

THE USAGE OF WORKING TIME AND THE TASK VARIATION AMONG HEALTH WORKERS IN THE HEALTH CENTERS IN INDONESIA

(Case Study in Three Provinces)

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Abstrak :

Penelitian eksploratif ini dilakukan untuk mengetahui penggunaan waktu kerja yang dimanfaatkan secara efektif oleh para petugas kesehatan di Puskesmas dan variasi tugas, serta faktor-faktor yang mempengaruhi. Penelitian dilakukan di 3 (tiga) provinsi yaitu di Bali, Sulawesi Selatan, dan Kalimantan Selatan.

Hasil penelitian menunjukkan bahwa pemanfaatan waktu kerja di Bali dan Sulawesi Selatan relatif baik (85,35% dan 82,9%), sedangkan di Kalimantan Selatan masih kurang memuaskan (66,5%). Persentase penggunaan waktu kerja secara efektif untuk kepentingan kegiatan program Puskesmas relatif baik untuk Bali (70,1%), tetapi nampak sangat perlu ditingkatkan baik untuk Sulawesi Selatan maupun untuk Kalimantan Selatan yang masing-masing baru 58,0% dan 50,2%.

Di daerah penelitian, rata-rata jumlah tugas yang dibebankan pada setiap petugas kesehatan sekitar 4 macam tugas, ternyata jumlah tugas tersebut bervariasi sekalipun diantara mereka mempunyai dasar pendidikan yang sama. 'Job conten' dan 'job context' diantara staf Puskesmas sangat tergantung pada keputusan / kebijaksanaan kepala Puskesmas, yang pada umumnya tidak hanya berdasarkan latar-belakang pendidikan, akan tetapi juga berdasarkan ketrampilan dan motivasi staf menurut persepsi kepala puskesmas yang bersangkutan. Motivasi kerja staf puskesmas sangat dipengaruhi oleh gaya kepemimpinan kepala puskesmas serta interaksi antar faktor pengaruh yang lain, seperti : ketrampilan, pendidikan, sistem 'imbalan', dan kepuasan kerja yang ada kecenderungan didukung pula oleh budaya daerah.

Keywords : Health Center, Health Workers, Working Time, Task Variation, Working Motivation, Influencing Factors.

I. INTRODUCTION :

This study was an explorative research to identify how effectively the health workers in health centers (HC) used their working time. The study anticipated and supported the Indonesian Ministry of Health in implementing their policy that the health center programs should be improved¹. As a consequence, the health center manpower should be improved both quantity and quality, if the existing manpower was insufficient in both areas. The study also identified whether the existing manpower could improve performance in terms of making usage of working time more productive.

A. Background :

The health priorities and programs for Indonesian are based on the goals of the National Health System (NHS) which was developed in 1982 to provide a basic framework for general health development activities on a nationwide basis. The main objective of the health programs is to improve the ability of individuals in achieving optimal health status. To reach this objective, by considering the differences in opportunity and availability of health services among population subgroups health development activities are specifically targeted to reach the low-income citizens in urban areas and the rural population¹. In the rural areas, health centers play the primary role in health services by providing at least 12 basic health services to the sub district population including health care, maternal and child health care, a family planning program, a nutrition program, a hygiene and sanitation program, and communicable diseases control. Facing with population growth and developments in technology, improvements in both the quantity and the quality fo health services are absolutely critical. To meet this demand, effective use of working time and productivity, and the quantity of human resources, especially in the health centers which consist of 42% of total health man-

power², should be improved. In addition, efforts on increasing the number of health centers and their staff, and expanding health programs in and out-reach health centers can be avoided. One of out-reach HC program was the Integrated Service Posts (POSYANDU), which provided services including MCH, a family planning program, vaccination, and health education. They were established and administered by the community with technical support of HC staff.

B. Study Objective :

The aim of the reseach study was identify the performance of health workers in the health centers, especially the effective usage of working time, variation of their tasks, and its influencing factors.

