

## **SUBMITTED**

### **ANALYSIS MIDWIFE WORKLOAD WITH NASA-TLX METHOD**

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#### ***Abstract***

*Results of preliminary studies conducted at the Puskesmas Hospitalization in the city of Surabaya regarding duties and responsibilities as a midwife, showed that midwives had overlapping duties and responsibilities because midwives not only handled maternal and child problems as their main duties and functions, but midwives also carried out all activities. The Puskesmas in its working area includes 6 basic six primary health centers, namely prevention and control of diseases, health promotion, MCH and family planning services, environmental health, nutrition improvement, and basic treatment and services. In addition, midwives also carry out other administrative activities such as joining the kecamatan and kelurahan PKK driving teams, and becoming treasurers of the National Health Insurance (JKN). This is due to the limited personnel owned by the Puskesmas so that it can affect the workload of midwives, because in addition to exercising their authority the midwife also carries out other tasks. Based on the above problems, and remembering the duties and functions of midwives as maternal and child health providers, it is important to conduct research on midwife workload analysis in carrying out their authority in the working area of Surabaya Inpatient Health Centers. This study has a cross sectional quantitative research design. In this study using 2 variables (exogenous), namely Midwife Work Performance and Midwife Performance or Productivity. In this study the endogenous variables are the quality of midwife services in the Surabaya Inpatient Health Center. The population used in this study were all implementing midwives, who provided services in 10 inpatient health centers in Surabaya, namely 1. Dupak health center, 2. Tanah Kali Kedinding health center, 3. Jagir health center, 4. Gunung Anyar health center, 5. Medokan health center Ayu, 6. Mulyorejo health center, 7. Krembangan Selatan health center, 8. Tenggilis health center, 9. Dukuh Kupang health center, 10. Sidotopo Wetan health center, which was 100 people at the time of this research, while the sampling technique was using simple random technique sampling. Pearson correlation test results indicate there is a significant relationship between workload and performance ( $p = 0.000$ ) and there is a significant relationship between workload and service quality ( $p = 0.000$ )*

***Keywords: Workload, Performance and Service Quality***

## **INTRODUCTION**

### **Background**

The minister of Health Stated that one of the main targets. Health development contained in RPJMN 2015- 2019 is increasing access and quality of basic health services and referrals

especially in small region, disadvantaged and border areas. This makes facilities role of first instance as the spearhead of Indonesian health service. Therefore, improving the quality of health service in Indonesia especially in facilities role of instance is something that can't be delayed any more. Facilities role of first in instance era national health insurance (JKN) acts as a get keeper (goal keeper). Minister of health said facilities role of instance it self is one of the puskesmas (Health medical service public).

Based on the results of the study, midwife in the city of Surabaya have duties and responsibilities not only handles maternal and child health midwife also carry out. The tasks of the puskesmas (health medical service public) includes basic 6 assignments is prevent and control diseases, health promotion, health service, KIA and KB, Environmental health, Gizi and basic service. Not only, midwife carry out activities administration and they join PKK team, village they to be treasures in (JKN). This is due to the limited power possessed by the Puskesmas which can affect the workload, because besides carrying out its authority, it also requires other tasks.

Based on the above problems, and the tasks carried out as maternal and child health care providers, a study of the analysis of workload was carried out in carrying out tasks in the work area of the Surabaya Inpatient Health Center.

## **LITERATURE REVIEW**

### **1.1. Workload**

Whereas Everly, et al (in Munandar, 2001) say that workload is a situation where workers are faced with tasks that must be completed at a certain time. Burdens can be physical loads and mental burdens, physical burdens can be heavy work such as lifting, transporting, caring for, and pushing. While the mental workload can be in the form of the extent of the level of expertise and work performance that individuals have with other individuals (Manuaba, 2000).

According to Pudjiraharjo, et al (2003), looking at workload in a perspective that is subjectively and objectively.

#### **a. Subjective workload**

Subjective workload is a workload that is seen from the point of view or perception of the midwife. Subjective workload is a measure used by excess work, a measure of work pressure and job satisfaction. The burden of someone on the workload question that is put forward about the subjective workforce includes physical workload, social workload, and mental workload.

#### **b. Objective workload**

Objective workload is a real situation that exists in the field both workload is seen from the total time spent or the number of activities carried out. According to Gibson (2000), objective workload is a measurement of the workload in the field which is expressed in the form of a proportion of use of work time distinguished by direct workload, indirect workload, and other workloads. In the daily activities of village midwives, direct workload is a direct productive activity for patients, and indirect workload is indirectly productive activities carried out by midwives.

##### **1.1.1 Workload Analysis**

The formulas for calculating workload are as follows (Edison, 2009):

$$\text{Workload} = \frac{\text{Productive time}}{\text{Standard time}} \times 100 \%$$

#### **a. Objective Workload Measurement Method**

In calculating objective workload there are three methods (methods) that can be used, including (Ilyas, 2004):

##### **1) Work Sampling**

Barnes (1980) states that side work is used to measure employee activity by calculating the time used for work and time not used to work in their working hours, then presented in the form of a percentage. Whereas according to Niebel (in Suharyono, 2005), work sampling is a technique to measure the proportion of the size of each pattern of activities from the total time of activities that have been carried out from a work group or work unit.

## 2) Time and Motion Study

Time and motion studies are large branches of knowledge that study the systematics of factors that determine work methods with estimates. The deadline for the value of work which includes human activities and the progress of the provision of equipment in using data (Mundel, 1998). Time and motion study consists of two aspects, namely motion study and time study. Motion study is the study of movements carried out by workers to complete their work.

## 3) Daily Log

The daily log is a simple form of work sampling, where the person being studied writes himself the activity and time used for the research. The use of this technique is very dependent on the cooperation and honesty of the personnel being studied.

