47.9%) said yes to the effectiveness of client care with the current state of midwifery workload in the districts. Again, majority of the participants 192(49.5%) said there was an efficient use of medical logistics which was statistically significant (p-value= 0.000). With safety of care, an overwhelming majority of the participants 233(60.1%) said yes which was significant (p-value= 0.000). Also, with statistical significance (p-value= 0.000), majority of the participants 221(57.0%) said there was no timeliness in client care. Patient did not have much experience and readmissions according to the majority of the participants 236(60.8%) with p-value=

0.000. Contrary, with the state of the midwifery workload, maternal and neonatal mortalities were not statistically significant (p-value= 0.589 and 0.618) respectively.

Table 5: The Bivariate analysis of the association between midwifery workload and quality client care

Variables	Workload on the ward		Total n(%)	χ2(p-value)
	High n(%)	Low n(%)		
Effectiveness of care				
Yes	186 (47.9)	18 (4.6)	204 (52.6)	17.025(.000)
No	184 (47.4)	0 (0.0)	184 (47.4)	
Total	370 (95.4)	18 (4.6)	388 (100)	
Efficiency use of medical logistics				
Yes	192 (49.5)	18 (4.6)	210 (54.1)	
No	178 (45.9)	0 (0.0)	178 (45.9)	15.999(.000)
Total	370 (95.4)	18 (4.6)	388 (100)	
Safety of care				
Yes	233 (60.1)	18 (4.6)	251 (64.7)	
No	137 (35.3)	0 (0.0)	137 (35.3)	10.303(.000)
Total	370 (95.4)	18 (4.6)	388 (100)	
Timeliness of care				
Yes	149 (38.4)	18 (4.6)	167 (43.0)	
No	221 (57.0)	0 (0.0)	221(57.0)	24.979(.000)
Total	370 (95.4)	18 (4.6)	388 (100)	
Patient experience				
Yes	236 (60.8)	18 (4.6)	254 (65.5)	
No	134 (34.5)	0 (0.0)	134 (34.5)	9.958(.000)
Total	370 (95.4)	18 (4.6)	388 (100)	
Readmission				
Yes	208 (53.6)	18 (4.6)	226 (58.2)	
No	162 (41.8)	0 (0.0)	162 (41.8)	13.530(.000)
Total	370 (95.4)	18 (4.6)	388 (100)	
Maternal mortality <308/100,000				
Yes	359 (92.5)	18 (4.6)	377 (97.2)	
No	11 (2.8)	0 (0.0)	11 (2.8)	0.551(.589)
Total	370 (95.4)	18 (4.6)	388 (100)	
Neonatal mortality<25/1000 LB				0.499(.618)
Yes	360 (92.8)	18 (4.6)	378 (97.4)	
No	10 (2.6)	0 (0.0)	10 (2.6)	
Total	370 (95.4)	18 (4.6)	388 (100)	

Source: Authors' field work, 2022

4.0 Discussion

4.1 Midwifery workload

The objective of the study was to determine midwifery workload and its effects on quality client care in some selected districts in the Central Region. From 392 respondents sampled, 388 were able to return their questionnaires duly filled for data analysis making response rate of 92.1%.Fifteen (15) extra participants were selected purposively for the qualitative data collection. A mix method research paradigm was used to gain more insight into the phenomenon of the midwifery workload. Four districts were used for this study. Consequently, all the four districts in the region had high patient/midwife ratio. Quality of care was compromised due to high workload on midwives in the districts. The maternal and neonatal mortality rates in the districts were very low disputing the fact that mortality ratein the region was high.

The average midwife-patient ratio in the four districts was 1:7.2 which was above the WHO recommended ratio of 4 patient is to 1 midwife (4:1). The increased in midwife-patient ratio could be as a result of the implementation of the NHIS and free care for pregnant mothers into the health care delivery system in Ghana where prospective clients pay premiums and subsequently access health care when they need it, the hospitals have reported an increase in the number of clients seeking medical care (Afaya*et al.,* 2017).