II. METHODOLOGY :

A. Study area and subject of the study :

The research was conducted in three provices i.e. : Bali, South Sulawesi, and South Kalimantan which represented three region in the national health development. In each province, one regency was selected and from each regency four health centers were chosen. The criteria for health center selection were the total number of manpower and manpower performance. Performance rating was based on the Health Center Stratification score. The score was calculated annually by applying an certain formula on output, management, resources, and environment of health center^{3, 4}.

Subjects of the study were all of non-administrative staff in the selected health centers, consist of medical doctors, dentists, midwives and auxiliary midwives, nurses and auxiliary nurse, sanitarians, and vaccinators.

B. Data Collection :

Two types of data were gathered in this study i.e. quantitative and qualitative data. The quantitative data consists of :

- (a) usage of working time, collected through a 'time and motion study (observation)' with 'work sampling' every five minutes during three weeks of observation, thus, every single hour would yield 60 minutes / 5 minutes = 12 recorded data points.
- (b) number and the type of tasks, collected by interview, and
- (c) several influence factors such as facilities provided by government were collected by observation and interview.

While the qualitative data, including the factors influencing the health worker's motivation, were gathered by interview and focus group discussion⁵.

C. Data Analysis :

Descriptive analysis was applied for both quantitative and qualitative data, and descriptive statistics, X-square test and non paired t-test, was used to identify the difference in usage of working time among areas⁶.

III. FINDINGS :

A. Usage of Working Time :

The usage of working time by health workers in health centers could be differentiated into three categories i.e. :

1. Effective time used : the health workers executed related to health center functions during working hours.
2. In-effective time used : the health workers executed activities unrelated to health center functions during working hour.
3. Time unused : during working hours the health center workers were not present in health centers, came late, left early, or absent.

Table 1. shows that working time used by the workers in Bali and South Sulawesi were relatively good (above 80.0%), while in South Kalimantan the usage of working time was relatively fair (66.5%). The pattern of activities by location in all 3 study areas was not very different. the highest percentage of activities took place in the HC. and followed by activities in 'other places' such as traveling from HC to POSYANDU or to target population, reporting or meeting in the regency or province health office etc.

Table 1. THE USAGE OF WORKING TIME OF HEALTH WORKERS IN HEALTH CENTER BY LOCATION OF ACTIVITIES AND PROVINCE

No.	LOCATION	BALI		SOUTH SULAWESI		SOUTH KALIMANTAN	
		Freq	%	Freq	%	Freq	%
1.	Health Center	9843	55.6	7848	53.1	67	44.5
2.	Sub Center	296	1.7	2	0.1	349	2.3
3.	Integrated Services Post (Posyandu)	82	0.5	369	2.5	263	1.7
4.	Village Office	1047	5.9	277	1.9	46	0.3
5.	Subdistrict Office	76	0.4	204	1.4	158	1.0
6.	Target House	306	1.7	208	1.4	76	0.5
7.	School	430	2.4	265	1.8	285	1.9
8.	Other Places	3018	17.1	3092	20.9	2147	14.2
SUB TOTAL : Time Used		15098	85.3	12265	82.9	10030	66.5
9.	Not Present Yet	763	4.3	1031	7.0	1227	8.1
10.	Already Left	677	3.8	775	5.2	2445	16.2
11.	Permission	994	5.6	333	2.3	480	3.2
12.	Sick	168	0.9	—	—	132	0.9
13.	No Information	—	—	384	2.6	763	5.1
SUB TOTAL : Time Unused		2602	14.7	2523	17.1	5047	33.5
TOTAL		17700	100.0	14788	100.0	15077	100.0

If the time used was considered whether it was used effectively or ineffectively, as shown in Table 2, effective time used in Bali, South Sulawesi, and South Kalimantan were 701%, 58.0%, and 50.2% respectively. The ineffective time used in South Sulawesi was 1.5 time as high as it was in the others two provinces. As a result, the yield of effective time used in South Sulawesi was as low as it was in South Kalimantan, although the time used in South Sulawesi was nearly the same as it was in Bali.

Among 20 types of activities in a HC, three activities (Health Care, Recording and Reporting, and Other HC Related Activities) occupies the major proportion of working time, i.e. for Bali, South Sulawesi, and South Kalimantan the percentages were 41.5%, 37.5%, and 33.2% respectively. Several activities were likely to be unmeasured, due to integration with other activities, unavailability of expertise and / or the facilities. A Health Education and a Nutrition Program were integrated into POSYANDU, while in certain HCs there were no expertise and / or facilities for a Mental Health Program, Laboratory, and In-patient Care.