### b. Subjective Workload Measurement Method

In the measurement of subjective workload there are three ways that can be used, namely the NASA-Task Load Index (TLX) method, the Subjective Workload Assessment Technique (SWAT) method, and the Modief Cooper Harder Scaling (MCH) method. But the most widely used method and good results are NASA-TLX and SWAT (Hancock and Meshkati, 1988 in Tarwaka 2010).

#### 1) NASA-TLX

Mental effort is an indication that provides mental needs and information for employees. The NASA-TLX method was developed by Sandra G. Hart from the NASA-Ames Research Center and Lowell E. Staveland from San Jose State University in 1981. This method consisted of a questionnaire developed based on easier measurement needs but more sensitive to measurements. NASA-TLX performs weighting and multi-demographic ranking procedures that provide facilities for assessing six sub-scales, namely: Mental demands for physical demands, temporal demands, own performance, effort, and frustration (Tarwaka, 2010).

#### 1.2 Performance

According to Kopelman, productivity is a physical concept used by many economists: productivity is the relationship between physical output and one or more physical inputs that are interrelated and used in the production process. In general, productivity is a system of concepts; produktivitas can be used in various types of unity, including an individual or machine against a company, industry, or social economy Kopelman (1986: 3). The physical process of productivity, in particular, is shown as a ratio (ratio), which describes how the source of income is used efficiently so that it produces results. Often, productivity is taken into account, by showing the relationship between single yields and output, for example maize mounds per hectare, Kopelman's hourly labor unit (1986: 4).

Performance is a record of outcomes produced from certain employees or activities carried out during a certain period or performance is the extent to which someone has played their part in implementing organizational strategy (Riniwati H., 2011: 50)

##### 1.2.1 Performance Assessment

Performance appraisal is a measurement of the contribution of an individual in an agency carried out on ordinance. The important value of performance appraisal is to determine the level of individual contributions or performance expressed in the completion of tasks that are their

responsibility. The core performance assessment is to find out how productive an employee is and whether he can perform equally or more effectively in the future (Riniwati H., 2011: 54)

### 1.3 Quality of Service

The work unit for the reorganization of the health service system and the quality of medical services in Canada, provides a quality limit as the ability of professional activities and medical services to create a steady improvement in individual health. and population, taking into account their expectations and the latest knowledge in the health sector. The Institute of Medicine defines quality as a degree of health services for individuals and populations that increases the achievement of expected health outcomes and is consistent with current professional knowledge (Lumenthal, 1996). The dimensions of service quality are 5 categories / dimensions, namely: *Responsiveness, Assurance, Tangibles, Empathy dan Reliability* (RATER).

#### 1.2.2 Objectives of Counseling

The main purpose of reality counseling is to help someone achieve autonomy. This maturity implies that people are able to be responsible for who they are and who they want to be and develop plans that are responsible and realistic to achieve individual goals. Reality counseling helps individuals determine and clarify individual goals. Furthermore, helping individuals in explaining the ways individuals inhibit progress toward the goals determined by themselves. Counselors help clients find alternatives in achieving goals, but clients themselves which sets therapy goals.

#### 1.2.3 Reality Group Counseling Procedures

Glasser (in Corey, 1984) has developed eight principles or concepts that form reality counseling. Stage of personal involvement with clients

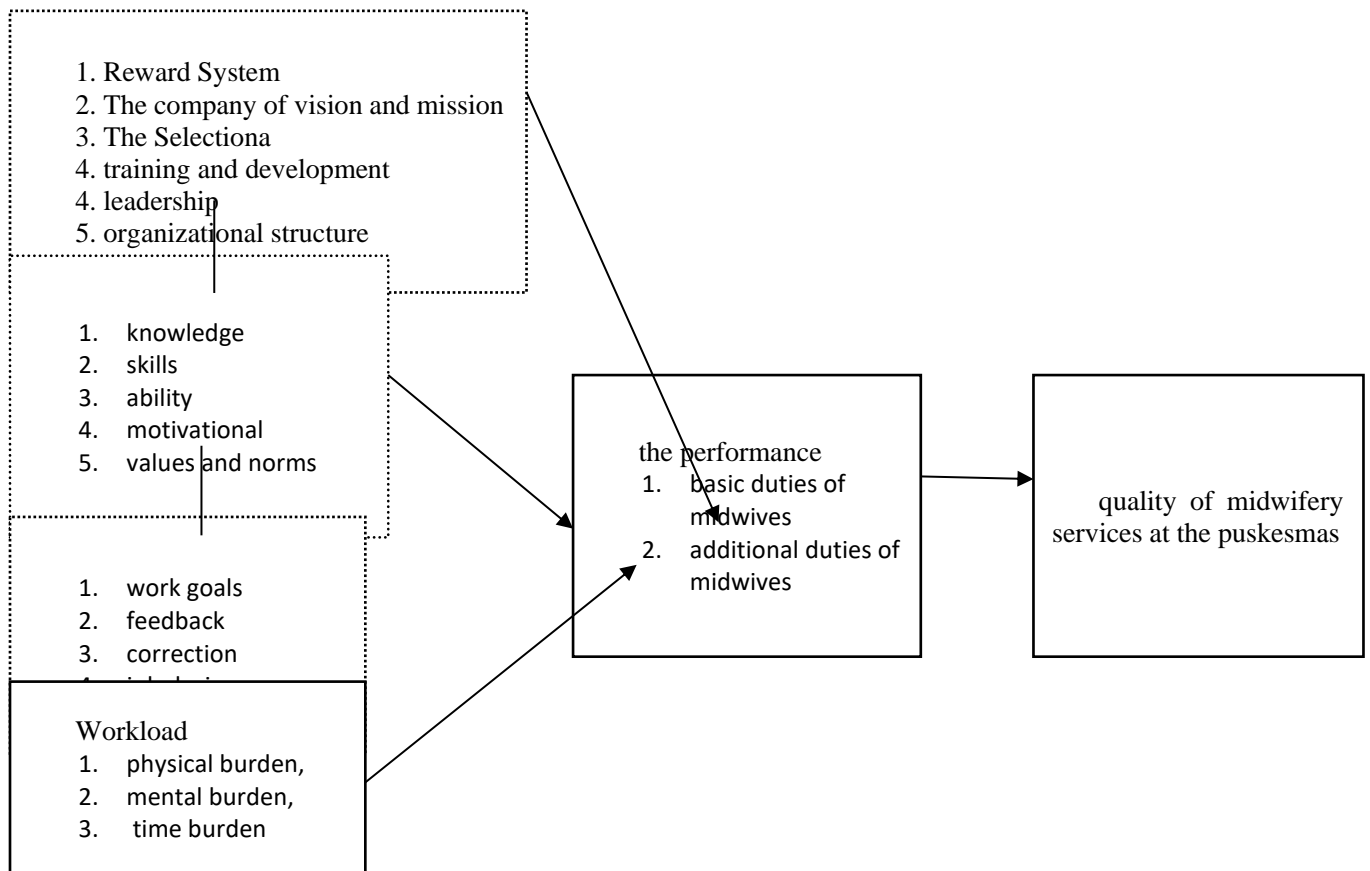
- 1) The first step in reality counseling is to be friends with clients.
- 2) Stage of behavior change
- 3) Evaluation of behavior
- 4) Plans and actions
- 5) Commitment
- 6) Refusal to accept errors
- 7) There is no penalty
- 8) Refusal to submit

