Research Article

Time–motion study of the multipurpose health worker in the primary health center and subcenters in Kanbha, Ahmedabad district, Gujarat

Anand G Shah, Bansi Davda, Sonal Parikh, DV Bala

[1]Department of Community Medicine, Smt. NHL Municipal Medical College, Ahmedabad, Gujarat, India.
Correspondence to: Anand G Shah, E-mail: adreams88@gmail.com

Received June 22, 2015. Accepted July 15, 2015

Abstract

Background: A male subject is one of the two staff members of the studied subcenter—the grass root-level facility to provide comprehensive primary health care to the community—working as a multipurpose health worker (MPHW). The extent of services that a male health worker is anticipated to provide under the MPHW scheme is extensive and comprises promotive, preventive, and curative services.

Objective: (1) To assess the time spent by MPHW in each activity through a time–motion study; (2) to assess the MPHW's and medical officers' perceptions about priority given to MPHW's tasks.

Materials and Methods: A time–motion study comprising time–motion observations of time consumed in each activity, the content of the activity, structured interviews for data about personal and professional profiles of the respondents, and their insights about the work was conducted at Kanbha primary health center (PHC), Daskroi taluka, Ahmedabad district, Gujarat, India, in October 2013.

Result: The mean age of the MPHW was 26.33 ± 5.13 years. The average starting time of the MPHW during the observed days was found to be 9:54 am and the average ending time of work was 2:16 pm, making the average total working hours as 4 h 21 min, which was 4 h and 39 min less than the designated time. Maximum time (30.17%) was spent sitting idle in the cabin, reading newspaper, and doing nonwork-related activities.

Conclusion: Highest time was spent for sitting idle and lunch break, and the main works such as field activity and immunization were given much less time. The priorities given to the tasks of MPHW by the MPHWs and MOs differ, which shows the confusion between the superior authority and the MPHWs.

KEY WORDS: Time–motion study, MPHW, Kanbha PHC

Introduction

A male subject is one of the two staff members of the studied subcenter—the grass root-level facility to provide comprehensive primary health care to the community—working as a multipurpose health worker (MPHW). The extent of services that a male health worker is anticipated to provide under the MPHW scheme is extensive and comprises promotive, preventive, and curative services.[1] Their duties comprise activities in the subcenter from where they function and the field activities are associated with stated population or geographic areas allocated from time to time. Normally, they will be assigned 5,000 populations depending on the density of population and the geographic terrain of the area.

Access this article online	
Website: http://www.ijmsph.com	Quick Response Code:
DOI: 10.5455/ijmsph.2016.2206201533	

Aim

To understand the role of MPHW in public health care system in Gujarat—job description and actual work practice.

Objective

1. To assess the time spent by MPHW in each activity through a time–motion study.
2. To assess the MPHW's and medical officers' (MOs) perceptions about priority given to MPHW's tasks.

Materials and Methods

A time–motion study comprising time–motion observations of time consumed in each activity, the content of the activity, structured interviews for data about personal and professional profiles of the respondents, and their insights about the work was conducted.[2–5] Totally, three MPHW were selected purposively from the primary health center (PHC), Kanbha, Daskroi taluka, Ahmedabad, Gujarat, India, and were followed up for 6 continuous days. MPHW were followed up for 4,690 min in 18 days. Two medical officers (MOs) from Kambha PHC were selected to know the priority of the MPHWs task from their point of view. A pilot study of 1-week observation was done on one MPHW after which the tools were refined. It was decided to observe more two MPHWs for 6 working days in continuation, from Monday to Saturday. The observations were done in October 2013.

Tools of Assessment

The Time–Motion Study

The time–motion study was conducted by using continuous observation method. On each day, the observer met the respondents at the office or at a prefixed starting point depending upon the schedule of the worker. The observer remained with him till the work was over and the respondent left for home. During the day, all his activities were systematically recorded by the observer, including the nature of and time spent in each activity. During a field visit, the observer traveled with the respondent and continued with similar observations.

Interview with Respondents

An interview guide containing personal and professional details was used for the background and profile of the respondents.

Interview with Supervisors

The MOs were interviewed using an open-ended interview guide to understand the perceptions and priority given by them to the MPHWs task.