Tabel 2. THE USAGE OF WORKING TIME OF HEALTH WORKERS IN HEALTH CENTER BY TYPE OF HEALTH CENTER ACTIVITIES AND PROVINCE

No.	LOCATION	BALI		SOUTH SULAWESI		SOUTH KALIMANTAN	
		Freq	%	Freq	%	Freq	%
1.	MCH	448	2.5	347	2.3	427	2.9
2.	Family Planning	83	0.5	58	0.4	143	1.0
3.	Nutrition Program	—	—	63	0.4	—	—
4.	Environmental Health	226	1.3	92	0.6	—	—
5.	Health Education	—	—	1	0.0	—	—
6.	CDC	327	1.8	229	1.5	252	1.7

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No.	LOCATION	BALI		SOUTH SULAWESI		SOUTH KALIMANTAN	
		Freq	%	Freq	%	Freq	%
7.	Health Care	1396	7.9	1136	7.7	1292	8.7
8.	School Health Program	562	3.2	194	1.3	247	1.7
9.	Public Health Nursing	86	0.5	27	0.2	87	0.6
10.	Dental Health	463	2.6	23	0.2	257	1.7
11.	Mental Health	—	—	—	—	1	0.0
12.	Laboratorium	30	0.1	4	0.0	—	—
13.	Recording & Reporting	3221	18.2	1095	7.4	1117	7.5
14.	Pharmacy	138	0.8	205	1.4	225	1.5
15.	Mobile Team Services	385	2.2	184	1.2	70	0.5
16.	POSYANDU	590	3.3	812	5.5	446	3.0
17.	In-patient	—	—	23	0.2	—	—
18.	Staff Coordination	1035	5.8	333	2.2	407	2.7
19.	Intersectoral Coordination	707	4.0	429	2.9	77	0.5
20.	Other HC related Activities	2715	15.4	3324	22.1	2524	17.0
SUB TOTAL : Effective Time used		2405	70.1	8579	56.9	7572	50.2
SUB TOTAL : Ineffective Time Used (21)		2693	15.2	3686	24.8	2458	16.5
22.	Not Present Yet	763	4.3	1031	7.0	1227	8.1
23.	Already Left	677	3.8	775	5.2	2445	16.2
24.	Permission	994	5.6	333	2.3	480	3.2
25.	Sick	168	0.9	—	—	132	0.9
26.	No information	—	—	384	2.6	763	5.1
SUBTOTAL : Time Unused		2602	14.7	2523	17.1	5047	33.5
TOTAL		17700	100.0	14788	100.0	15077	100.0

The effective time usage among different types of health workers, as shown in Table 3, varied from province to province. In Bali it ranged

between 62.7% and 80.0%, while the range in South Sulawesi and South Kalimantan differed little i.e. 46.2% - 66.6% and 41.1% - 67.9% respectively. The arithmetic mean of the percentage of the effective time used in Bali (72.3%) was the highest, followed by that of South Sulawesi (57.9%) and South Kalimantan (51.9%).

Table 3. PERCENTAGE USAGE OF WORKING TIME OF HEALTH WORKERS IN HEALTH CENTER BY TYPE OF WORKERS AND PROVINCE

No.	TYPE OF HEALTH WORKERS	SOUTH KALIMANTAN		BALI		SOUTH SULAWESI	
		E	I + U	E	I + U	E	I + U
1	Physician	72.0	28.0	66.6	33.4	59.1	40.9
2	Dentist	67.1	32.9	—	—	57.1	42.9
3	Nurse	62.7	37.3	62.8	37.2	52.2	47.8
4	Auxiliary Nurse	79.3	20.7	46.2	53.8	47.6	52.4
5	Midwife	74.0	26.0	62.8	37.2	67.9	32.1
6	Auxiliary Midwife	68.1	31.9	52.5	47.5	42.1	57.9
7	Sanitarian	75.3	24.7	64.0	36.0	41.1	58.9
8	Vaccinator	80.0	20.0	50.3	48.7	48.0	52.0
EFFECTIVE TIME USED :							
- Range		62.7 - 80.0		46.2 - 66.6		41.1 - 67.9	
- Mean		72.3		57.9		51.9	
- SD		6.1		8.0		9.1	
- t-test :		Bali - South Sulawesi		= 3.96 (p < 0.01)			
		Bali - South Kalimantan		= 5.37 (p < 0.001)			
		South Sulawesi - South Kalimantan		= 1.34 (p > 0.05)			