### 2.6 Conceptual Framework

Based on the background of the problems stated earlier and the theoretical framework described in Chapter II, the researcher made a conceptual framework to assess midwife service quality based on internal customer perceptions (colleagues), using five dimensions namely Responsiveness, Assurance, Tangible, Empathy, Reliability (RATER) and see the relationship of the variable Workload and Performance or productivity of Midwives to the quality of service midwives.

For the variable workload of midwives, the researchers measured it using indicators of Midwife's Basic Tasks, Additional Tasks and Task Completion Time. Whereas for Performance or Productivity Variables, because these variables can be directly measured, productivity will be measured through the Midwives' ability to provide these services. Based on the description, the conceptual framework used is as follows:

## Characteristic of Organization



Remarks: ☐ : researched ☐ : not examined

## METHOD OF STUDY

This study has a cross sectional quantitative research design. In this study using 2 causative variables (exogenous), namely Midwife's Workload and Midwife's Performance or Productivity. In this study the resulting (endogenous) variable was the quality of midwife services at the Surabaya City Inpatient Health Center. The population used in this study were all implementing Midwives, who provided services in 10 Surabaya Inpatient Health Centers, namely 1. Dupak Health Center, 2. Tanah Kali Kedinding Health Center, 3. Jagir Health Center, 4. Anyar Mountain Health Center, 5. Public Health Medokan Ayu, 6. Puskesmas Mulyorejo, 7. Puskesmas Krembangan Selatan, 8. Puskesmas Tenggilis, 9. Puskesmas Dukuh Kupang, 10. Puskesmas Sidotopo Wetan, which at the time of this research was proposed 100 people while the sampling technique was using simple random techniques sampling. The analysis in this study used Pearson's correlation test.

## FINDING AND DISCUSSION

Respondents in this study were midwives who served in the Surabaya City Inpatient Health Center. In this study the characteristics of the respondents were seen from the age of the midwife, length of service and level of education.

**Table 1. Characteristics of age and length of work of midwives**

Variabel	Mean	Median	Standart Deviasi (SD)	Minimum- Maksimum	95% Confidence Interval (CI)
Age (Year)	32,3	31	6,217	21-50	30,99–33,60
Duration work(year)	of 8,4	7,25	5,648	1-30	7,218- 9,582

In Table 1. For the age of midwives in charge of the Surabaya City Inpatient Health Center, the average age is 32.3 years from 100 respondents (95% Confidence Interval for Mean (CI): 30.99 - 33.60) with a standard deviation value (Elementary School) of 6.217 years. From the results of the interval estimation it was found that 95% were believed that the average age of the respondents was 30.99 years up to 33.60 years. The average length of employment of the respondents was 8.4 years (95% Confidence Interval for Mean (CI): 7.218 - 9.582) with a standard deviation (SD) value of 5.648 years. So that it can be concluded that 95% are believed that the length of work of respondents is 7.218 years up to 9.582 years. The longest working period is 30 years and the shortest is 1 year.

**Table 2. Respondent Frequency Distribution Based on Education Level Percent Frequency**

Education Level	Frekuensi	Persen
D3 Midwifery	80	80.0
D4 Midwifery/ S1 Midwifery	15	15.0
S2 Health	5	5.0
Training Ever Followed		
APN	100	100
CTU	75	75
Management of Asphyxia and BBLR	75	75
PPG DON	50	50
Counseling APBK	50	50
Nutrition	25	25
Pregnancy Class	25	25
Baby Handling	25	25
DDTK	25	25

In Table 2. It can be seen that the frequency distribution of 100 respondents who are D3 educated is 80%, for Midwifery D4 / S1 Midwifery education as much as 15% while S2 education Health

as much as 5%. Frequency Distribution The highest level of education respondents are midwifery D3 education. For training that all midwives have participated in is APN training

