



Assessment of Health Worker Productivity in Tanzania

A report prepared by the Benjamin W. Mkapa HIV/AIDS Foundation

SEPTEMBER 2015

Suggested citation: Benjamin W. Mkapa HIV/AIDS Foundation. 2015. *Assessment of Health Worker Productivity in Tanzania*. Dar es Salaam, Tanzania.

Established in 2006, the Benjamin William Mkapa HIV/AIDS Foundation is dedicated to enhancing the delivery of quality HIV and AIDS care, treatment and other related services including Reproductive and Child Health to Tanzanians.

Assessment of Health Worker Productivity in Tanzania

SEPTEMBER 2015

CONTENTS

ACKNOWLEDGMENTS	VII
EXECUTIVE SUMMARY	VIII
ABBREVIATIONS	X
INTRODUCTION	1
BACKGROUND	1
STUDY OBJECTIVES	2
METHODOLOGY	3
STUDY SITES AND SAMPLING	3
DATA COLLECTION METHODS AND TOOLS	4
DATA ANALYSIS	4
ETHICAL CONSIDERATIONS	5
LIMITATIONS	5
FINDINGS	6
GENERAL AND DEMOGRAPHIC CHARACTERISTICS	6
EDUCATIONAL BACKGROUND	7
WORK EXPERIENCE	8
CADRES AND POSITIONS	8
JOB DESCRIPTION	8
JOB SATISFACTION	11
MOTIVATORS	12
SALARY ADEQUACY AND ADAPTATION STRATEGIES	15
OTHER SOURCES OF INCOME	15
EXTRA TIME	17
RESULTS OF PRODUCTIVITY STUDY	17
DISCUSSION AND CONCLUSION	24
RECOMMENDATIONS	25
APPENDIX 1: WORKPLAN	27
APPENDIX 2: KEY INFORMANT INTERVIEW GUIDE	28
APPENDIX 3: HEALTHCARE WORKERS QUESTIONNAIRE	32
APPENDIX 4: TIME-AND-MOTION STUDIES: INSTRUCTIONS FOR RESEARCH ASSISTANTS	44
APPENDIX 5: DATA ABSTRACTION SUMMARY FORM	53
APPENDIX 6: INFORMED CONSENT FORM	54
REFERENCES	57

ACKNOWLEDGMENTS

This report would not have been possible without the support of the USAID-funded Health Policy Project (HPP). In addition, the authors wish to express their gratitude to all the officials and individuals who provided information and graciously gave their time and support to the assessment process. Specifically, we would like to thank the local government authorities of participating districts and municipalities, as well as the health workers and officials who participated in the time motion study and qualitative interviews, including health facility in-charges and district health officers. The authors would like to single out Dr. Adeline Saguti and Ms. Christine Godfrey for managing the assessment logistics, and providing guidance and support. Finally, we would like to thank USAID for funding this study.

EXECUTIVE SUMMARY

Inadequate human resources for health (HRH) pose a significant challenge for health systems in sub-Saharan Africa. In Tanzania, the shortage of health workers has been extensively documented and described as a national crisis (Chandler et al., 2009; MOHSW, 2008). The 2013 mid-term review of the Third Health Sector Strategic Plan (HSSP III) indicates that Tanzania has a 39 percent deficit in the health workforce across all cadres. Poor deployment, brain drain, and low absorption capacity of government for graduate health workers are among the contributing factors to the health worker shortage.

Although much emphasis has been placed on addressing the shortage of health workers, the health workforce crisis in Tanzania involves more than a personnel shortage. Unequal distribution of the health workforce, poor motivation and performance, and low productivity are also contributing to the HRH crisis.

However, information regarding the productivity of health workers in Tanzania is relatively limited, which makes it difficult to develop effective advocacy strategies to address Tanzania's HRH crisis. The Benjamin W. Mkapa Foundation (BMAF) undertook this study to improve understanding of health worker productivity (time use) in Tanzania. Specifically, the study aimed

1. To assess health workers' productivity during working hours;
2. To examine health workers' productivity in relation to level of care, type of cadre, and geographical location; and
3. To examine the perceived effect of financial and non-financial incentives on productivity.

The study covered 30 selected health facilities (6 hospitals, 12 health centres, and 12 dispensaries) in six localities: Hai District Council, Masasi Town Council, Moshi Municipal Council, Mtwara District Council, Shinyanga District Council, and Shinyanga Municipal Council using a cross-sectional approach that employed both qualitative and quantitative methods.

Quantitative data on health workers' time use was gathered using time motion studies. About 135 health workers were observed while performing their duties. Observed health workers spent 47 percent of their working time on productive activities. Productivity levels differed with respect to cadre, level of facility, and geographical location. Pharmaceutical assistants were the most productive cadre (72%), and productivity was found to be highest in hospital settings (55%).

Overall, these low productivity levels suggest that health workers are being underutilized. However, the interpretation of productivity changes considerably when the time that health workers were actually present at health facilities is taken into account. Across all cadres, 66 percent of health workers' time in facilities was spent on productive activities. This is an important distinction, as it indicates that health workers can be highly productive when properly managed.

Quantitative data was supplemented by key informant interviews with 264 health workers in the six study districts. Almost all health workers (95%) had been given job descriptions. Around two-thirds (66.4%) of interviewees reported they were satisfied with their current job, and mentioned social prestige as their most important satisfier. Workers who were dissatisfied mentioned low salary (27.3%) as the most important reason. Despite low salary and other established challenges, a majority of health workers (70.5%) reported love for their job as the key motivator causing them to remain in their current job.

Nearly three-quarters (71.4%) of health workers wished to undertake further career development. Very few (1.9%) planned to quit the health sector, which could be an indication of good health worker retention.

This study found productivity levels and high levels of absenteeism among frontline health workers in the six study districts. Health workers cited various reasons for low productivity. While some of these reasons included lack of financial incentives, health workers also reported being highly motivated by less tangible factors, such as social prestige and love for their job.

Long-term investment in the Tanzanian health workforce will be required to address the multifaceted issue of low productivity. Based on our findings, we offer several near- and long-term recommendations for improving health worker productivity, including using participatory approaches to craft staff motivation packages for frontline health workers, studying the underlying causes for staff absenteeism, adopting the Workload Indicators of Staffing Need (WISN) method to inform staff distribution, and using proceeds from performance-based financing schemes to reward health workers.

ABBREVIATIONS

AIDS	acquired immunodeficiency syndrome
DMO	District Medical Officer
HIV	human immunodeficiency virus
HRH	human resources for health
HSSP III	Third Health Sector Strategic Plan
LGA	local government authority
MOHSW	Ministry of Health and Social Welfare
MRCC	Medical Research Coordinating Committee
NIMR	National Institute for Medical Research
SPSS	Statistical Software for Social Sciences
WISN	Workload Indicators of Staffing Need

INTRODUCTION

Background

Inadequate human resources for health (HRH) pose a significant challenge for health systems in sub-Saharan Africa. The HIV/AIDS epidemic has compounded the HRH shortage through increased patient volume and the need for additional services (Van Damme et al., 2008). Poor deployment, brain drain, and limited government capacity to absorb graduate health workers have also contributed to HRH challenges (Dolea et al., 2010).

In Tanzania, the shortage of health workers has been extensively documented and described as a national crisis (Chandler et al., 2009; MOHSW, 2008). Although the country's Third Health Sector Strategic Plan (HSSP III) demonstrated a commitment to addressing the HRH situation, the 2013 mid-term review of the HSSP III found that Tanzania still has a 39 percent deficit in the health workforce across all cadres.

The health worker shortage has led many countries to implement innovative ways to reduce the heavy workload experienced by traditionally trained health workers and improve patients' access to essential health services. Interventions such as the introduction of community health workers and the use of task shifting (making more efficient use of available human resources by redistributing select tasks from highly qualified health workers to those with fewer qualifications) have been explored to improve the HRH situation. Other interventions that have been tried include incentive schemes to improve productivity and retention of health workers, and speed up health worker deployment, especially in remote areas (Hermann et al., 2009; Ledikwe et al., 2013).

Although much emphasis has been placed on addressing the shortage of health workers, the health workforce crisis in Tanzania involves more than a personnel shortage. Unequal distribution of the health workforce, poor motivation and performance, and low productivity are important factors in the HRH situation. Low health worker productivity is a major source of inefficiency in the health system (Sousa-Posa and Ziegler, 2003), while health worker motivation and performance greatly affect the quality of health services. A 2007 study of health worker productivity in three districts found a baseline productivity level of only 57 percent. The authors saw the potential for a 26 percent gain in productivity through improved management (Kurowski, Wyss, Abdulla, & Mills, 2007).

At the first national conference on HRH held in September 2013, and subsequently at the Third Global Forum for HRH, the Tanzanian government committed to achieving three health workforce goals by 2017:

- Increase the availability of skilled health workers at all levels of health service delivery from 46 percent to 64 percent (based on 2013 staffing levels)
- Increase the financial base to operationalize the pay and incentive policy to promote health worker retention and productivity, and improve the quality of health services
- Develop and implement a task sharing policy by 2017

Study Objectives

Information regarding the productivity of health workers in Tanzania is relatively limited, which makes it difficult to develop effective advocacy strategies to address Tanzania's HRH crisis. The Benjamin W. Mkapa Foundation (BMAF) undertook this study to improve understanding of health worker productivity (time use) in Tanzania. Specifically, the study aimed

4. To assess health workers' productivity during working hours;
5. To examine health workers' productivity in relation to level of care, type of cadre, and geographical location; and
6. To examine the perceived effect of financial and non-financial incentives on productivity.

METHODOLOGY

This study was conducted using a cross-sectional methodology, which applied both qualitative and quantitative approaches. Triangulation of qualitative and quantitative approaches was used to ensure the reliability and consistency of study data, and compensate for limitations. For purposes of this study, productivity is defined as “the proportion of official time spent by a health worker on productive activities.” Official time is defined as the working day: Monday through Friday, between the hours of 8 a.m. and 4 p.m.

Study Sites and Sampling

The assessment covered 30 selected health facilities (6 hospitals, 12 health centres, and 12 dispensaries) in six localities under six local government authorities (LGAs): Hai District Council, Masasi Town Council, Moshi Municipal Council, Mtwara District Council, Shinyanga District Council, and Shinyanga Municipal Council. The 30 study sites were identified from within a mix of high- and low-performing LGAs. Purposeful sampling was used to select hospitals, because each LGA had one hospital. Convenience sampling was used to select health centres and dispensaries from each LGA.

A total of 264 health workers participated in the study. For each facility, in-charges and health workers of all cadres were included. District health officers dealing with HRH issues in a visited district were also included. Sample size was proportional to the level of the facility: 24 health workers were selected in each hospital visited, nine health workers in each health centre, and six health workers in each dispensary. In addition, at each level, one in-charge was invited to participate. Each locale was represented by an almost equal number of health workers, with the exception of Shinyanga District Council, which was relatively under-represented because the district does not have a hospital, so health workers were only obtained from dispensaries and health centres (Table 1).