Note : E = Effective time used
 I = Ineffective time used
 U = Time unused

B. Variation of Tasks :

In general, the demand for health services has increased substantially in the last 10 years and as a consequence, health services should be improved, especially in Health Centers which provide the most accessible and cheapest health services for the community. Improving the quantity and quality of health programs created and increased workload for health workers in HCs. Unfortunately, the rapid progression in the programs could not be followed by an adequate increase in the number and type of health workers available in HC. A health worker in HC could be responsible for more than one main task, and might also be responsible for more than one additional task.

In Bali and South Sulawesi, the arithmetic mean of the number of main tasks was 1-2 per person, i.e. 1.84 for Bali and 1.61 for South Sulawesi, while in South Kalimantan, on average a health worker was responsible for 3 main tasks. In addition, the health workers had additional tasks besides their main tasks. The additional task was that health workers should assist fellow workers who needed help with their main tasks. The mean of the additional task in Bali and South Sulawesi was 2-3 per person, i.e. 2.69 and 2.30 respectively. Meanwhile in South Kalimantan the arithmetic mean of additional task was one per person. Thus, a physician Bali could be responsible for one or a combination of two main tasks, besides being responsible for a combination of two or three additional tasks from the list in Table 4. For example, a physician in Bali might have as main task 'a head of HC' combines with responsibility for the execution of POSYANDU. In addition his / her additional tasks, he / she might be responsible for the combination of 2-3 other programs such as CDC, Family Planning, and Health Education or others combination. This demonstrates that the task of health workers in the study area, in 'main' tasks as well as 'additional' tasks, varied from HC to HC even within one profession.

Tabel 4. MAIN TASKS AND ADDITIONAL TASKS BY THE TYPE OF HEALTH WORKERS IN STUDY AREA (3 PROVINCES)

No.	TYPE OF HEALTH WORKERS	MAIN TASKS	ADDITIONAL TASKS
1.	PHYSICIAN	<ul style="list-style-type: none"> - The Head of HC - Health Care - POSYANDU - Mobile Team services - School Health 	<ul style="list-style-type: none"> - MCH - Family Planning - Nutritional Program - Health education - CDC - Mobile Team Services - POSYANDU - Laboratory - Sub Center
2.	DENTIST	<ul style="list-style-type: none"> - Dental Health - School Health - POSYANDU - Recording & Reporting 	<ul style="list-style-type: none"> - Health Care - School Health - POSYANDU - Health Education
3.	NURSE	<ul style="list-style-type: none"> - PH Nursing - Health Education - Pharmacy - Health Care - CDC - Nutritional Program - Immunization - Sub Center 	<ul style="list-style-type: none"> - POSYANDU - School Health - Health Care - Reporting & Reporting - Mobile Team Services - School Health - In-patient - MCH - CDC - Health Education
4.	AUXILIARY NURSE	<ul style="list-style-type: none"> - CDC - Health Care - Laboratory - Mobile Team services - School Health - Reporting & Recording - POSYANDU - Nutritional Program - Health Education 	<ul style="list-style-type: none"> - MCH - Health Care - School Health - PH Nursing - Pharmacy - Mobile Team Services - POSYANDU - Health Education