**Table 3. Proportion of Midwife's Working Time at the Surabaya City Inpatient Health Center**

Health Center	Time Produktive		Time non produktive	Time Non Functional
	directly	Non directly		
A	135,89	269,89	138,89	140,89
B	129,9	249,98	129,9	130,9
C	120,45	249,8	120,45	120,45
D	139,9	278,98	139,9	139,9
E	135,98	270,7	135,98	135,98
F	130	268	130	130
G	130,89	278,9	135,89	130,89
H	125,6	235,7	125,6	125,6
I	139,9	275,89	139,9	139,9
J	129,35	257,89	130,35	129,35
Amount of	1317.87	2635.73	1326.87	1323.87
On average	131,79	263,57	132,68	132,39

Table 3. above illustrates the proportion of time that midwives use during observations with a time and motion study form. Activities carried out by midwives are grouped into 4 (four), namely types of direct productive activities, types of indirect productive activities, types of non-productive activities and types of non-functional activities. Based on table 3. seen from the total use of time by midwives during observations for 3 days, it was found that the use of time for direct productive activities was 1317.87 minutes, for indirect productive activities was 2635.73 minutes, for non-productive activities during 1326 , 87 minutes, and for non-functional activities for 132.39 minutes.

Measurement of objective workload is the determination of the level of workload obtained from the results after observations using the Time and Motion Study form. After obtaining all activities carried out by midwives as well as work time used by midwives, both productive activities, non-productive activities, and non-functional activities, the level of workload is subsequently determined. According to Edison (in Nazhifah, 2012) said that in determining the level of workload of midwives or productivity using a comparison between the use of productive work time and standard time multiplied by 100%. Standard time is based on the respondent's office working time. Office work time in the work area of the Surabaya City Health Center is starting at 07.00-14.00 WIB, which means that the work time of midwives in the work area of the Surabaya City Health Center in a day is 7 (seven) hours or 420 minutes. According to Ilyas (2004) states that productive work time ranges from 80% and if workers have worked above 80% of their productive time, it should be considered and noticed that the unit requires new personnel. Therefore, to determine the level of objective workload using a percentage of productive time with a normal category if productive time = 80%, low if the productive time is < 80%, and high if the production time is > 80%.

**Table 4. Distribution of Objective Workload Levels for Midwives in Surabaya City Inpatient Health Centers**

Health Center	Time Produktive		% Time Produktive 1 day Work (from standard time)	Time Level
	For 3 working days (Minutes)	For 1 working day (Minutes)		
A	1178	392,67	93,49	Height
B	1181	393,67	93,72	Height
C	1161	387	92,14	Height
D	1168	389,33	92,69	Height
E	1167	389	92,61	Height
F	1206	402	95,71	Height
G	1170	390	92,85	Height
H	1198	399,33	95,07	Height
I	1165	388,33	92,45	Height
J	1172	390,66	93,01	Height
Total	11766	3921,99		Height
Average	1176,6	392,199	93,38	Height

Based on table 4. it can be seen that all the percentage of productive time > 80% with the smallest percentage of productive time is 92.14% and the largest productive time is 95.71%. Based on table 4. the average percentage of work time for village midwives used for productive activities is also > 80%, which is 93.38% of the total work time in the work area of the Puskesmas in Surabaya, which indicates that the performance level of midwives in the work area Surabaya city health center is categorized as high.

**Table 5. Frequency of Workload Distribution**

No	Indicator	Category	Frequency	
			$\Sigma$	%
1	Time Demands	Heavy	82	82
		medium	12	12
		light	6	6
2	Heavy Physical Demands	Heavy	38	38
		medium	35	35
		light	27	27
3	Heavy Performance Demands	Heavy	40	40
		medium	32	32
		light	28	28
4	Mental Weight Levels	Heavy	48	48
		medium	26	26
		light	26	26
5	Heavy Frustration Levels	Heavy	29	29
		medium	48	48
		light	23	23
6	Heavy Business Levels	Heavy	78	78
		medium	12	12
		light	10	10



Based on Table 3. Visible frequency distribution of Workload according to NASA-TLX calculations there are 6 dimensions (mental demands, physical demands, time demands, effort demands, frustrating demands, performance demands) from the dimensions of mental demands, physical demands, time demands, business demands and the level of performance describes the weight of the katageri, while the level of frustration in the category is moderate.

**Table 6. Distribution of Frequency of Performance of Midwives**

<b>Variable</b>	<b>f</b>	<b>%</b>
<b>Ability</b>		
Good	54	54
Enough	46	46
Less	0	0,0
<b>TOTAL</b>	<b>100</b>	<b>100,0</b>
<b>Training and development</b>		
ever	50	50
Never	50	50
<b>TOTAL</b>	<b>100</b>	<b>100,0</b>

Based on Table 6. It can be seen that the performance of midwives is based on the ability of good midwives (54%) while the ability of midwives is quite as much (46%), for the performance of midwives based on training and development that has been followed (50%).