Table 1: Distribution of health workers with respect to district

District name	Number	Percent
Hai District Council	48	18.2
Masasi Town Council	48	18.2
Moshi Municipal Council	47	17.8
Mtwara District Council	46	17.4
Shinyanga District Council	30	11.4
Shinyanga Municipal Council	45	17.0
Total	264	100.0

Data collection methods and tools

Productivity study

Researchers used a time motion study to gather quantitative data on health worker productivity. Research assistants observed 135 health workers during their shifts and used a pre-coded observation tool (See Appendix 4) to record all the activities performed by the health workers. Researchers followed health workers stationed in hospitals for three consecutive days, while those based in health centres and dispensaries were followed for two days. This exercise provided information on the range of activities performed by health workers and the proportion of official working time spent on each of these activities.

Key informant interviews

In addition to the time motion study, researchers interviewed 264 health workers in the six study districts. Researchers used the key informant interview guide (See Appendix 2) to elicit information on financial and non-financial incentives available, how tasks performed by health workers relate to their training, and respondents' perceptions of health worker productivity.

Questionnaire survey

A semi-structured questionnaire was administered to frontline health workers participating in the study. In addition to basic demographic information, the questionnaires collected information on the type of tasks performed by participants in relation to their training and the enabling and hindering factors that affect their productivity at work.

Data management

During fieldwork activities, each interviewer kept their data collection materials (questionnaires, forms, notebooks) in a special waterproof wallet. Field team leaders collected and checked all filled-in tools from interviewers on a daily basis. The data was then entered into an excel spreadsheet, and later sent to a statistician for compiling, cleaning, and final analysis.

Data analysis

Quantitative

Data was imported into SPSS Version 17.0. Data cleaning was done to check for outliers, missing variables, and data entry errors. The missing variable was dropped during further analysis. A univariate analysis was done to generate descriptive summaries (statistics) using proportions, means, and standard deviations.

Analysis of each specific objective

Objective 1: To assess health workers' productivity during working hours.

- This objective was achieved by characterizing the different cadres of health workers providing health services in the selected facilities. The variable used was the type of health worker.

Objective 2: To examine health workers' productivity in relation to level of care, type of cadre, and geographical location

- This objective was achieved by observing and characterizing the different responsibilities/duties routinely performed by health workers in the selected communities.
- The variables used included tasks routinely performed by specific types of health workers identified.

Objective 3: To examine the perceived effect of financial and non-financial incentives on productivity.

- This objective was achieved by establishing frequency of financial and non-financial incentives for health workers with respect to productivity.

Qualitative data analysis

All interviews were written verbatim and then translated by social scientists in close supervision with the data manager, who was responsible for field management of data. A codebook structure was developed iteratively after completion of translation, by reaching a consensus on the analysis of shared transcripts to create an all-encompassing set of codes, with definitions, cadre, inclusion and exclusion criteria.

Ethical considerations

Ethical clearance was obtained from the Medical Research Coordinating Committee (MRCC) of the National Institute of Medical Research (NIMR). Additional permission was sought from district and facility authorities, including district medical officers (DMOs), and in-charges of the health facilities. Oral consent was sought from key informants and frontline health workers prior to interviews.

Research assistants with different training backgrounds and some experience in health research data collection were trained on basic issues related to ethical conduct in health research before fieldwork began.

Limitations

- When calculating productivity, the study did not categorize health workers according to their level of training. All health workers were treated equally in the analysis, which might introduce bias in productivity.
- Observation bias may have occurred, as participants may have changed their behaviour when under observation. This could result in an overestimation of productivity for some workers.

FINDINGS

General and Demographic Characteristics

The overall mean age of the health workers were 39.0 ± 11.6 years. Table 2 shows that, on average, male health workers were slightly older (39 years) than their female (38.6 years) counterparts. The oldest man interviewed was 65 years of age, while the oldest woman interviewed was 58 years old.

Table 2: Health workers' age with respect to gender

Gender	Age	
Male	Mean	39.3
	Std. Deviation	12.4
	Minimum	21
	Maximum	65
Female	Mean	38.6
	Std. Deviation	11.2
	Minimum	21
	Maximum	58
Overall mean age		39.0 ± 11.6

Among the 264 interviewed health workers, females accounted for more than half (69.3%). The majority of study participants (58.9%) were married, with only 3.8 percent separated at the time of the study (See Table 3).

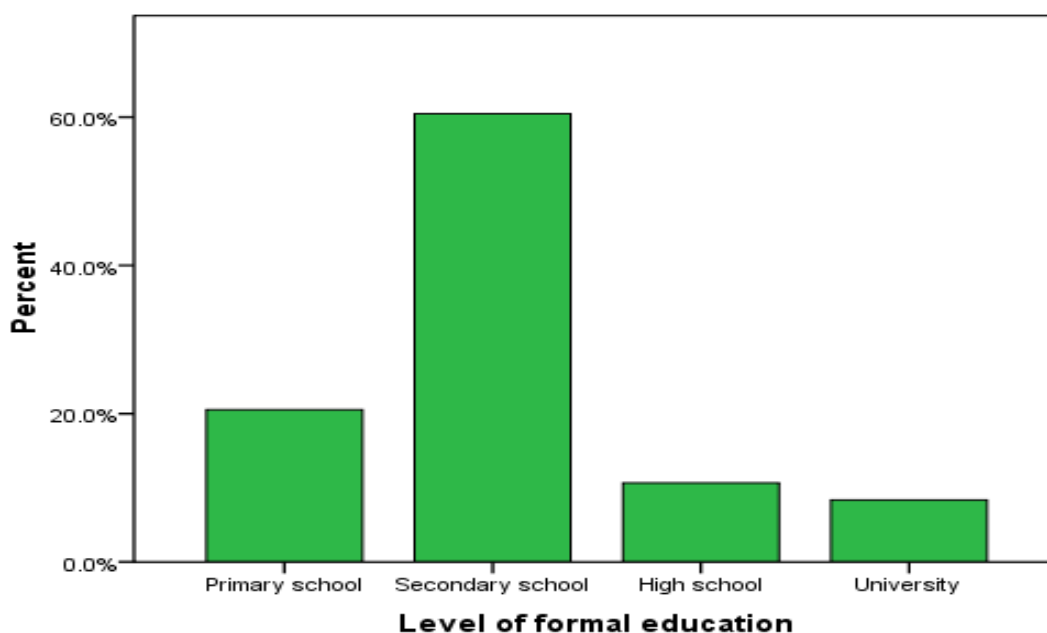
Table 3: Gender and marital status of health workers (N=264)

Characteristics	Number (N)	Percent (%)
Gender		
Male	81	30.7
Female	183	69.3
Marital status		
Never married	85	32.3
Separated	10	3.8
Married	155	58.9
Widow(er)	13	4.9

Educational Background

Analysis of the highest level of formal education attained by participating health workers established that the majority (60.5%) had secondary education, while relatively few (8.4%) had attained a university level education (See Figure 1).

Figure 1: Health workers with formal education



During the study, health workers' level professional training was also assessed (See Table 4). Researchers found variation among health workers' level of professional education. The majority (53.6%) had professional training certificates. This group included those trained for only one year (health attendants and maternal and child health aides) as well as nursing cadres trained for up to three years (midwives and trained nurses). The "untrained" (1.5%) group had never had any formal orientation to their work, relying entirely on experience on-the-job.

Table 4: Health workers' level of professional education

Highest level of professional education	Number	Percent
None (untrained)	4	1.5
Certificate	141	53.6
Diploma	91	34.6
Advanced diploma	11	4.2
First degree	15	5.7
Postgraduate	1	0.4

Work Experience

On average health workers interviewed had about 14 ± 12.5 years of experience in health sector, 10 ± 10.7 years working in the district in which study was conducted and about 7 ± 8.5 years of experience in the visited health facility (Table 9)

Table 9: Work experience of health worker

	Minimum	Maximum	Mean	Std. Deviation
Years worked in Health sector	1	49	14.14	12.462
Years worked in the district	1	45	10.25	10.687
Years worked in the facility	1	45	7.01	8.564

Cadres and Positions

Most of the health workers interviewed were medical attendants (17.4%), followed by clinical officers (12.1%). Out of 264 health workers interviewed only seven (2.7%) were medical officers, which was the highest cadre encountered. The “other” category accounted for a significant proportion (24.1%) of the health workforce studied. These “others” included environmental health assistants, laboratory technicians, ophthalmologists, assistant health officers, assistant nursing officers, pharmacists, medical recorders, pharmaceutical assistants and maternal and child health aides. A majority (66.5%) of study participants were working as ordinary workers, meaning they did not hold any additional responsibility beyond those mentioned in their job description or elsewhere (See Table 5).

Job Description

Almost all (95.4%) participating health workers reported being aware of their job descriptions (See Figure 2). The remaining few (4.6%) would report to work, and the day’s situation would determine what they would do on that particular day (See Figure 2). Some health workers who reported having job descriptions mentioned that their first appointment or promotion letter contained instructions on the tasks they were expected to perform. Similar findings were recorded from qualitative interviews with in-charges as demonstrated by the following quote:

“Most health workers here have written job descriptions. Even if you don’t have a written job description someone will tell you what you’re supposed to do when you are at the facility” (Masasi).

Table 5: Health worker cadres and position

Job title	Number	Percent
Medical officer	7	2.7
Medical attendant	46	17.4
Trained nurse	25	9.5
Assistant medical officer	12	4.5
Clinical officer	32	12.1
Assistant clinical officer	8	3.0
Nursing officer	23	8.7
Public health nurse	4	1.5
Nurse midwife	43	16.3
Other	64	24.1
Position in the office		
In-charge of the facility	15	5.7
In-charge of a department	18	6.8
In-charge of a section	55	20.9
Ordinary health worker	175	66.5

Figure 2: Health workers aware of Job description

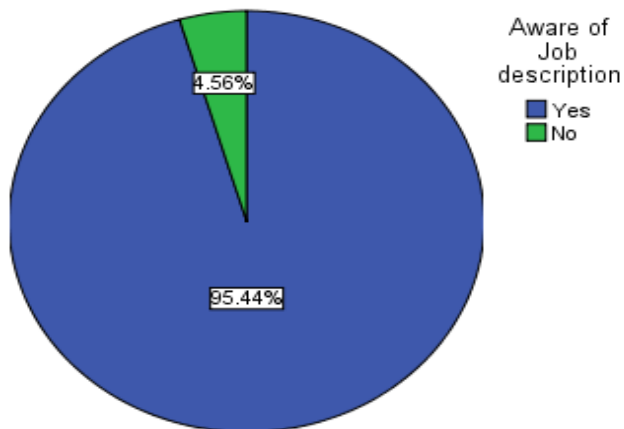


Table 6 shows that there was little variation across cadres in terms of awareness of job description. Most nurses (97.9%), clinicians (94.9%), and attendants (92.7%) were aware of their job descriptions, and observed differences among these cadres were not statistically significant ($p=0.443$).