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No.	TYPE OF HEALTH WORKERS	MAIN TASKS	ADDITIONAL TASKS
5.	MIDWIFE	<ul style="list-style-type: none"> - MCH - Family Planning - CDC - Health Care - Reporting & Recording - POSYANDU - Mobile Team Services - Immunization - Sub Center 	<ul style="list-style-type: none"> - Family Planning - Nutritional Program - School Health - Health Care - Reporting & Recording - POSYANDU - Mobile Team Services - Health Education
6.	AUXILIARY MIDWIFE	<ul style="list-style-type: none"> - MCH - Family Planning - Health Care - Pharmacy - POSYANDU - Health Education 	<ul style="list-style-type: none"> - Family Planning - Health Care - Pharmacy - POSYANDU - School Health - Immunization
7.	SANITARIAN	<ul style="list-style-type: none"> - Environment Health - Health Education - Dental Health - School Health - Immunization - POSYANDU - Mobile Team services - Reporting & Recording 	<ul style="list-style-type: none"> - Health Education - CDC - Family Planning - School Health - PH Nursing - Pharmacy - POSYANDU - Mobile Team Services
8.	VACCINATOR	<ul style="list-style-type: none"> - Immunization - CDC - MCH - Family Planning - Health Care - School Health - Environmental Health - Mobile Team Services 	<ul style="list-style-type: none"> - Family Planning - Health Care - Health Education - Pharmacy - POSYANDU - Mobile Team Services

IV. DISCUSSION :

The purpose of analyzing the usage of working time was to indicate the proportion of time which was allocated by the health workers for community services during working time (time used) and the proportion of time used for health center functions related activities (effective time used). Although the percentage of time used in Bali and South Sulawesi was not relatively different, it was, however statistically significant ($X^2 = 33.78$; $df = 1$, $p < 0.001$). This might be due to a large number of data points⁸. Comparison of the time used in each of the above provinces with of South Kalimantan, which were relatively different in proportion, shows the different was statistically significant (X^2 Bali - South Kalimantan = 1.604.06; $p < 0.0001$ and X^2 South Sulawesi - South Kalimantan = 1.062.91; $p < 0.0001$). Thus, statistically the time used in those three provinces were different : Bali was the best, followed by South Sulawesi, and the worst being South Kalimantan. The percentage of time used in the study area was still left behind from it was (93.6%) in the East Java Province⁷.

Further analysis showed that although physically the health workers in South Sulawesi allocated an amount of working time for community services which was proportionally not so different from Bali, but their idle time (ineffective time used) was the greatest. As a result, their proportion of effective time used was nearly as it was in South Kalimantan, even though the difference was statistically significant ($X^2 = 182.48$; $p < 0.001$). Ideally the health workers should reduce their proportion of ineffective time used by actively using it for more frequent home visit, POSYANDU, and Mobile Team Services, and not passively wait for the community come to the health centers. One of the consequences of the outreach activities was the budget for transportation. The head of Health Centers should negotiate with their supervisors or the community leaders to develop the transportation budget. If they early explained that the

proactive activities would greatly beneficial for the community there could be cooperation.

A non paired t-test showed that distribution of the proportion of effective time used among type of health workers in Bali was significantly different from both other provinces (p Bali - South Sulawesi < 0.01 ; p Bali - South Kalimantan < 0.001). On the other hand, the difference in the proportion of effective time used between South Sulawesi and its in South Kalimantan was statistically not significant (p South Sulawesi - South Kalimantan > 0.05). Considering the proportion of effective time used of each type of health worker, it seems that each province had its own organizational behavior characteristics, even though the distribution in South Sulawesi and its in South Kalimantan statistically not significant. in Bali, the head of Health Centers (physicians) succeeded in encouraging the staff to work hard. Table 3 shows that the proportion of effective time used of physicians was relatively high (Vaccinators, Auxiliary Nurses and Sanitarians were the best three). In South Sulawesi, the heads of Health Centers were the leading in the proportion of the effective time used, but they were only able to encourage the sanitarians to work hard, along with the other two primary personnel in the health center (physicians, dentist, nurses, and midwives). While in South Kalimantan the primary personnel worked hard, with physicians, dentist, and midwives showing the highest proportion of effective time used. These staff, were not able to encourage the other staff to participate in working more seriously.