Data Collection and Analysis

In the time–motion study, data were collected in printed forms. Groups of activities were coded into categories. The study data were coded into categories, and Microsoft excel was used to analyze the coded activities. The categories were:

- **Cabin:** In this category, the MPHW were just sitting idle in the cabin, reading newspaper making nonwork-related calls and talking other than the work.
- **Field activity:** This category includes the time spent for the NVBDCP-related activities such as taking slides from fever patients, searching for breeding in the community, anti-malarial activities such as spraying DDT and using malathion, awareness regarding the Mamta Divas, referring patients to the PHC, and giving medicines in the field.
- **Break:** This category includes the time spent on the lunch.
- **Traveling:** This includes the time spent on traveling for the field activity; the times spent for coming from the home to office and from PHC to home are excluded from this category.
- **Immunization:** This category includes the time spent for the immunization day, i.e., Mamta Divas.
- **Reports:** This category includes the time spent for the report writing, getting it signed by MO, and forwarding it to the block level.
- **Organising Camps:** This category includes the time spent on finding the beneficiaries and organising Tubal Ligation camps in the PHC.
- **OPD services:** In the subcenter, MPHW run the OPD they provide basic medicines to the community. This category includes the time spent on the OPD services.

Results

The mean age of the MPHW was 26.33 ± 5.13 years [Table 1]. All the three MPHW were Hindus, and of the three, one was married.

The MPHW and MO [Table 2] were asked to rank the categories of the tasks performed by the MPHW [Table 2] on a scale of one to six, where one indicated first priority and six indicated the least. These categories of the tasks were based on their job descriptions given by the MO. Although the numbers are small, percentages were calculated for better understanding. The responses for each activity are summarized here.

All the respondents gave their first priority to the NVBDCP activity. MOs gave second priority to the reports, whereas one MPHW gave third priority to reports and rest of the two MPHWs gave it fifth priority. All the MPHWs gave last priority to training and supervision.

The PHC is open for 9 h from 09:00 am to 6:00 pm every day including 1-h break. The average starting time of the MPHW during the observed days was found to be 09:54 am (54 min after official starting time), and the average ending time of work was 2:16 pm (3 h and 44 min before the designated time), making the average total working hours as

Table 1: Personal information of the MPHW

	MPHW 1	MPHW 2	MPHW 3
Age (years)	22	32	25
Religion	Hindu	Hindu	Hindu
Marital status	Unmarried	Married	Unmarried
Posted	PHC	Subcenter	Subcenter

Table 2: The priority of the MPHWs and MOs for the tasks performed by MPHW

Priority	Categories of task					
	NVBDCP activity	Chlorination and sanitation	Reports—IDSP	RCH activity	OPD services	Training and supervision
First priority						
MPHW (%)	3 (100)	0	0	0	0	0
MO (%)	2 (100)	0	0	0	0	0
Second priority						
MPHW (%)	0	1 (33.3)	0	1 (33.3)	1 (33.3)	0
MO (%)	0	0	2 (66.6)	0	0	0
Third priority						
MPHW (%)	0	0	1 (33.3)	1 (33.3)	1 (33.3)	0
MO (%)	0	1 (50)	0	1 (50)	0	0
Fourth priority						
MPHW (%)	0	2 (66.6)	0	1 (33.3)	0	0
MO (%)	0	0	0	0	0	2 (100)
Fifth priority						
MPHW (%)	0	0	2 (66.6)	0	1 (33.3)	0
MO (%)	0	1 (50)	0	1(50)	0	0
Sixth priority						
MPHW (%)	0	0	0	0	0	3 (100)
MO (%)	0	0	0	0	2 (100)	0
Total	5	5	5	5	5	5