Table 6: Aware of job description by cadre

Cadre	Aware		P-value
	Yes	No	
Clinicians	56 (94.9)	3 (5.1%)	0.443
Attendants	101 (92.7%)	7 (6.4%)	
Nurses	94 (97.9)	2 (2.1)	

Note: Clinicians include clinical officers, assistant medical officers, assistant clinical officers, and medical officers. **Nurses** include public health nurses, nurse midwives, nursing officers, trained nurses, and maternal and child health aides. **Attendants** include medical attendants and others.

Items included in job descriptions

As Table 7 shows, 11 items were mentioned by health workers as present in their job descriptions. Of these, health education was the most frequently cited item (72.2%), followed by direct patient care and cleaning of the health facility (65.4%).

Table 7: Items reported as part of health workers' job descriptions

Work reported	N (%)
Direct patient care	170 (65.4)
Diagnosis	116 (44.4)
Prescription	126 (48.1)
Dispensing	137 (52.1)
Minor surgical procedure	81 (30.9)
Major surgical procedure	27 (10.3)
Administering injections	152 (57.8)
Cleaning the facility	172 (65.4)
Health education	190 (72.2)
Supervising co-workers	123 (46.8)
Administrative duties	80 (30.4)

Most clinicians who reported being aware of their job descriptions mentioned major surgical procedures and minor surgical procedures as their job items (See Table 8). Interestingly, 9.3 percent of clinicians included “cleaning the facility” in their job description. Nearly 10 percent of attendants mentioned performing major (8.6%) and minor (7.4%) surgical procedures in their job description. Although most clinicians reported attending surgical procedures, their number is quite low which could be due to

inadequate infrastructure to support surgical procedures. The potential effects of inadequate health facility infrastructure on health workers’ motivation and productivity is illustrated by the following quote:

“I fail to utilise professionalism. Till now theatre is not working so, I am not motivated”
(Hai)

Table 8: Reported job description by cadre of health workers

work reported	Clinicians (N)	Attendants (N)	Nurses (N)	P-value
Direct patient care	56 (32.9)	44 (25.9)	70 (41)	<0.0001
Diagnosis	44(37.9)	37 (31.9)	35 (30.2)	<0.0001
Prescription	52 (41.3)	27 (21.4)	47 (37.3)	<0.0001
Dispensing	12 (8.8)	48 (35.0)	77 (56.2)	<0.0001
Minor surgical procedure	47 (58.0)	7 (8.6)	27 (33.3)	<0.0001
Major surgical procedure	22 (81.5)	2 (7.4)	3 (11.1)	<0.0001
Administering injections	20 (13.2)	48 (31.6)	84 (55.3)	<0.0001
Cleaning the facility	16 (9.3)	84(48.8)	72 (41.9)	<0.0001
Health education	47 (24.7)	59 (31.1)	84 (44.2)	<0.0001
Surpervising co-workers	40 (32.5)	34 (27.6)	49 (46.8)	<0.0001
Administrative duties	30(37.5)	19 (23.8)	31 (38.8)	<0.0001

Job Satisfaction

The study found that two-thirds (66.4%) of participating health workers are satisfied with their current jobs. Factors perceived by health workers as important for job satisfaction included social prestige (26.1%) and community support (21.6%), privilege (19.4%), adequate salary, and non-salary benefits (See Table 10).

Figure 3: Perceived job satisfaction

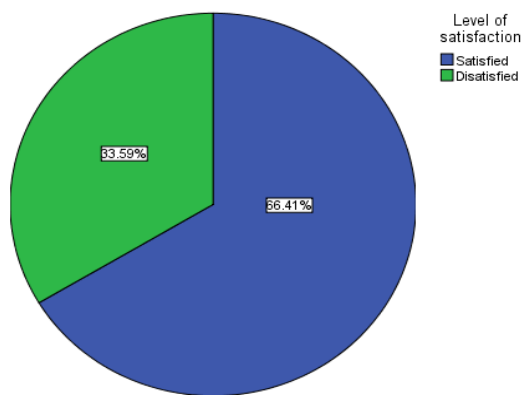


Table 10: Perceived factors in health worker satisfaction

Perceived factors	Level of importance	
	Important N(%)	Not important N(%)
Adequate salary	25 (14.3)	150 (85.7)
Non-salary benefits	22 (12.5)	154 (87.5)
Community support	38 (21.6%)	138 (78.4)
Social prestige	46 (26.1)	130 (73.9)
Receive privilege	34 (19.4)	141 (80.6)

Low salary (27.3%) was the issue most frequently mentioned by health workers as an important factor contributing to their job dissatisfaction. Other factors mentioned included heavy workload, complaints from the community, risky work, remote area, and lack of time for private life and extra income generating jobs (Table 11). The following quote illustrates how inadequate compensation contributes to health worker dissatisfaction:

“There’s no incentive or call allowance at all, I do extra duty daily. I filled forms for call allowance for this facility now I’m tied, since last year during... I don’t remember if it was Easter or Christmas I was given Tsh 50,000 from district. I asked them is it call allowance, extra duty or holiday offer? They said you just take it!” (Mtwara)

Table 11: Perceived factors in health worker dissatisfaction

Perceived factors	Level of importance		
	Most important	Important	Not important
Low salary	72 (27.3)	18 (6.8)	174 (65.9)
Place too remote	1 (0.4)	21 (8.0)	242 (91.7)
No time for extra job	1 (0.4)	24 (9.1)	239 (90.5)
Many complaints from the community	5 (1.9)	15 (5.7)	244 (92.4)
Too much work	13 (4.9)	28 (10.6)	223 (84.5)
No time for myself and family	4 (1.5)	21 (8.0)	239 (90.5)
Work too risky	3 (1.1)	19 (7.2)	241 (91.3)

Motivators

Table 12 shows perceived motivators for health workers to remain in their current job. A majority of workers (70.5%) reported passion for their jobs as the most important motivator affecting them. Job security was also identified as a relevant motivator. However, only three workers cited opportunity for research as a motivating factor.

During interviews, in-charges of health facilities mentioned the following motivators: conducive environment (e.g. emergency section grade one), provision of housing, allowances and communication,

availability of social services, good relationship with staff, and community satisfaction with the services provided.

Table 12: Motivators for health workers to remain in their current job

Motivators	Important motivators	
	Number (N)	Percent (%)
I love my job	186	70.5
Job security	85	32.2
Opportunity for further studies	16	6.1
Business opportunity	13	4.9
Research opportunity	3	1.1
Opportunity for continuing education	33	12.5
Good school for my children	9	3.4
Good climate	38	14.4
Reliable transport and communication	35	13.3
My family lives here	53	20.1
I invested here	30	11.4
Respected by community	45	17
Too old to find job	9	3.4
No job opportunity elsewhere	24	9.1
A temporary station	5	1.9
Other	18	6.8

“Other” included opportunity for loan and health insurance, salary assistance, promised salary raise, better working tools, serving the community, getting connections, and the availability of water and electricity

A substantial proportional of health workers (71.4%) interviewed expressed their intention to pursue further professional development for various reasons, including improving their chances for promotion. Eight health workers (3.1%) expressed an intention to seek another job within the health sector or join another district. Besides those waiting for retirement (7.3%), the proportion of health workers planning to quit practicing was quit low (See Table 14).

Table 13: Factors influencing job satisfaction among health workers

Factors	Categories	Satisfied N (%)	Dissatisfied N (%)	P-value
Gender	Male	56 (69.1)	25 (30.9)	0.316
	Female	118 (65.2)	63 (34.8%)	
Marital status	Never married	59 (70.2)	25 (29.8)	0.028*
	Separated	3 (30)	7 (70.0)	
	Married	105 (68.2)	49 (31.8)	
	Widow(er)	6 (46.2)	7 (53.8)	
Position in the office	In-charge of the facility	12 (80.0)	3 (20.0)	0.442
	In-charge of a department	14 (77.8)	4 (22.2)	
	In-charge of a section	36 (65.5%)	19 (35.8)	
	Ordinary health worker	111 (64.2)	62 (35.8)	
Formal education	Primary school	35 (20.1)	18 (20.7)	0.355
	Secondary school	108 (62.1)	50 (57.5)	
	High school	20 (11.5)	8 (9.2)	
	University	11 (6.3)	11 (9.2)	
Job tittle	Clinicians	39 (22.4)	20 (22.7)	0.356
	Attendants	67 (38.5)	41 (46.6)	
	Nurses	68 (39.1)	27 (30.7)	
Salary sufficient	Yes	19 (10.9)	4 (4.5)	0.063
	No	155 (89.1)	84 (95.5)	

Table 14: Health workers' future career plans (next 3 years)

Plans	Number (N)	Percent (%)
Further professional development	187	71.4
Leave this facility to another district	8	3.1
Join a health job in private sector	5	1.9
Leave to join a non-health job	5	1.9
Retirement	19	7.3
No plans	27	10.3
Others	11	4.2
Total	262	100.0

Salary Adequacy and Adaptation Strategies

Most of the health workers interviewed (91.29%) reported that they are unable to live on their salaries (Figure 4). They reported using a variety of adaptation strategies to manage living with insufficient salaries, of which minimizing expenditure was the most often cited (43.2%) (See Table 15).