The number and the variation of tasks of a health worker greatly depends upon the policy of the health center leaders. The Ministry of Health did not standardize the organizational structure of the health center, but did standardize the number and types of HC services. In order that all types of services could be provided by the HC, the HC leaders divided and delegated them to the staff. In deciding 'who's responsible

for what', the HC leader frequently not only based in on the educational background of the staff, but also based it on the motivation of the staff in contributing to the HC performance. This is simply based on the limited number and types of existing health workers. On one hand, since motivation was something abstract, the staff might interpreted the decision of task assignment based on the 'like and dislike' feeling of the subjectivity of HC leader. On the other hand, the HC leader might make a decision to address secure execution of every single program rather than the fit of the tasks and the educational background of the staff.

The number and scope of tasks (job content and job context) were based on the workload of the staff. This might serve as a challenge and a chance for the staff to motivate herself / himself in order to have a good performance and reputation in a certain task if she / he failed in the others⁸. The chance to demonstrate a good reputation was not only affected by the staff satisfaction^{9, 10}. These might be the reasons why most of the health workers (65.8%) did not want to have a reduction of their job content and job context¹¹.

Interaction between the level of skills or education and the reward substantially influenced job satisfaction¹² of the health workers in the study area, which could be identified by focus group discussion (FGD) and in depth interview. In general, interrelationship among skills, reward, job motivation and satisfaction, and the need for continuing education was easily illustrated by the health workers in Bali. The health workers who were directly responsible for health care would be satisfied if they succeeded in taking care the patients. That situation (the community trusted the health workers expertise, and as a result utilization of private practice as well as HC services increased) directly and indirectly increased their income (reward) which would generate high working motivation and at last pushing them to have a felt need of continuing education in order could sustained and improved their skill. The reward

which increased motivation of health workers not only in terms of money, but also in term of other types of rewards such as recognition from their supervisors (health center leaders), and housing and vehicle provided by the government. From FGD and in depth interview was found that the reward was not always important to support high working motivation, it could be substituted by a certain condition¹³. For example in Bali, although the government provided only limited numbers of housing and vehicles, the health workers has a high level of working motivation, because they could stay in their family's housing and easily had access to public transportation.

During data collection especially in focus group discussion (FGD) and in depth interview, the influancing factors to the success of health center leaders to encourage their staff were explored. In Bali, the strong cultural factor that the community should obey the patrician was the main factor to making it easier for the HC leaders in actuating their staff. Most of the HC leaders were descendants of kings from the ancestral kingdom of ancestry Bali. In addition, strong personality and leadership styles were the other factors. A democratic leadership¹⁰ which synthesized 'the task oriented' and 'the people oriented' factors greatly influenced the staff motivation. In South Sulawesi, although the paternalism culture was not as strong as in Bali, some of this kind of culture still existed. Meanwhile in South Kalimantan, most of HC leaders were young physicians, who needed to strive hard to convince the staff that they were capable leaders by working hard to achieve a good reputation.

V. CONCLUSIONS :

Derived from the findings and discussion, the study suggests that :

1. Time used (effective + ineffective time used) in the study area was lower than its in the East Java Province.

2. Effective time used in Bali was the best among the study area, and statistically different of its in South Sulawesi and South Kalimantan. The effective time proportion in those three provinces could be increased by using in effective time used in active activities such as home visit, POSYANDU, and mobile team services.
3. In addition to their main tasks, the health workers had additional tasks which the number and types of tasks varied among health workers even within a profession.
4. The number and variation of the tasks on one hand was a burden to health workers workload, but on the other hand they could be a chance for them to earn a good reputation in a certain task if they failed in the others.
5. Job content and job context of staff greatly depend on decision of health center leaders which was based not only on the educational background of the staff, but also based on skills and motivations of the staff.
6. The health worker's working motivation was strongly influenced by leadership style and interaction among influencing factors such as skills, education, reward system and job satisfaction which might be supported by local culture.

ACKNOWLEDGEMENTS

The Author would like to acknowledge to Dr. William J. Bicknell, MPH, and Marsha Lin, MPH, (Center for International Health - Boston University) for their valuable comment and encouragement to publish this article in English. In addition, I would like to extend thanks to all of research team members for their cooperation and assistance in undertaking the study.

This research was funded by the National Institute of Health Research and Development, Ministry of Health of Indonesia, so that special thanks for the Head of the institute.

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