**Table 7. Frequency Distribution of Quality of Midwifery Services**

<b>Variable</b>	<b>f</b>	<b>%</b>
<b>(Tangibles)</b>		
Good	54	54
enough	46	46
less	0	0,0
<b>TOTAL</b>	<b>100</b>	<b>100,0</b>
<b>(Reliability)</b>		
Good	55	55
enough	45	45
less	0	0,0
<b>TOTAL</b>	<b>100</b>	<b>100,0</b>
<b>Empathy</b>		
Good	56	56
enough	44	44
less	0	0,0
<b>TOTAL</b>	<b>100</b>	<b>100,0</b>
<b>(Responsiveness)</b>		
Good	54	54
enough	46	46
less	0	0,0
<b>TOTAL</b>	<b>100</b>	<b>100,0</b>
<b>(Assurance)</b>		
Good	52	52
enough	48	48
less	0	0,0
<b>TOTAL</b>	<b>100</b>	<b>100,0</b>
<b>level of satisfaction</b>		
Good	59	59,0
enough	41	41,0

less	0	0,0
TOTAL	100	100,0

Based on Table 7. It can be seen that it shows that for tangibles the service quality in the Puskesmas is in the good category 54% and for the sufficient category of 46%. Service quality factors are in the good category of 55% and for the sufficient category of 45%, for the empathy quality factor the service in the Surabaya City Health Center is in the good category of 56% and for the sufficient category of 44%. Quality factors The responsiveness of services in the Puskesmas in the good category is 54% and for the sufficient category is 46%. The service quality assurance factor in the health center is in the good category of 52% and for the adequate category of 48%. It can be concluded that most assurance in the health center is in the good category (52%), Table 7 shows that the majority of respondents as much as 59% were satisfied with services at the health center and as many as 41% said they were quite satisfied with the services provided in the City Health Center Surabaya.

### 1.1 Relationship between Midwife and Performance Workloads

Based on the results of the Pearson correlation test analysis between the performance of midwives and midwives workload, the results were obtained:

**Table 8. Relationship between Midwife and Performance Workloads**

Variable	Mean	Median	Standart Deviasi (SD)	Mini mum- Maks imum	95% Confidence Interval (CI)	p-Value
Workload	395,36	394	53,61	275-536	384,142– 406,578	0.000
performance	81,8	80,5	17,645	41-128	78,11 – 85,49	

Based on the Table. 8 it can be seen that the average workload of midwives has a workload of 395.36 (95% Confidence Interval for Mean (CI): 384,142 - 406,578) with a standard deviation (SD) value of 53.61. From the results of the interval estimation it was found that 95% were believed that the average workload of midwives was 384,142 to 406,578. For the average performance of midwives 81.8 with a standard deviation (SD) value of 17,645. From the results of the interval estimation it was found that 95% believed that the average performance of midwives was 78.11 to 85.49 while the median of the performance was 80.5 and the average performance of midwives was 81.8, which meant that the performance of midwives in the health center of Surabaya , and from the results of the Pearson Correlation test there is a significant relationship between midwife workload and performance ( $p = 0,000$ ).

### 1.2 Relationship between Midwife's Workload and Service Quality

Based on the results of the Pearson correlation test analysis between midwife's workload and midwife's service quality, results were obtained:

**Table 9. Relationship between Midwife's Workload and Service Quality**

Variable	Mean	Median	Standard Deviasi (SD)	Minimum- Maksimum	95% Confidence Interval (CI)	p- Value
Workload	395,36	394	53,61	275-536	384,142– 406,578	0.000

Qualit	132,16	131	17,639	93-179	128,47	–
y		,5			135,85	

Based on the Table. 9 it can be seen that the average workload of midwives has a workload of 395.36 (95% Confidence Interval for Mean (CI): 384,142 - 406,578) with a standard deviation (SD) of 53.61. From the results of the interval estimation it was found that 95% were believed that the average workload of midwives was 384,142 to 406,578. while the average service quality is 132.16, with a standard deviation (SD) of 17.639 (95% Confidence Interval for Mean (CI): 128.47 - 135.85). With the average value of quality > 131.5, namely 132.16, the quality service is said to be good, with a heavy workload value. From the results of the Pearson correlation test there is a significant relationship between workload and service quality of midwives in the Surabaya City Health Center.

In general, in Health Center inpatient in Surabaya city, describing the performance of midwives is not good because for the time used by midwives for non-productive activities is still large, this is because it can be seen from the more mature age factor that it tends to have good social awareness. Young midwives tend not to have good social awareness compared to older midwives. Aged midwives are able to have better social awareness because they already have experience in interacting with the social world. so that there is a lot of experience and wiser in making decisions that will positively correlate with its performance. Age must get attention because it affects one's physical, mental, work ability and responsibility. In accordance with the results of surveys in the United States that show 93% of elderly workers are as good as young (4) Riyani's research (2008) also states that there is no relationship between age and performance even though the proportion difference is quite high.

The performance of midwives is used as "clinical performance indicators" as a step towards realizing commitment to be able to assess the level of individual abilities in the work team. Thus it is expected that awareness will grow, willing and able to identify the quality of each performance for the monitor to be improved and continuously improved. The model of system development and clinical performance management (SPMCK) for midwives, starts from the smallest element in the organization, namely at the level of "First Line Manager". Because productivity (services) is directly in the hands of individuals in team work (Hilan, 2003).

The measurement of mental workload in this study used the NASA-TLX questionnaire which consisted of 6 dimensions namely mental demands, physical demands, time demands (temporal demand), performance (own performance), effort level and the level of frustration that will form the average WWL (subjective workload) of a person. Overall, it can be seen that the dimensions of time demands, level of effort, and mental demands. is the highest dimension of the WWL average. This is in line with the results of Wahyuni's research (2015) that the dimensions that most often contribute to the magnitude of the WWL index are the level of effort, mental demands, and physical demands. Based on the results of the study, the most contributing to the WWL index of midwives in the Surabaya City Health Center is the dimension of time demands. Time demands are the amount of pressure time felt during doing work. The results of this study indicate that midwives at the Surabaya City Inpatient Health Center carry out their work quickly and tiring. The time demands at the Puskesmas are related to the accuracy and alertness in providing midwifery services. Limited service time with a large number of patients requires midwives to work quickly. This is in line with the results of research by Widayati et al (2014) stating that the implementation of officers in providing services is influenced by the number of patients served. Midwives must be able to divide the time for all patients so that there is little time

for each client. Whereas the time demands on maternity inpatient units are in the form of alertness in assisting labor because it relates to the lives of patients both mothers and their babies. Jobs that require time that add to the burden are administrative tasks. Administrative tasks in the form of records and reporting that must be completed every day so that each month can be collected to the relevant agencies on time in accordance with the provisions. This is supported by the results of a study by Widayati et al (2014), that there were still many midwives who said there was not enough time to rest and document.