Figure 4: Health workers receive sufficient salary

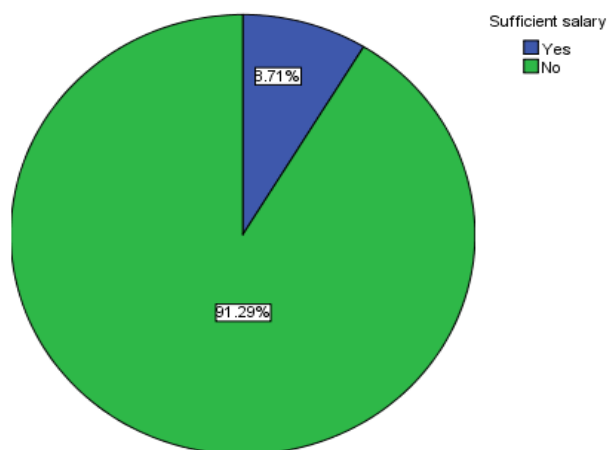


Table 15: Adaptation strategies (N=241)

Adaptation strategy	Number (N)	Percent (%)
Lead low standard of life	39	16.2
Minimize expenditure	104	43.2
Be deprived of personal needs	41	17
Engage in income generating activities	101	41.9

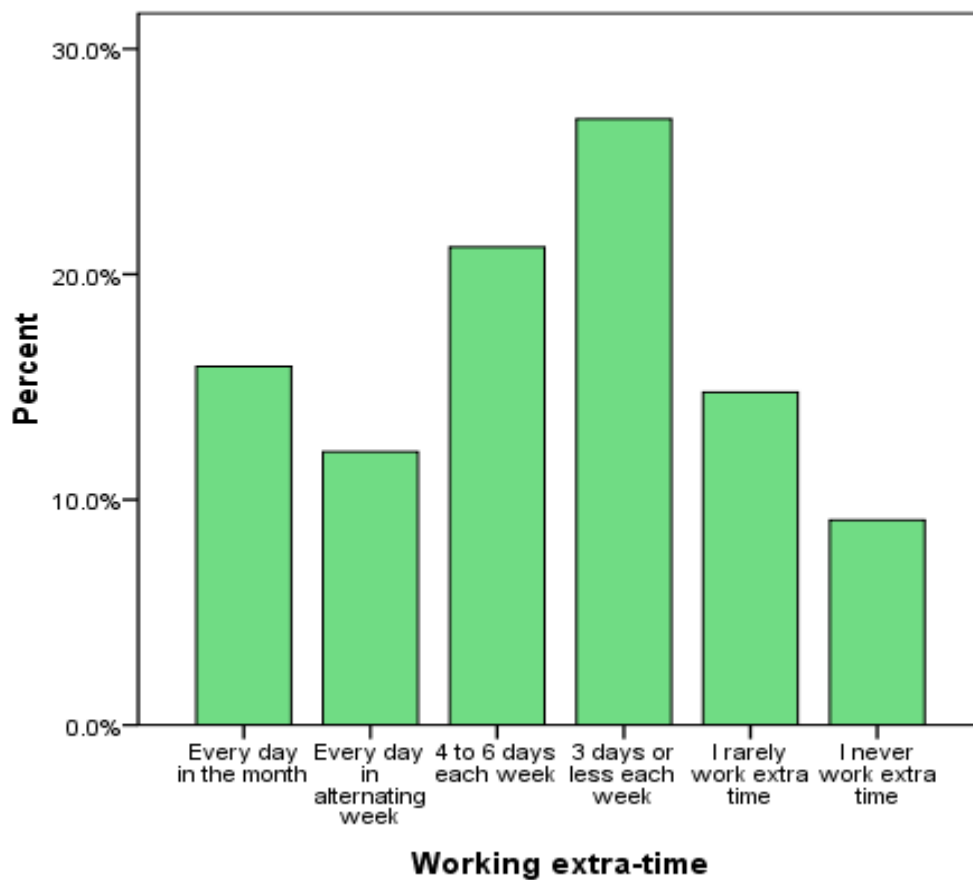
Other Sources of Income

Some health workers use other sources of income to minimize the gap between their salaries and living expenses (See Table 16). The majority (45.1%) mentioned loans as a source of extra income. Agriculture and livestock keeping were also commonly mentioned. Some workers identified allowances for attending training seminars and workshops as a source of income.

Table 16: Other sources of income (264)

Source of income	Number (N)	Percent (%)
Agriculture	95	36
Livestock keeping	57	21.6
Small business	57	21.6
Private practice	6	2.3
Drug shops (community pharmacies and accredited drug dispensing outlets)	10	3.8
Part-time employment	3	1.1
Gifts from friends	13	4.9
Presents from patients	9	3.4
Loans	119	45.1
No extra activity	103	39
Others (Spouse support, house rent, on call allowances)	4	1.6%

Figure 5: Proportion of health worker's work extra-time



Extra time

As shown in Figure 5 above, a significant proportion of health workers work extra time. A small proportion (less than 10%) have never worked extra time. Interviews revealed that very few health workers are paid for this extra time, and, if paid, they are paid inadequately. This challenge is illustrated by the quote on page 12.

Results of Productivity Study

As described in the methodology section, 135 health workers from six districts were observed using the time motion study tool. Table 17 shows the geographical distribution of observed health workers.

Table17: Health worker observed by district

District name	Number	Percent
Masasi District Council	27	20.0
Masasi Town Council	27	20.0
Shinyanga District Council	24	17.8
Shinyanga Municipal Council	27	20.0
Hai District Council	12	8.9
Moshi Municipal Council	18	13.3
Total	135	100.0

Time Utilization

Table 18 shows the average number of minutes spent on particular tasks by the observed health workers. Tasks were categorized as productive and non-productive. Productive time included time spent on direct patient care, indirect care, and hygiene. Non-productive time included absences from work, as well as breaks, collecting salaries, patient wait times, and socializing. The “other” category captured activities that were not listed on the pre-coded observation form—such as the time health workers spent on transit between duty stations, offices, or sections within the facility. On average, health workers spent the greatest amount of their productive time on patient consultations (136 minutes), followed by dispensing medication (80.8 minutes). Unexplained absences (382.7 minutes) accounted for most of health workers’ non-productive time.

Table18: Time spent in productive and non-productive work

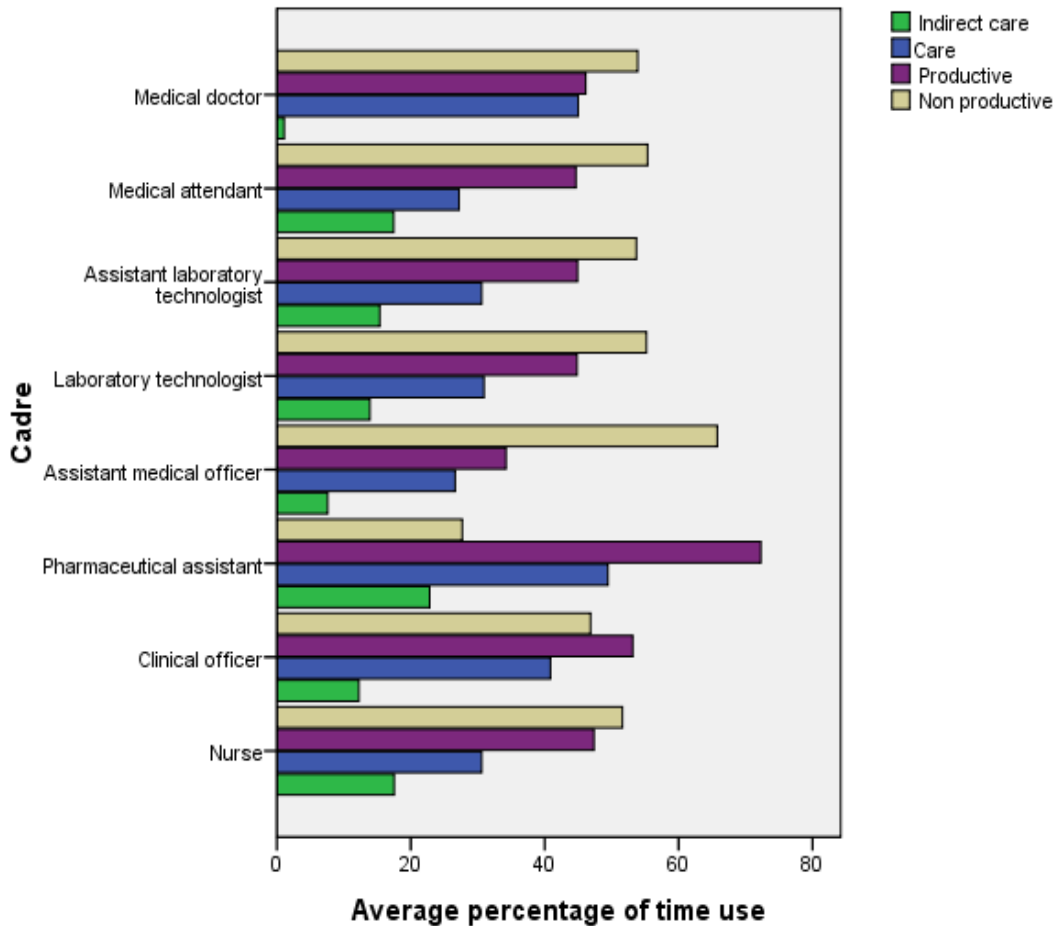
Category	N	Mean (mints)	Standard Deviation	Minimum	Maximum
Productive items					
<i>Direct care</i>					
Consultation	135	136.5	195.04	0	858
Dispensing	135	80.8	140.85	0	798
Health counselling	135	33.4	64.6	0	342
Surgical procedures	135	40.5	99.9	0	642
Investigations	135	60.11	136	0	576
Other	135	22.7	65.52	0	480
<i>Indirect care</i>					
Patient registration	135	20.1	64.19	0	522
Documentation	135	51.3	68.03	0	318
Outreach services	135	0.31	3.62	0	42
Administration	135	2.4	8.21	0	48
Meeting off site	135	14.2	73.55	0	648
Meeting on site	135	42.9	55.2	0	240
Training off site	135	7.87	55.2	0	516
Training on site	135	3.2	19.53	0	180
Cleaning and preparation	135	35.8	46	0	216
Personal hygiene	135	4.4	30.3	0	348
Non-productive items					
Funeral	135	19.6	89.36	0	576
Holiday	135	10	88.95	0	960
Collecting salary	135	2.9	33.57	0	390
Unexplained Absence	135	382.7	237.43	20	1122
Patient wait	135	152.2	139.35	0	570
Break	135	39.7	46.04	0	294
Social visit	135	6.2	15.39	0	90

Table 19: Summary of productivity by cadre (percent of regular working hours)

	All	Nurse	CO	PA	AMO	L. tech	AL. tech	MA	MD
N	135	55	20	2	16	5	15	21	1
Direct care	31	30	41	49	27	31	31	27	45
Indirect care	15	18	12	23	8	14	15	18	1
Non-productive activity	24	21	20	12	36	22	28	24	9
Unobserved at facility	30	31	27	16	30	33	26	31	45
Productivity (overall)	47	48	53	72	34	45	46	45	46
Productivity (percent of time present)	66	70	73	86	49	67	62	65	84

CO=clinical officer, PA=pharmaceutical assistant, AMO=assistant medical officer, L.tech =laboratory technologist, AL .tech=assistant laboratory technologist, MA=medical attendant, MD=medical doctor

Figure 6: Average percentage productivity by cadre



Overall productivity, assessed as the average percentage of time spent on productive work, was found to be 44.7 percent. Analysis of productivity by individual cadres showed significant variation (See Figure 6). The following are illustrative quotes from respondents about productivity:

“Productivity trend is inadequate, health workers do not abide to health ethics and about 60 percent are not committed, only 40 percent are committed” (Masasi)

“Productivity trend is inadequate due to health workers’ overambitiousness to earn more salaries” (Mtwara).

The qualitative findings from Mtwara and Masasi districts support the overall quantitative results. However, during interviews in the Shinyanga region, participants reported adequate health worker productivity, as illustrated by the following narratives:

“Here productivity is about 75 percent, since the council is implementing national policies—though funds are not adequate.” (Shinyanga District Council)

“Productivity is satisfactory, since the council is implementing national policies though funds are not adequate.” (Shinyanga Municipal Council)

Factors Influencing Productivity

Level of facility

Hospitals reported the highest productivity (54.5%) while health centres had the lowest overall productivity (43.8%). This could be related to the fact that some healthcare activities are still centralized at district level, and patients tend to bypass lower-level health facilities in search of better quality care at higher-level facilities (See Table 20).