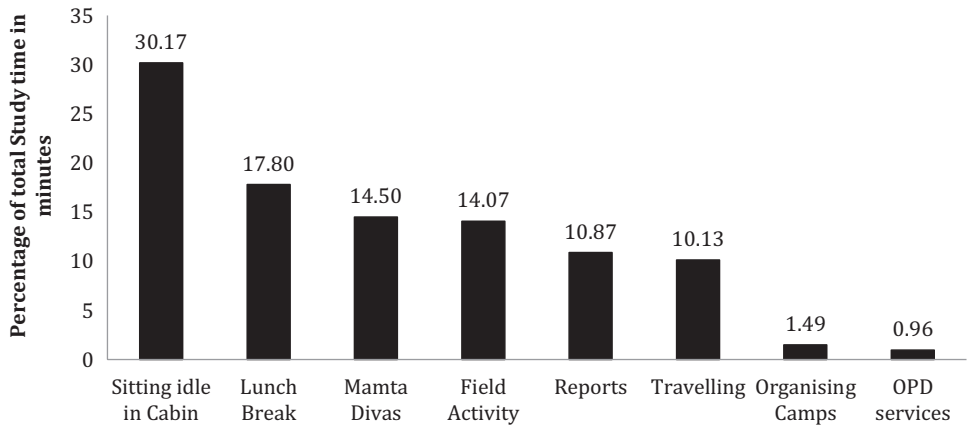

Figure 1: Average time spent by MPHWs in different activity (total study time = 4,690 min).

4 h 21 min, which was 4 h and 39 min less than the designated time. This excluded the travel time from home to office and back home.

The 18-day observation translates to 4,690 min of observ ation. The average working hours of the MPHW was 4 h 21 min. On an average working day, the MPHW spend 4 h and 39 min less than the stipulated working time of 8 h. The average working time varied according to the type of day. The average working hours during an office day were 4 h 17min (minimum 3 h and maximum 5 h 30 min). The average working time during Mamta Divas was found to be 4 h and 41 min (minimum 4 h and maximum was 5 h 50 min) [Figure 1].

The maximum time (30.17%) was spent sitting idle in the cabin, reading newspaper and doing nonwork-related activities. It was followed by the time spent on lunch break (17.8%), Mamta Divas (14.50%), field activity (14.07%), reports writing (10.87%), traveling (10.13%), and organizing camps (1.49%), and minimum time was spent on OPD services (0.96%).

Discussion

Majority of the time was spent for sitting idle and lunch break, and the main works such as field activity and immunization were given much less time. None of the MPHWs were

having their job list with them; moreover, they were not able to define their job responsibilities. Their superiors MOs were also not clear about the role and the job list of the MPHW. The priorities given to the tasks of MPHW by the MPHWs and MOs differ, which shows the confusion between the superior authority and the MPHWs. MPHWs were staying in the PHC for half of the total working hours and were working for nearly half of the time they stay.

Recommendations

More clarity is required regarding the job responsibilities of the MPHW; even, superiors such as MO should know the job profile of MPHW. It would be better if female MPHWs (ANMs) alone were made to work for family planning and, thereby, relieve the male workers of their family planning responsibilities so that they can concentrate on their multipurpose work more rigorously and cover a larger number of clients.

Limitations

Some activities have gone unrecorded as the researchers were not allowed to accompany the respondents, for example, getting report signed by the MO. The presence of the researcher might have influenced the behavior of the respondents. As shared by her colleagues, it was because of our presence that the respondents were regular, on time, and careful not to spend time in nonwork activities as much as they normally do. Small study period might affect the results of the study.

Conclusions

MPHWs and MOs were not having clarity on the job profile of the MPHW. Lack of time management was seen among MPHW, in which MOs should help MPHW. No refresher training was done for MPHWs. MOs should plan surprise visits to the subcenter, which can make MPHWs more sincere about their presence in the subcenter.

References

1. *Guidelines for Multipurpose Health Worker (Male) 2010*. New Delhi, India: Government of India Ministry of Health and Family Welfare, 2010.
2. Payne SC, Youngcourt SS, Watrous KM. Portrayals of F.W. Taylor across textbooks. J Manage History 2006;12(4): 385–407.
3. Bamisaiye AA, Abodunde MB, Ransome-Kuti O. A simple work-sampling system for use in hospitals and health centres in the developing world. J Trop Pediatr 1984;30(6): 299–303.
4. Price B. Frank and Lillian Gilbreth and the manufacture and marketing of motion study, 1908–1924. *Business and Economic History*, Vol. 18. pp. 88–98.
5. Kartikeyan S, Chaturvedi AR. *Essentials of Health Management. Fundamentals of Management*. Mumbai, India: Bhalani Publishing House, 2009. pp. 25–6.

How to cite this article: Shah AG, Davda B, Parikh S, Bala DV. Time–motion study of the multipurpose health worker in the primary health center and subcenters in Kanbha, Ahmedabad district, Gujarat. Int J Med Sci Public Health 2016;5:142-145

Source of Support: Nil, **Conflict of Interest:** None declared.