The results of the study which showed the highest score for the two were the level of effort. The level of effort in the work as a midwife is the amount of effort that must be spent both physically and mentally to complete the work. One of the levels of effort shown in the service at the KIA Police is to continue providing midwifery services until the completion of the patient even though they have to sacrifice their rest time. While the level of effort in the maternity care unit is to remain ready to provide midwifery services, especially labor at any time for 24 hours according to the work shift. It is not uncommon for midwives in the care unit to stay overnight to observe patients giving birth and stand by at any time because of the patient's condition which can change at any time. The last dimension with the highest score is mental demands. In his work, the mental demands of the profession as a midwife are the amount of mental and perceptual activity needed in midwifery service work. A midwife is required to be always physically and psychologically prepared and has a high level of precision, patience, and responsiveness in handling patients because of her work that involves a person's life (Yolanda, 2014). Mental demands based on identification results in midwives are at the time of the patient's history. Midwives try to dig up information to assess and determine the diagnosis by being proven through the results of a physical examination. Therefore midwives must create a sense of confidence so the patient will be more easily open to expressing complaints. If the midwife can understand the patient's needs, it will be easier for the midwife to plan further actions. In addition, when counseling and explaining the results of the examination, midwives must be able to provide understanding to patients and families regarding health conditions. In KIA poly the heaviest mental burden according to the results of identification is at the time of the patient's history. With a large number of patients and limited time the midwife must try to dig up information by understanding and paying attention to the needs of the patient. The mental burden of additional midwives at the KIA Police is to evaluate the MCH program, which is almost all run by the KIA Policewomen. To be able to evaluate the KIA program, midwives first complete reporting records such as cohorts, reports from other health facilities in the Surabaya City Health Center work area. Mental demands on midwives in maternity inpatient units based on the results of identification are the accuracy in assessing the patient's condition to determine the diagnosis so that they can plan the appropriate action. Inpatient midwives face maternity patients whose condition is more at risk. Midwives must also estimate the risk of each action carried out by prioritizing patient safety. Good mental preparation will provide calm in carrying out actions and decision making. Midwives not only face patients but also have to deal with the patient's family. Midwives must be good at providing understanding to families regarding the patient's health condition and decision making.

Based on the measurement results with NASA - TLX dimensions that get the lowest score is the level of frustration, physical demands, and performance. The level of frustration in the work as a midwife is the amount of feeling insecure, hopeless, offended compared to the feeling of being safe, comfortable, and satisfied by the midwife. Frustration is a feeling of obstacles to fulfill desires (Istirohah, 2015). A midwife in carrying out her work first ensures that every action taken is in accordance with the procedure so there are no undesirable things such as the occurrence of post

partum bleeding, disability due to incorrect procedures, asphyxia, even the occurrence of death in both mother and baby. If things are not desirable to occur can provide psychological effects such as anxiety, stress, guilt, and other psychological effects.

In this study, the frustration level of midwives obtaining a low score can be due the working period of midwives at the Puskesmas is 8 years. The working period proves that some respondents have had a lot of experience in the field of midwifery care, so they are able and have their own coping mechanism in overcoming problems that arise in their work (Maharaja, 2015). Work period can significantly improve employee performance (Hardikriyawan and Margono, 2014). The longer working period will affect the quality of work which leads to improvement in the performance of an employee. Mental workload is closely related to performance, the appropriate mental workload will produce optimal performance (Wulanyani, 2013).

The second lowest dimension is physical demands. A midwife's physical demands are the amount of physical activity needed to carry out midwifery services. Based on the subjective assessment of the physical workload that dominates the MCH Polyclinic in the service of pregnancy. In pregnancy care requires a longer time and several stages of examination in advance such as laboratory tests, dental examinations, ultrasound examinations by doctors, nutritional counseling, etc. The stages of the examination sometimes make pregnancy services take longer because the process of queuing at other poly is uncertain. Midwives at the KIA Police have time demands in serving each patient because of the large number of patients while the service time is limited until all patients are served. Therefore midwives work quickly but are required to have accuracy in diagnosing and alertness in providing midwifery services.

The results of the identification of subjective assessments of physical workload that dominate the maternity inpatient unit in the delivery service. This is due to procedural delivery services that require erratic time according to the patient's condition. In delivery services there is a greater risk compared to other midwifery services in maternity inpatient units. Midwives have a double burden to save the lives of mothers and their babies. Therefore in the process of childbirth requires a good physical condition.

The task of a midwife is to carry out midwifery services (main tasks and tasks of integration), there are additional tasks, namely administrative tasks. This is in line with the results of Suparti's (2010) study, that 100% of midwives stated that they had to complete administrative tasks. The results in this study indicate that the majority of respondents were 60 respondents (60%) who stated that administrative duties were considered to be more severe than the duties of midwifery services.

The last dimension that gets the lowest score is Performance. Performance is satisfaction felt by midwives on midwifery services that have been given. Satisfaction will be obtained if the aspects of work and aspects support. If the opposite, these aspects do not support the employee will feel dissatisfied. Conditions of job satisfaction or dissatisfaction, will be feedback that will affect the performance of employees in a company (Vidianingtyas, 2014).