Table 20: Summary of productivity by facility level

	Hospital	Health Centre	Dispensary
N	18	68	40
Direct care	36	31	32
Indirect care	19	13	18
Non-productive	24	26	21
Unobserved at facility	21	30	30
Overall productivity	55	44	50
Productivity (percent of time present)	69	63	71

Participants in different regions reported various other factors influencing productivity, as demonstrated in the narratives below:

“Some of graduates are not competent, yet regardless being rewarded certificates; others are not committed; unfriendly working environment, such as poor housing, unattractive allowances, poor working tools and delayed promotions.”(Mtwara)

“Things that hinder productivity include delayed promotions, leave allowances, no clear path for career development, and inadequate feedback from superiors.” (Shinyanga)

Factors that could improve productivity were investigated. A majority of health workers (58%) reported raising their monthly salary as the key factor that could improve their current level of productivity. Almost half (46.9%) reported that improving the work environment plays an important role in improving productivity (Table 21).

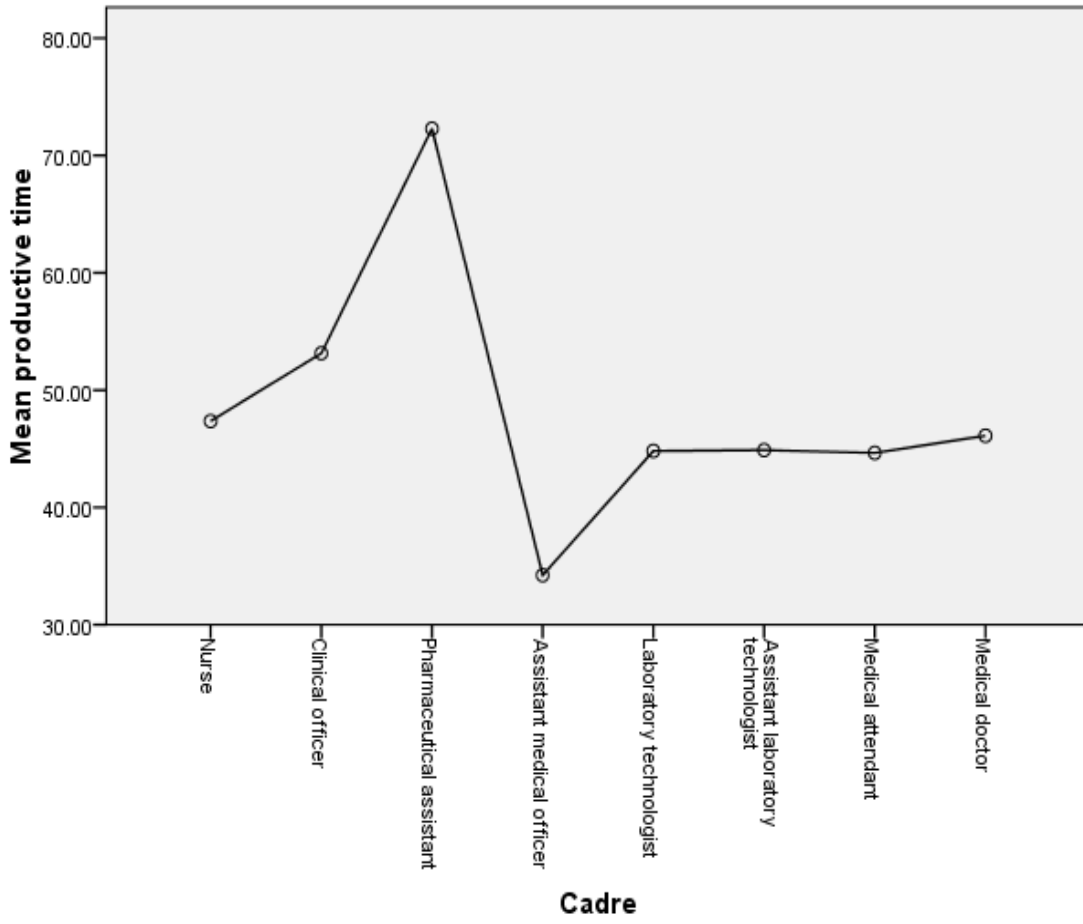
“We recommend discouraging “voda faster system” so that potential workers acquire sufficient competence, health ethics and professionalism. Increase salary and incentives, which should be paid on time; on time promotion, as well as improved social services, such as housing, and ambulances especially to health centres will increase productivity.” (Mtwara)

“Health workers should study for a long time so as to acquire health ethics and competence. Government is supposed to increase salary and incentives, also provision of budgeted money on time, social services should be improved (housing, ambulances especially to health centres).” (Masasi)

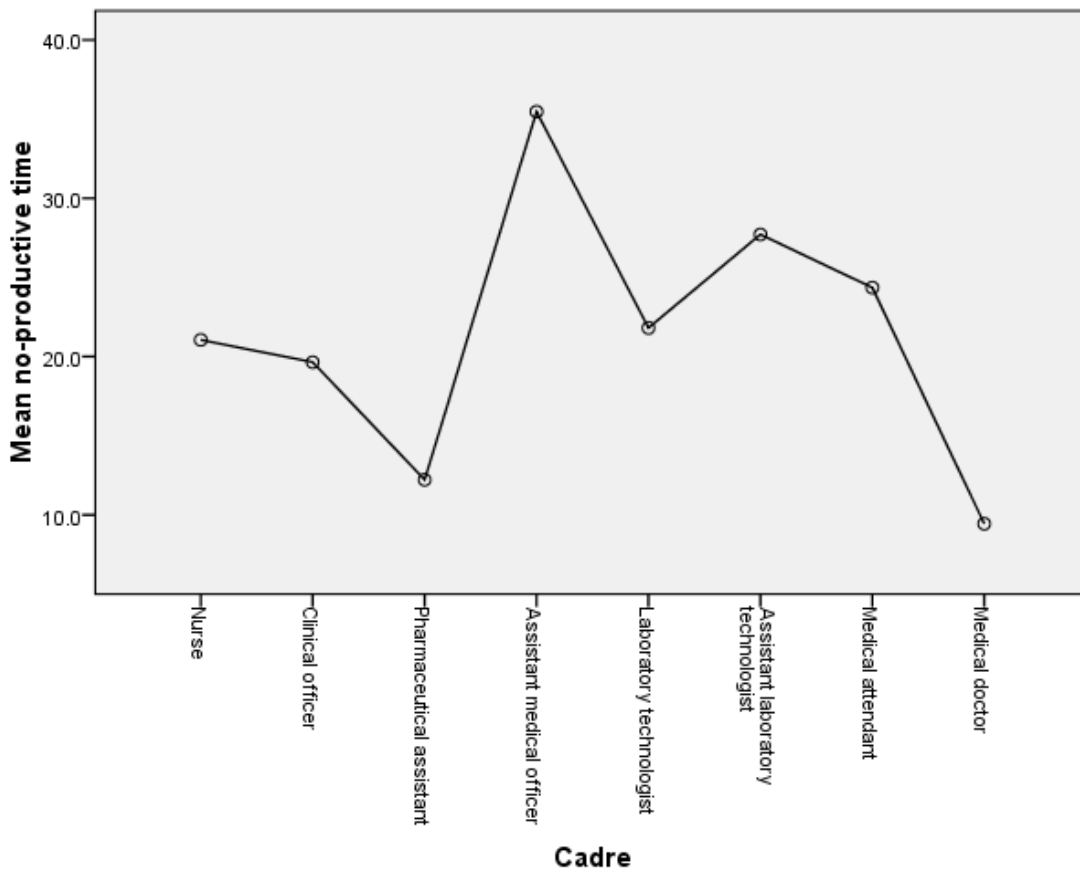
Table 21: Suggested factors to improve productivity

Suggested factors	Number (N)	Percent (%)
More salary	152	58
More feedback on performance	16	6.1
Support for career development	64	24.2
Time for my family	10	3.8
Compensation for risk	41	15.5
Improvement in work environment	123	46.9

Mean plot of time use



Mean plot of total non-productive time



DISCUSSION AND CONCLUSION

This study found that health workers spent 47 percent of their regular working hours on productive activities. This productivity level is consistent with other studies conducted in low income countries. In a study on time utilization conducted in rural health centres in Cameroon, only 27 percent of health workers' time was spent on productive health-related activities, of which the largest proportion was spent on curative clinical work (Bryant and Essomba, 1995). The study found that most non-productive time was spent on patient waiting and unexplained absence. Similar findings were reported in a study conducted in southern Tanzania where high levels of absenteeism were recorded among health workers (Manzi et al., 2012). A 2007 study of health worker productivity in three districts in Tanzania found productivity levels of 57 percent (Kurowski et al. 2007).

However, the interpretation of our productivity findings changes considerably when the amount of time health workers were actually present at health facilities is taken into account. Across all cadres, 66 percent of the time health workers were actually present at the facility is classified as productive, a sharp contrast to the overall 47 percent of productive time in the eight-hour working day. While physicians spent 46 percent of the working day in productive activities, 84 percent of the time they were actually present at health facilities was spent on productive activities. Similarly, nurses and clinical officers were each over 70 percent productive during their time at facilities. This is an important distinction, and it indicates that health workers can be quite productive when properly managed.

As this study did not track health workers once they left the facility, the underlying causes of absence are unclear. However, anecdotal evidence from data collectors suggests that in some cases health workers may leave during the early afternoon when there are fewer patients presenting at the facility (and hence less need for full staffing). If this is a common occurrence, it may be that patient visits are unequally distributed throughout the working day, leading to high burdens on health workers during the morning and low burdens in the afternoon. Low overall productivity may be partially explained by informal redistribution of labour throughout the day as fewer health workers are needed.

The low overall productivity levels found suggest that health workers are being underutilized. However, the high productivity observed while health workers were present at facilities suggests the potential for high productivity when health workers are properly managed. For most cadres, absences are the primary driver of non-productive time during the working day. Whether these absences negatively influence the productivity of the facility is dependent on the patient load.

These findings constitute a challenge to the prevailing human resource management practices in health facilities. In this assessment, we have noted that low productivity levels are caused by various factors, and are not necessarily related to incentives and other forms of motivation but also include intrinsic factors such as love for the job. We found that allowances and incentives were not provided in health facilities. A majority of health workers pointed out that to improve productivity in their workplace, managers should be strict in addressing this problem. It is also important to note that in health centres and dispensaries there are long periods of time during which there are no patients available, especially in rural areas. During these times, health workers do not engage in productive activities. Improving conditions in health facilities could be one way to curb this type of unproductivity, as improved conditions could attract more people to access services.