The 1:4 ratio is the least midwife to patient ratio endorsed in an acute general medical, surgical andlabour ward in a public hospital setting on morning and afternoon shifts (Kvist*et al.,* 2011). However, ward with seriously ill patients who need much attention allocation of smaller number of patients than 1:4 to allow the midwife to give safe care (Allen *et al*, 2010). The finding of this study is in line with the aforementioned studies. Per the findings of this study, it is imperative to understand the differences between midwifery workload and midwifery work. Units like the ante natal, the number of clients attended by midwives in a day exceeded the standard of 1:4.

Anassigned midwife-patient ratio is a method that has been proposed to improve quality outcomes in hospitals and keep midwifery workload at a manageable level. Other studies like Cai*et al*, (2012) states that in as much as we are concerned about the high workload of midwives we should also consider the effects of workload on quality of care which this study helped to uncover.The method used in this study correlates with the study by (Bowers (2015). The current study took into consideration number of patients per midwife per shift and ward since patients' wardmay influence the workload. This study failed to consider the condition of the patient due to

the fact that most serious conditions are either managed by the doctor or referred to higher level for care. In this study it was revealed that labour ward, morning and night shifts had the high midwifery workload hence most of the midwives preferred afternoon shift and other wards apart from labour ward. The WISN method would be easy to apply in the region because there is continuity of care by the midwives for a patient's condition.

4.2 Quality of Client Care

The quality of client care was measured using CMS standard of 100% for the quality health care indicators. The quality of health care in the districts was compromised with the exception of patients' experience, readmission and mortality that were above average whilst the rest of the indicators were below average. According to McDowell (2009), the definition of quality midwifery care varies from one place to the other and even among stakeholders. In Thailand for example, quality of care is seen as the level to which the patient's pressing needs are achieved (McDowell, 2009). However, in this study the quality of health indicators stood at 54.8% as seen in table 4. With the average percentage of 54.8 it puts the quality health care in the region above average. Even though not all the indicators were positive however, the positive ones like mortality rate were able to influence the quality health care rate in the region.

The effectiveness of care result is in line with Weissman *et al.,* (2007) state that Australian midwives perceive quality care as the effectiveness of therapywhereas patients also see quality of care as effectiveness in message, attention, sympathy and accessibility of their midwives. Midwife managers also focus on organizational elements of efficiency and cost effectiveness as yardstick to measure quality performance of care. Midwives however, evaluate quality of care by assessing the effectiveness and skill with which treatments and medications are delivered (Weissman *et al*., 2007).

The challenge in assessing the quality health care in this study could be due to poorly maintained medical records in the facilities which might not reflect the actual practice of the midwives. Again, midwives more often than not fail to record procedures performed on patients which leads to over or underestimation of performance (McDowell, 2009). Despite challenges, this study offers fair idea on the quality of care patients receive in the district. The findings are similar to that ofCenter for Medical Services (CMS) outcome measures used to assess the total hospital quality in 2018 with the following results:mortality (22%), protection of care (22%),

readmissions (22%), patient experience (22%), effectiveness of care (4%), timeliness of care (4%) and productive use of medical imaging (4%) (Colla *et al*., 2005). However, the difference in the results is that the current study used a composite percentage of 54.8 to describe the total quality services rendered to the clients whilst in the other study it calculated the individual indicators over hundred per cent which does not give a clear picture of the quality health care services in the hospital.

To confirm how midwives perceive the care rendered to patients Aiken *et al.,* (2010) concluded that one in nine midwives in Germany and one in three midwives in the United States of America and Canada rated the quality of midwifery care they provided as excellent. However, almost half of the midwives in this same study believed that the quality of nursing care deteriorated (Aiken *et al.,* 2010). The positive quality of care in this study could be due to the fact that the midwives over work to compensate the deficit in staffing just to achieve result. Overwork comes with its own complications which were not assessed in this study.

4.3 The Association between Midwifery Workload and Quality Client Care

Effectiveness of care was below average and this could be due to the high midwifery workload in the region that put pressure on the midwives to render an effective care to their clients. According to participants,treatment was not effective in the sense that some patients could not recover when attended the facilities for care. However, during the interview, some participants stated that mothers were able to deliver with little to no complications. Again, in case of prolonged labour, the client is sent immediately to the operating theatre for emergency caesarean section as noticed in the in-depth interview. This ineffectiveness of care was also seen in the timeliness of care and efficient use of medical logistics. To this end, midwifery workload had major effect on the quality of client care.Clients were made to wait at facility unduly when assessing health care which could reduce the attendants of clients in the facilities. The inefficient use of medical logistics might also result in frequent shortage of logistics in the facilities and clients made to buy medical items from outside (Table 4).