According to the results of Artadi's research (2014), performance is influenced by workload. So if the performance dimension gets the lowest value then the workload on midwives is said to be low because the midwife in the Puskesmas works in a team. Based on the results of the study, it can be said that the average age of the respondents was 36.71 to 41.11 years. This shows that the respondents are adults who are mature so that the way of thinking is more mature and it will also affect their consideration in working. The more mature a person will make him more mature in thinking and working as a result of his experience and maturity. In accordance with the results of

a survey conducted by Green and Mostafa (2012) that older workers have work experience, broader knowledge, social skills and better coping problems.

Most of the respondents had midwifery Diploma-3 education levels and there were those with higher education, namely 15% Diploma / 1st degree and 5% S2 Health. This shows that the majority of respondents already have competence in providing services in accordance with midwifery service standards including in providing counseling. This is in accordance with the Regulation of the Minister of Health of the Republic of Indonesia No.1464 / Menkes / X / 2010 concerning permits and implementation of midwife practices in Article 2 paragraph 2, namely midwives who carry out independent practices must have at least a midwifery Diploma-3 education.

The average length of work of respondents as midwives is 8.4 years. This means that on average midwives have carried out their duties as midwives over 3 years. Of course, during this period, midwives have had various experiences that make them more trained to face various obstacles or obstacles both from the patient and from the conditions of work. Duration of work is related to experience because with a long working experience, of course the midwife has learned a lot through various failures and successes in carrying out her duties to provide services, according to the results of Priyadi (2009) 's conclusion that long working years will form effective work patterns, because of various obstacles appearing can be controlled based on his experience, so that experienced employees will be able to finish the job well and can reduce the turnover rate which causes commitment to the organization is low.

The level of workload from midwives is grouped into 3 (three), namely mild, moderate, and severe. Workload is included in the heavy category if the average value of workload is  $> 80$ , moderate if the average workload is between 50-80, and is mild if the average workload is  $< 50$ . In this study workload was measured using NASA TLX instruments because the questionnaire was the most reliable and valid questionnaire for measuring workloads and could be used in accordance with health services (Hoonakker et al, 2011).

The workload with the heavy level felt by most respondents can be due to the existence of multiple assignments in the puskesmas. As the result of a direct interview with one of the midwives who stated that outside of his role as a midwife also held other roles such as the treasurer of one of the programs. Meanwhile, as midwives in the puskesmas, they have actually faced the demands of their own work. There are multiple tasks due to the limited number of staff while the puskesmas must run so many health programs. Another condition is the number of patients who must be serviced every day as well as the various reports that must be completed both daily and monthly as well as other activities inside and outside the puskesmas building whose schedules are not uncommon. As the results of interviews with midwives stated that they often faced dilemmas when there were patients who needed counseling assistance but at the same time were also required to complete reports or attend meetings or activities outside the puskesmas. All of these conditions cause midwives to often complain of difficulties in managing time and become unable to carry out all their tasks to the maximum (Santi, 2014). Other studies also found that among the factors that influence the role of midwives in carrying out work is lack of motivation due to heavy workloads and limited time (Zainal, 2014). High work intensity makes midwives only have a little free time and this indicates a mental workload. When differences arise between the ability of midwives in carrying out their duties with the demands of the work it will cause workloads for the midwife. Workload can be defined as the difference between ability and job demands. If the ability of workers is higher than the demands of the work, feelings will emerge bored. Conversely, if the

ability of workers is lower than the demands of work, there will be excessive fatigue (Hancock, 1988).

In this study, a good performance was shown by some midwives who had not too heavy workloads, while a heavy workload made the midwives work poorly because of overload. This was consistent with the calculation of Pearson's correlation test that there was a significant relationship between midwife's workload and performance. midwife.

Good performance can be influenced by various factors such as the commitment of each midwife and then signed by all employees in the Surabaya City Health Center to do their job well. This is consistent with Greenberg's explanation that organizational commitment is needed as one of the indicators of employee performance because employees who have high commitment can be expected to show optimal performance (Martini and Rostiana, 2003).

### **CONCLUSIONS AND SUGGESTIONS**

On average, midwives who were respondents were 32.3 years old, 80% of midwives were last educated D3, on average midwives had a tenure of 8.4 years in the Puskesmas. In this study there was a significant relationship between midwife's workload and midwife's performance, and there was a significant relationship between midwife's workload and service quality. This shows that in order to avoid work fatigue, it is necessary to rearrange work shifts in accordance with the rules and conditions of work shift provisions in maternity inpatient units, the determination of clear rest hours, when service hours can be accompanied by work music, and additional labor reduce workload, as well as the division of workload according to ability, and routinely carry out refreshing to reduce saturation.

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**ACCEPTED**

## **ANALYSIS MIDWIFE WORKLOAD WITH NASA-TLX METHOD**

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### **ABSTRACT**

**Background:** Results of preliminary studies conducted at the Health Community Centers in the city of Surabaya regarding duties and responsibilities as a midwife, showed that midwives had overlapping duties and responsibilities because midwives did not only handle maternal and child problems as their main duties and functions, but midwives also carried out all activities. This is due to the limited personnel owned by the Community Health Centers so that it can affect the workload of midwives because in addition to exercising their authority the midwife also carries out other tasks. Based on the above problems, and remembering the duties and functions of midwives as maternal and child health providers, it is important to conduct research on midwife workload analysis in carrying out their authority in the working area of Surabaya Inpatient Health Centers.