The assessment showed that 84 percent of health workers dissatisfied with their salaries. The majority of these workers are adapting by minimizing their daily expenditures. In-depth interviews revealed that most health workers cannot live entirely on their salaries. Therefore, they must supplement their salaries with other sources of income, such as agriculture (36%) and small business (21.6%). The need to supplement their salaries with other sources of income may contribute to absenteeism.

Health workers also consider non-salary benefits (like housing, insurance, and training opportunities) to be very important components that are missing from their current employment situations. This is consistent with a recent study that found poor working environment to be one of the main factors contributing to poor productivity among nurses in Tarime, Tanzania (Oswald, 2012).

Our assessment also shows that a majority of health workers have the desire to further their educational status. Health workers' interest in further career development could indicate the potential to improve productivity if coupled with improved working conditions. Although it was not the focus of this study, informants reported that several interventions, programs and projects are being introduced into the district health system without considering how these could impact the availability of human resources for clinical services.

The study found that, many healthcare tasks are still performed by untrained or low-skilled workers, who are assigned duties that should be performed by more trained personnel. This has resulted in poor quality of care as evidenced by the phenomenon of bypassing lower level to higher level health facilities in search of quality care and better working facilities. The impact of the bypassing phenomenon includes heavier workloads in higher-level facilities as these facilities take up the burden of lower-level facilities, hence compromising the quality of health services.

Finally, we found that the highly trained clinical cadres in district health systems are predominantly playing a non-clinical role, leaving most of the clinical work to intermediate cadres. This raises concern over resources spent to generate a residual knowledge that ends up being not utilized.

Recommendations

Based on our findings, we offer the following recommendations for improving the productivity of health workers in district health systems:

1. Given the motivators identified by this study, managers should develop participatory approaches to understand which factors can contribute to increased job satisfaction in each facility. For example, a dialogue involving health workers, service users, and employers can reveal locally relevant and sustainable means of motivating health workers that build on the important non-monetary motivators identified here: continuing education, job security, family, respect in the community, etc. These dialogues could be conducted on a regular basis to determine specific locations and cadres in which to invest.
2. Facility managers should explore methods to track the frequency of and reasons for health worker absences during the work day. For example, if absences are due to a lack of patients during certain times of day, then managers should respond by redistributing the times of patient visits or adjusting staffing levels. Proper management of health worker responsibilities and time is essential to utilizing scarce human resources to their fullest potential.

3. Future staffing norms should be developed in the context of workloads, estimated through the Workload Indicators of Staffing Need (WISN) method. This method assures that allocation of human resources is based on standardized workload indicators, hence improving efficiency and productivity.
4. Proceeds from performance-based financing mechanisms should be used to reward health workers who contribute to facility productivity. For example, facilities that are using the National Health Insurance Fund or the Community Health Fund could use some of the revenue generated through these mechanisms to design incentive payment plans based on a specific set of performance indicators. In addition, opportunities for further training and study should be provided for health workers with a desire to improve their education and training.

APPENDIX 1: WORKPLAN

Activity	Duration (Number of days)					
Proposal development / preparation	5					
Submission for ethical clearance		4				
Training of research team		1				
Data collection (field work activities)			15			
Data entry, cleaning, analysis				10		
Report writing					7	
Dissemination of results						1

APPENDIX 2: KEY INFORMANT INTERVIEW GUIDE

ASSESSMENT OF PRODUCTIVITY AMONG HEALTH CARE WORKERS IN SIX LOCAL GOVERNMENT AUTHORITIES IN TANZANIA

KEY INFORMANT INTERVIEW GUIDE

Preamble

BMAF is conducting a baseline assessment of productivity among healthcare workers in six local government authorities in Tanzania. Your responses will remain anonymous and confidential. May we proceed with the interview?

As a frontline healthcare worker implementer, we would very much like your insight and inputs, thus if you do agree, can you please verbally consent?

Name of interviewer _____

Date of interview _____

Name of facility _____

Type of facility _____

Interviewee description

Position of interviewee _____

Number of years in the facility _____

Type of cadre _____

Gender _____ Date of birth _____

Type of service responsible _____

Education background _____

I. Tasks

1. What type of work related activities do you during the day? Describe a typical day.
2. Let us talk about your daily tasks:
 - a. What tasks are allocated to you?
 - b. Which services do your clients expect from you? Tell us about the services that clients demand from you when you meet them.
 - c. What correlation is there between the tasks allocated to you and your clients' expectations?
3. Now let us talk about your job description:
 - a. According to your employment status, what is your job description?
 - In which position are you employed?
 - Do you know the job description for that position? Give details.
 - b. What is the relationship between your daily tasks and your job description?
 - Are there any tasks that are not within your job description but you still have to perform them? Mention those tasks, with reasons.
 - Are there any tasks that are within your job description but you can't perform them here? Mention them, with factors that hinder you.
4. Let us talk about the relationship between your daily tasks and your training.
 - a. Do you think there is a correlation between your training and the tasks that you perform here? Please explain your answer.
 - b. Regarding the tasks you perform here:
 - Did you receive training for each one of them?
 - In which tasks are you untrained?
 - Are there tasks that you must perform despite having no training for the same? Mention them and give reasons.
 - How do you cope with the tasks for which you are untrained?
 - c. Regarding your training and skills:
 - Do you get an opportunity to utilize your training and skills effectively here? Please explain your answer.

- Among the tasks, which you are capable of, which ones do you not practice here? Please give reasons.
 - Which areas of your training and skills are you unable to utilize effectively here? Please explain.
5. Let us talk about the challenges that you face in fulfilling your daily tasks.
 - a. Mention those challenges, hindrances or problems
 - b. How do you manage with those challenges?
 - c. Do you think you are adequately prepared to face those challenges? Why?
 6. Please give us your opinions about the various tasks performed by workers of different cadres in the health sector (clinicians, nurses, and attendants).
 - a. What can you say about the working relationship between these cadres?
 - b. Give us your opinion about the tasks performed by lower cadre health workers
 7. Let us talk about human resources situation in the health sector.
 - a. What is your opinion of the human resources situation in the health sector?
 - b. How do you cope with the shortage of health workers in your health facility?
 - c. How do you manage to handle your duties in this situation of health worker shortages?

II. Productivity

1. Tell us about the bulk, intensiveness or difficulty of your daily tasks.
 - a. How do you perceive your work in terms of its bulk, intensiveness, or difficulty? How is your workload? Please explain.
 - b. How does your perception of the workload affect your performance in general?
2. Let us talk about the way clinicians and nurses share the workload.
 - a. How is the workload distributed between clinicians and nurses?
 - b. Is the distribution fair? Why do you think so?
 - c. Please tell us about any shortcomings in the distribution.
 - d. What differences in workload are there between these two main categories of health workers?
 - e. How do those differences affect health workers' performance in patient care?

3. Let us talk about the distribution of the workload between higher cadre and lower cadre health workers.
 - a. What tasks do lower cadre health workers (clinical officers, assistant clinical officers, nurse assistants and attendants) perform in this facility?
 - b. How is the workload distributed between the higher cadres (doctors and nurses) and the (mentioned) lower cadres?
 - c. Is the distribution fair? Why?
 - d. What differences in workload are there between higher cadre and lower cadre health workers (as categorized)?
 - e. How do those differences affect health workers' performance in patient care?
4. In your opinion, do you think that there is a difference of workload among the different department of the health facility? If there are any differences, how does this affect performance in the different department?
5. In your opinion, who (which cadre) usually bears the burden of workload when there is a shortage of health workers?

III. Work environment and motivation

1. How do you feel about your job? Are you satisfied with it? Why?
2. What motivates you to remain in your post? Where do you see yourself in 3 years?
3. What do you like about your job? What would you like to change about it?
4. Can you live on your salary? In what means do you supplement your salary?

IV. Recommendations

1. What would you recommend to be done at facility level to improve the current state of limited health workers?
2. What would you recommend at district level (to the DMO) to do so as to address the issue of limited HRH in your district
3. What would you recommend at national level to be done so as to address the problem of limited HRH in Tanzania?

APPENDIX 3: HEALTHCARE WORKERS QUESTIONNAIRE

ASSESSMENT OF PRODUCTIVITY AMONG HEALTH CARE WORKERS IN SIX LOCAL GOVERNMENT AUTHORITIES IN TANZANIA

HEALTH CARE WORKERS QUESTIONNAIRE

Preamble

BMAF is conducting a baseline assessment of productivity among healthcare workers in six local government authorities in Tanzania. Your responses will remain anonymous and confidential. May we proceed with the interview?

You are among the health workers of your cadre in this district that have been randomly selected to participate in this study as a respondent. Your participation is entirely voluntary with no direct benefits to you personally, although your honest responses will contribute towards improving health workers' situation in this country.

Your participation in this study is completely risk free, and any information you provide will be kept solely by BMAF and will be treated in the strictest confidential manner.

If you need any further clarifications, please feel free to ask me (the interviewer).

May we now please have your consent for the interview?

CONSENT GIVEN

1=Yes

2=No

Major Sections included in this questionnaire

- I. DEMOGRAPHIC INFORMATION
- II. YOUR EMPLOYMENT STATUS
- III. YOUR TRAINING AND OCCUPATION
- IV. YOUR JOB: CONDITIONS OF EMPLOYMENT

I. DEMOGRAPHIC INFORMATION

Q	Question	VARIABLE CODE	R.C
	Questionnaire number	IDNUM	
	Interviewer's code number	INTCODE	
	District name: _____	DISTR	
1	Gender 1=Male 2=Female		
2	Your year of birth? 19_____		
3	Marital status 1=Never Married 2=Separated/Divorced 3=Married 4=Widow(er)		
4	Highest level of formal education attained 1=Primary School 2=Secondary School (Form 4) 3=High School (Form 6) 4=University		
5	How many years of general formal education have you had? a) Primary school _____years		

	b) Secondary school _____years c) Others (specify) _____years		
6	Highest level of professional education attained 1=Untrained 2=Certificate (please specify) _____ 3=Diploma (please specify) _____ 4=Advanced Diploma (Please specify) _____ 5=First degree (please specify) _____ 6=Postgraduate (please specify) _____		

II. YOUR EMPLOYMENT STATUS

7	For how long have you worked in the health sector? _____years		
	For how long have you worked in this district? _____years		
	For how long have you worked in this facility? _____years		
	What is your job title? (Tick the one that applies) 1=Medical Officer 2=Assistant Medical Officer 3=Clinical Officer 4=Assistant Clinical Officer 5=Nursing Officer 6=Public Health Nurse 7=Nurse Midwife 8=Trained Nurse 9=MCHA 10=Medical Attendant 11= Other		

	<p>What is your position in this facility?</p> <p>1=In Charge of the Facility</p> <p>2=In Charge of a Department</p> <p>3=In Charge of a section</p> <p>4=Ordinary health worker</p>		
	<p>Are you aware of your job description?</p> <p>1=Yes</p> <p>2=No</p>		
	<p>Please mention the main items in your job description (code Y for mentioned tasks, N if not mentioned)</p>		
	Direct patient care		
	Diagnosing		
	Prescribing		
	Dispensing		
	Minor surgical procedures		
	Major surgical procedures		
	Administering injections		
	Cleaning the facility		
	Health education		
	Supervising co-workers		
	Administrative duties		
	Others (specify)		

III. YOUR EDUCATION AND TRAINING

This next section asks you about your training in a health field.