Most patients were readmitted due to complications after treatment. Quality care ensures that patients are recovered on time with no complication and less cost(Burchinal, 2018). In this study, it was also realised that patients were not attended to on time and this could affect the care of the patients since some gynaecological conditions are to be attended to without delay as shown in

table 4.Mortality rate is a vital epidemiological indicator used for determining quality of patients' care(Burchinal, 2018). When the death rate for patient is high in a facility, it implies that the quality of care in the facility is questionable and leads to two main thing: either patients are not treated well or they report to the facility late. This finding correlates with Colla*et al.,* (2015) who state that death is an important feature in people's health care. This implies that hospitals are set up to prevent or reduce deaths as much as possible.

Safety of care was also assessed by Colla*et al.,* (2005). Their study indicated that safety of care outcome measure therapeutic mistakes from medical teams. As a result of high workload for the midwives, safety of care was not achieved as stated by the majority of the participants. Though the midwives had one hour as an average extra hour at post but they could render safe care to their patients.

According to Burchinal(2018), readmission of patients to the hospital is costly both to patient and the hospital. The findings of this current study support the previous study where more patients were readmitted by the various facilities. During the interview it was revealed that most readmissionswere recorded as new cases thereby producing misleading data on readmissions. The low readmission might be due to the fact that most of the health care facilities in the districts did not have the capacity to manage serious and complicated conditions so most of the readmission cases were referred to bigger facilities for continuity of care which were not recorded in the facilities' records.

4.5 Limitations of the study

A major limitation was how to reach all the respondents since some were wildly spread in the districts and was difficult to reach them (district level to the sub-district and community level). However, participants were given a period of two weeks to respond and submit their questionnaires. Also, because of potential reporting bias secondary data from the various facilities were reviewed to compliment the primary data to reduce bias.Again, the study could not assess the workload of the midwives at the intensive care units or the neonatal care unit since midwives spent much time on these clients due to their critical conditions. However, results were comparable since they all reported and closed from work at the same time.

4.6 Conclusionand

Most of the midwives in the districts were aged between 20-29 years and had Diploma as their academic qualification. Also, most of the midwives were single and had worked for 4-10 years.The mean workload in hours for midwives was seven (7) hours a day and six (6) days in a week. Midwifery workload in the districts was high. The average patient-midwife ratio was 7.2:1while bed-midwife ratio stood 5:1 with most of the facilities lacking midwives.In general, the quality of client care was good in the region since the total score was above average (54.8%) though some indicators were below average.There was association between midwifery workload and quality client care. As a result of high midwifery workload, patient did not receive quality of care from the midwives.

4.7 Recommendations

i. The Regional Health Directorate should request and send more midwives to the districts reduce the workload of the midwives.
ii. The hospital management should increase midwives at the labour wards to reduce workload on midwives working there.
iii. The midwife managers should increase midwives for morning shift since the chunk of work is performed during the morning shift.
iv. The hospital management should put measures in place reduce delay of patients at the facilities when accessing health care.
v. Further studies should be conducted on effects of high workload on the health of the midwives.
vi. Similar study should be carried out on the patients to get their side of the phenomenon to complete the clinical picture of the midwifery workload.

Ethical Approval and Consent

Ethical clearance was sought from the Ghana Health Service Ethics Review Committee, Research and Development Division, which was approved. The Central Regional Health Directorate and District Directors of the chosen districts granted authorization. In addition, if they chose to, participants were given the free will to participate and withdraw. Participants were assured of anonymity and privacy. In

that case participants were not made to write their names and other personal information that could have disclosed their identity on the questionnaire forms.It was explained to the leadership and the respondents. All COVID-19 protocols example wearing of face mask, proper hand washing, social distancing and the use of hand sanitizer were adhered to.

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