Please answer the following questions about all health-related training that you have received.

	<p>What type of basic training do you have?</p> <p>1=Medicine</p> <p>2=Nursing</p> <p>3=Pharmacy</p> <p>4=Laboratory Technology</p> <p>5=Radiography</p> <p>6=Other (please specify)</p>		
	<p>How long did your basic training take? ___ years</p>		
	<p>What was the name of the training institution or program in which you completed your studies? _____</p>		
	<p>In what region (in Tanzania) or country (if outside Tanzania) is it located?</p> <p>Region/ Country _____</p>		
	<p>When did you complete your basic training? (year)___</p>		
	<p>What award did you receive to certify completion of your studies?</p> <p>1=Certificate</p> <p>2=Diploma</p> <p>3=First degree</p> <p>4=Other (specify)</p> <p>5=No award received</p>		
	<p>Have you had any specialty (or upgrading) training that lasted one year or more following your basic training?</p> <p>1=Yes</p> <p>2=No</p>		
	<p>Please provide information about the upgrading or specialty training that is</p>		

	most applicable to your current job title as follows :												
	Area of specialization/upgrading _____												
	Duration of study (in years) _____												
	Name of training institution _____												
	When completed (year) _____												
	<p>Award given (tick the one that applies)</p> <p>1=Certificate</p> <p>2=Diploma</p> <p>3=Advanced diploma</p> <p>4=First degree</p> <p>5=Masters Degree</p> <p>6=Other (specify) _____</p>												
	<p>Have you attended any other upgrading or specialty training courses that lasted one month or more?</p> <p>1=Yes</p> <p>2=No</p>												
	<p>Please provide information about any other upgrading or specialty training courses you have attended that lasted one month or more, in the following table:</p> <table border="1" data-bbox="272 1682 1179 1896"> <thead> <tr> <th>Specialty/course</th> <th>Duration of study (in months)</th> <th>Name of training Institution</th> <th>Year of completion of studies</th> <th>Award given</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Specialty/course	Duration of study (in months)	Name of training Institution	Year of completion of studies	Award given						<p>SPEC1</p> <p>DUR1</p> <p>INST1</p> <p>YCOMP1</p> <p>AWD1</p> <p>SPEC2</p>	
Specialty/course	Duration of study (in months)	Name of training Institution	Year of completion of studies	Award given									

						DUR2	
						INST2	
						YCOMP2	
						AWD2	
						APEC3	
						DUR3	
						INST3	
						YCOMP3	
						AWD3	

V. CONDITIONS OF EMPLOYMENT

	<p>How would you rate your satisfaction for your job?</p> <p>1=Very satisfied</p> <p>2=Satisfied</p> <p>3=Dissatisfied</p> <p>4=Very dissatisfied</p>		
	<p>What satisfies you in your job? (Tick all that apply)</p> <p>a) My salary is adequate</p> <p>b) The non-salary benefits related to my position</p> <p>c) The community supports me</p> <p>d) I have social prestige/respect from the community</p> <p>e) I receive privileges because of this work</p> <p>f) Other (please specify) _____</p>		
	<p>What dissatisfies you about your job? (Rank in order of importance: 1=most important, 2=2nd in importance etc.)</p> <p>a. My salary is too low</p> <p>b. This place is too remote</p> <p>c. Can't find time to do extra job</p> <p>d. Too many complaints from the community</p> <p>e. Too much work,</p> <p>f. No time for myself and family</p> <p>g. This work is too risky</p>		
	<p>21) What motivates you to remain in your post? (tick all that apply)</p> <p>a. I love my job</p>		

	b.I have job security		
	c.I have opportunity for further studies		
	d.I have opportunity to do part time jobs/private practice		
	e.I have good business opportunities		
	f. I have research opportunities		
	g.I have continuing education (seminars, workshops) opportunities		
	h.There are good school facilities for my children		
	i. The climate is good		
	j. There is reliable transport and communication infrastructure		
	k.My family lives here		
	l. I have invested here		
	m. I am respected in this community		
	n.I am too old and can't go to anywhere else now		
	o.There are no job opportunities anywhere else because I am undertrained		
	p.It is a temporary station as I look for better options		
	q.Others (specify)		
	Where would you like to see yourself in the next 3 years? (tick all that apply)		
	a. Further professional development		
	b. Leave this facility to another district		
	c. Join a health job in the private sector		
	d. Leave to join a non-health job		
	e. Retirement		
	f. No plans		
	g. Others (specify) _____		

	<p>In your current position is your salary sufficient for you to live on it?</p> <p>1=Yes</p> <p>2=No</p>		
	<p>How do you manage with an insufficient salary? (tick all that apply)</p> <p>a. I lead a lower standard of life</p> <p>b. I minimize my expenditures</p> <p>c. I deprive myself and my family of some personal needs</p> <p>d. I engage in some other income generating activities</p> <p>e. Other (please specify) _____</p>		
	<p>Which activities do you carry out to earn extra income to supplement your salary? (tick all that apply)</p> <p>a. Agriculture</p> <p>b. Livestock keeping</p> <p>c. Small businesses (non-health sector)</p> <p>d. Private practice</p> <p>e. Drug shop owner</p> <p>f. Part time employment outside health sector</p> <p>g. Seminars and workshops</p> <p>h. I have no extra activity</p>		
	<p>What other sources of income do you have which give you extra cash? (tick all that apply)</p> <p>a. Gifts from friends, relatives, well wishers and sympathizers</p> <p>b. Presents from patients and/or their relatives</p> <p>c. Loans</p>		

	d. Others (specify		
	e. None		
	<p>Last month, how many days did you work extra time in a month?</p> <p>1= every day in the month</p> <p>2= every day in alternating weeks</p> <p>3=4 to 6 days each week</p> <p>4=3 days or less each week</p> <p>5=I rarely work extra time (it's less than all of above)</p> <p>6=I never work extra time</p>		
	<p>How are you compensated for your extra work?</p> <p>a. I am paid extra duty allowance</p> <p>b. I am awarded a day-off</p> <p>c. Other (specify)</p> <p>d. No compensation</p>		
	Please mention your monthly net salary _____Tshs.		
	<p>Do you feel that your monthly salary fairly compensates you for the skills and time you devote to your work?</p> <p>1=Yes</p> <p>2=No</p>		
	If you were to propose an amount of money that you believe should be a fair estimate of what you should be paid as a monthly net salary, what would it be? _____Tshs.		
	<p>What other non-salary benefits do you receive in your work? (tick all that apply)</p> <p>a. Free accommodation</p> <p>b. Free treatment for self and/or family</p> <p>c. Transport facilities</p>		

	d. Clear opportunity for promotion		
	e. Opportunities for professional development		
	f. Other (specify) _____		
	Rank in order of importance the factors that would make you feel more satisfied and motivated to remain in your job (number 1 for the most important, 2 for the second in importance etc)		
	a. I would like more salary		
	b. I would like to have more feedback on my performance		
	c. I would like to be supported to advance my career		
	d. I would like there to be opportunities for my family and my children		
	e. I would like to be compensated for the risks I am going through		
	f. I would like an improvement n the working environment and tools		
	g. others (specify)		

Thank you very much for your help with this important study.

Please be assured that your responses will be kept entirely confidential.

APPENDIX 4: TIME-AND-MOTION STUDIES: INSTRUCTIONS FOR RESEARCH ASSISTANTS

ASSESSMENT OF PRODUCTIVITY AMONG HEALTH CARE WORKERS IN SIX LOCAL GOVERNMENT AUTHORITIES IN TANZANIA

Instructions

Preamble

BMAF is conducting a baseline assessment of productivity among healthcare workers in six local government authorities in Tanzania. Your responses will remain anonymous and confidential. May we proceed with the interview?

In order to estimate the actual productivity and types of duties that health workers engage in, we need to know how they use their time while at work. Therefore, you, the research assistants of BMAF, will visit health facilities in six districts of the country and observe how health workers make use of their time (time and motion studies).

Time and Motion Studies

A definition

A trained observer follows between 3 and 6 health workers for an entire shift, recording actions at three-minute or six-minute intervals. The observer uses a digital wristwatch to exactly determine the moment of observation. A pre-coded form is used to record what the health worker is doing exactly at the moment of observation.

T&M in more detail

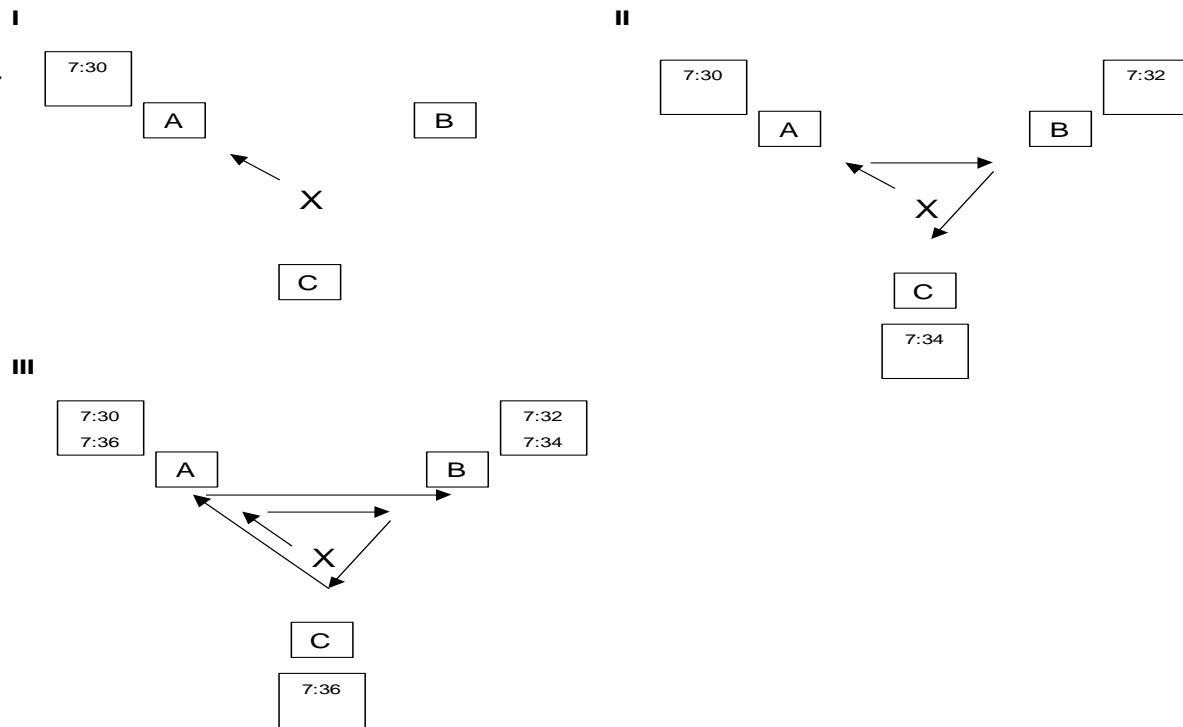
Let's assume that 3 health workers (A, B, C) are observed in 6-minute intervals by observer (X), further, that the observation period starts at 7:30 a.m., the regular start of the morning shift (c.f. figure 1). At exactly 7:30 a.m., research assistant X (from now on called X) will observe and document what health worker A is doing at exactly that moment (I). Then, almost two minutes remain for X to walk to the workplace of health worker B. At exactly 7:32 a.m., X will observe and document what health worker B is doing at exactly that moment. Again, almost two minutes remain for X to move to another workplace, now to observe health worker C. At exactly 7:34 a.m., X will observe and document what health worker C is doing at exactly that moment (II). Now almost two minutes remain for X to return to the workplace of health worker A. At exactly 7:36 a.m. X will observe and document what health worker A is doing at exactly that moment. At this stage, the circular movement of observer X is completed for the first time.

He /She now will continue with the observation of health worker B (III), then C, and again A and by this continue circular movements in a constant pattern. These constant movement patterns and observations have to be repeated over the whole period of the working time. Please note the resulting timetable for the observations of each health worker in figure 1. As the result of the constant and recurrent observation pattern, each health worker is observed every six minutes. However, observations take place every two minutes.

The observation itself is some sort of a snapshot, comparable to a photo fixing the activity of the health worker, exactly at the prescribed moment in time. It is important that the observation takes place exactly at the prescribed point in time (e.g. 7:32 a.m.). To do so, a digital wristwatch is required.

Figure 1

Time and motion study – the process of observation



In the following, a few thoughts on the act of observation, The observation should primarily be direct, or in other words, the research assistant should see what the health worker is doing exactly at that moment. Direct observation will sometimes require an intrusive behavior. For example, the observer has to enter a room where the health worker stays or works. The rigid time schedule of the time and motion study might not allow the observer to behave as courteous as

Qn. 1. Provider type (Cadre):

1. Medical Officer _____
2. Clinical Officer_____
3. Nurse Officer _____
4. Medical Assistant_____
5. Laboratory Staff_____

Qn. 2. Gender: Male_____ Female_____

1. What is your role at this facility?

- a. Facility in charge
- b. Program coordinator
- c. Medical Personnel
- d. Others

2. How long have you been working in the Health sector?

- a. Less than one year
- b. Less than five years
- c. More than five years

3. How long have you been working at this facility?

- a. Less than one year
- b. Less than five years
- c. More than five years

4. Do you have a written job description that clearly defines your tasks and responsibilities?

Yes No

5. Has anyone discussed your job description with you?

Yes No

If yes, who discussed with you?

- a. Supervisor
- b. Facility manager
- c. MO/CO
- d. Coworker
- e. other

6. Do you ever work more than your scheduled hours?

Yes No

(If no, go to question #10)

7. If yes, what are the reasons?

- a. High number of patients
- b. Coordination meetings

- c. Administrative matters
- d. Shortage of staff
- d. Other: please specify _____

9. How often do you have to work more than your scheduled hours?

- a. Once a month
- b. Once a week
- c. More than once a week
- d. Other: please specify _____

10. Do you ever work less than your scheduled hours? Yes No

(If no, go to question #12)

11. If yes, what are the reasons?

- a. Low number of patients
- b. Worked more than scheduled hours on another day
- c. Other: Please specify _____

12. Do you have a supervisor? Yes No

(If no, go to question #18)

13. If yes, who is your supervisor? **(Circle all that apply)**

- a. Facility manager
- b. Departmental Head
- c. Medical Officer
- d. Clinical Officer

e. Nurse/Midwife

f. Other: specify _____

14. What happens when you are supervised? (Circle all that apply)

a. Records are examined

b. Work observed

c. Feedback given

d. No feedback given (**go to number 17**)

e. Discuss problems encountered

f. Administrative updates given

f. Other: please specify _____

15. How often do you receive feedback from your supervisor on your performance?

a. Once a week

b. Once every two weeks

c. Once every three weeks

d. Once a month

e. Other: please specify _____

16. When was the last time you received a supervision visit?

a. Within the past 7 days

b. Within the last month

c. Within the last 3 months

d. I don't remember

e. I never receive supervision visits

17. If you have been working at this facility for at least one year, have you ever received a performance evaluation?

Yes No

(If no, go to question #20)

18. If yes, did you feel that you were evaluated fairly?

Yes No

19.

19.a Were you given reasons?:

19b. Were you satisfied with the given reasons?

20. Do you have opportunities for promotion in your position?

Yes No

(If no, go to question #22)

21. If yes, when were you promoted last?

22. Do you receive any non-financial incentives for working at this facility?

Yes No

(If no, go to question #24)

23. If yes, please briefly describe the non-financial incentive:

a. Verbal recognition

b. Written recognition

c. Free health care/medicines

d. Other: please specify _____

24. Do you receive any financial incentives in addition to your regular salary?

Yes No` (If no, go to question #30)

25. If yes, please explain

Describe incentive:

a. Team-based incentive? Yes/No

b. Individual? Yes/No

c. Performance-based? Yes/No

d. Rural/Hardship? Yes/No

e. General (for everyone)? Yes/No

26. How often are incentives given?

a. Monthly

b. Quarterly _____

c. Every six months _____

d. Yearly _____

e. Other (please specify) _____

27. Do you feel motivated to do your work at this facility?

Yes No

28. Please explain why you feel this way

29. What are factors that could influence health worker motivation? (Read Options and circle all that apply)

a. Living and working conditions

b. Incentives

d. Supportive supervision

e. Possibility for professional advancement/growth

f. Ability to influence decision-making

g. Other: please specify _____

30. Do you have any suggestions about how your job or working conditions could be improved?

APPENDIX 5: DATA ABSTRACTION SUMMARY FORM

Assessment of Productivity among Healthcare Workers in Six LGA

Date of interview: ____/____/2013

Title of the document	Document type	Financial Investment on HRH	Non-Financial Investment on HRH	Any other intervention on HRH	Specific guideline	Remarks

APPENDIX 6: INFORMED CONSENT FORM

ASSESSMENT OF PRODUCTIVITY AMONG HEALTH CARE WORKERS IN SIX LOCAL GOVERNMENT AUTHORITIES IN TANZANIA

Preamble

The BMAF is conducting a baseline assessment of productivity among health care workers in six local government authorities in Tanzania. You are among the health workers of your cadre in this district that have been randomly selected to participate in this study. You are also invited to participate in this study because you are a government official on health-related matters in the district. Your participation will assist us in gathering information that will be used by the District Council for planning and management of human resources for health in the district.

If you decide to participate, you will go with the interviewer to a private area to complete an interview. The interviewer will ask you work related questions on the duties you perform, motivation schemes and challenges. The interview will take approximately one hour of your time.

Your participation in the study is completely voluntary. You can withdraw from the study at any time. You can choose not to answer certain questions without any conditions or penalty impinged on you.

Any risk of participation is minimal. There will be no incentives for your participation; however, the information you provide may help improve health service delivery in the country. The information obtained in this interview will be shared only with the researchers involved in this study.

Your name and other personal information that can reveal your identity will not appear on the questionnaire or in reports or presentations of the study or study findings. We value your participation and consider the information you can provide very important.

If you think you have been harmed because of your participation in the study or if you would like more information about the study please contact.

Benjamin Mkapa AIDS Foundation (BMAF),

Chole Road, Plot No.372
P.O.Box 76274, Dar es Salaam, Tanzania

If you have any concerns about your rights as a study volunteer, please contact,

Chairperson

Medical Research Coordination Committee (MRCC)

Po Box 9653 ,Dar-es-Salaam.

Tel: Office 022-2 121400

Statement of research participant

I understand the purpose of this study and my participation will help the research team to gather the required information, and that there is no any harm to my health.

(Tick one option below depending on your decision)

I agree to participate in this study

I will not participate in this study

Participant signatureDate.....

Title of the participant

Confirmation of consent (to be completed by a researcher, if the participant has signed the form in advance)

On behalf of the research team, I have confirmed with the participant that s/he has no further questions and wishes to participate in this study.

Researcher signature:Date:

REFERENCES

- Bryant, M. and RO Essomba. 1995. "Measuring time utilization in rural health centres." *Health Policy and Planning* 10(4):415-22.
- Chandler, et al. 2009. "Motivation, Money and Respect: A mixed-method study of Tanzanian non-physician clinicians." *Social Science and Medicine* 68(11):2078-2088.
- Dolea et al. 2010. "Evaluated Strategies to Increase Attraction and Retention of Health Workers in Remote and Rural Areas." *Bulletin of the World Health Organization* 88(5):379-85.
- Hermann et al. 2009. "Community Health workers for ART in sub-Saharan Africa: learning from experience – capitalizing on new opportunities." *Human Resources for Health* 7:31.
- Kurowski et al. 2007. "Scaling Up Priority Health Interventions in Tanzania: the human resources challenge." *Health Policy and Planning* 22(3):113-27.
- Ledikwe et al. 2013. "Evaluation of a Well-Established Task-Shifting Initiative: the lay counselor cadre in Botswana." *PLoS ONE* 8(4):e61601.
- Manzi et al. 2012. "Human Resources for Health Care Delivery in Tanzania: a multifaceted problem." *Human Resources for Health* 10(3):110-1186.
- Ministry of Health and Social Welfare (MOHSW). 2008. *Human Resource for Health Strategic Plan: 2008-2013*. Dar es Salaam: Government of the United Republic of Tanzania.
- Oswald, A. 2012. *The Effect of Working Environment on Workers Performance: the case of reproductive and child health care providers in Tarime district*. Dar es Salaam: Muhimbili University of Health and Allied Sciences.
- Sousa-Poza, Alfonso and Alexandre Ziegler. 2003. "Asymmetric Information About Workers' Productivity As a Cause for Inefficient Long Working Hours." *Labour Economics* 10(6):727-747.
- Van Damme et al. 2008. "Scaling Up Antiretroviral Treatment in Southern African Countries with Human Resource Shortage: how will health systems adapt?" *Social Science and Medicine* 66(10):2108-21.



For more information, contact:

Benjamin William Mkapa HIV/AIDS Foundation
Mwai Kibaki Road, Plot No.557, Kawe, Dar es Salaam.
P.O.Box 76274, Dar es Salaam, Tanzania
Tel:+255 22 2618557-9
Fax:+255 22 2618560
Email: info@mkapahivfoundation.org
Website: www.mkapahivfoundation.org