**Method:** This study has a cross-sectional quantitative research design. In this study using 2 variables (exogenous), namely Midwife Work Performance and Midwife Performance or Productivity. In this study, the endogenous variables are the quality of midwife services in the Surabaya Inpatient Health Center. The population used in this study were all implementing midwives, who provided services in 10 inpatient health centers in Surabaya. **Results and Analysis:** Pearson correlation test results indicate there is a significant relationship between workload and performance ( $p = 0.000$ ) and there is a significant relationship between workload and service quality ( $p = 0.000$ ). **Discussion and Conclusion:** in order to avoid work fatigue, it is necessary to rearrange work shifts in accordance with the rules and conditions of work shift provisions in maternity inpatient units, the determination of clear rest hours, when service hours can be accompanied by work music, and additional labor reduce workload, as well as the division of workload according to ability, and routinely carry out refreshing to reduce saturation.

**Keywords:** Workload, Performance and Service Quality

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### **INTRODUCTION**

The minister of Health Stated that one of the main targets. Health development contained in Medium Term Development Plan 2015- 2019 is increasing access and quality of basic health services and referrals especially in the small region, disadvantaged and border areas. This makes facilities role of the first instance as the spearhead of Indonesian health service. Therefore, improving the quality of health service in Indonesia especially in facilities role of an instance is something that can't be delayed anymore. Facilities role of first in instance National Health Insurance acts as a get keeper (goalkeeper). Minister of healths said facilities role of the instance itself is one of the Community Health Centers.

Based on the above problems, and the tasks carried out as maternal and child health care providers, a study of the analysis of workload was carried out in carrying out tasks in the work area of the Surabaya Inpatient Health Center.

## MATERIAL AND METHODS

This study has a cross-sectional quantitative research design. In this study using 2 causative variables (exogenous), namely Midwife's Workload and Midwife's Performance or Productivity. In this study, the resulting (endogenous) variable was the quality of midwife services at the Surabaya City Inpatient Health Center. The population used in this study were all implementing Midwives, who provided services in 10 Surabaya Inpatient Health Centers which at the time of this research was proposed 100 people while the sampling technique was using simple random techniques sampling. The analysis in this study used Pearson's correlation test.

## FINDINGS

Respondents in this study were midwives who served in the Surabaya City Inpatient Health Center. In this study, the characteristics of the respondents were seen from the age of the midwife, length of service and level of education.

**Table 1. Distribution of Objective Workload Levels for Midwives in Surabaya City Inpatient Health Centers**

Health Center	Productive Time		% Productive Time	Level
	For 3 working days (Minutes)	For 1 working day (Minutes)		
A	1178	392,67	93,49	High
B	1181	393,67	93,72	High
C	1161	387	92,14	High
D	1168	389,33	92,69	High
E	1167	389	92,61	High
F	1206	402	95,71	High
G	1170	390	92,85	High
H	1198	399,33	95,07	High
I	1165	388,33	92,45	High
J	1172	390,66	93,01	High
Total	11766	3921,99		
Average	1176,6	392,199	93,38	High

Based on table 1. it can be seen that all the percentage of productive time > 80% with the smallest percentage of productive time is 92,14% and the largest productive time is 95,71%. Based on table 2. the average percentage of work time for village midwives used for productive activities is also > 80%, which is 93,38% of the total work time in the work area of the Health Center in Surabaya, which indicates that the performance level of midwives in the work area Surabaya city health center is categorized as high.

**Table 2. The frequency of Workload Distribution**

No	Indicator	Category	Frequency	
			$\Sigma$	%
1	Time Demands	Heavy	82	82
		medium	12	12
		light	6	6
2	Physical Demands	Heavy	38	38
		medium	35	35
		light	27	27
3	Performance Demands	Heavy	40	40
		medium	32	32
		light	28	28
4	Mental Weight Levels	Heavy	48	48
		medium	26	26
		light	26	26

5	Frustration Levels	Heavy	29	29
		medium	48	48
		light	23	23
6	Business Levels	Heavy	78	78
		medium	12	12
		light	10	10

Based on Table 2. Visible frequency distribution of Workload according to NASA-TLX calculations there are 6 dimensions (mental demands, physical demands, time demands, effort demands, frustrating demands, performance demands) from the dimensions of mental demands, physical demands, time demands, business demands and the level of performance describes the weight of the category, while the level of frustration in the category is moderate.

**Table 3. Frequency Distribution of Quality of Midwifery Services**

<b>Variable</b>	<b>f</b>	<b>%</b>
<b>(Tangibles)</b>		
Good	54	54
enough	46	46
less	0	0,0
<b>TOTAL</b>	<b>100</b>	<b>100,0</b>
<b>(Reliability)</b>		
Good	55	55
enough	45	45
less	0	0,0
<b>TOTAL</b>	<b>100</b>	<b>100,0</b>
<b>(Empathy)</b>		
Good	56	56
enough	44	44
less	0	0,0
<b>TOTAL</b>	<b>100</b>	<b>100,0</b>
<b>(Responsiveness)</b>		
Good	54	54
enough	46	46
less	0	0,0
<b>TOTAL</b>	<b>100</b>	<b>100,0</b>
<b>(Assurance)</b>		
Good	52	52
enough	48	48
less	0	0,0
<b>TOTAL</b>	<b>100</b>	<b>100,0</b>
<b>level of satisfaction</b>		
Good	59	59,0
enough	41	41,0
less	0	0,0
<b>TOTAL</b>	<b>100</b>	<b>100,0</b>

Table 3 shows that the majority of respondents as much as 59% were satisfied with services at the health center and as many as 41% said they were quite satisfied with the services provided in the City Health Center Surabaya.

Based on the results of the Pearson correlation test analysis between the performance of midwives and midwives workload, the results were obtained:

**Table 4. The relationship between Midwife and Performance Workloads**

Variable	Mean	Median	SD	Minimum-Maximum	95% Confidence Interval (CI)	p-Value
Workload	395,36	394	53,61	275-536	384,142 – 406,578	0.000
performance	81,8	80,5	17,645	41-128	78,11 – 85,49	

Based on the Table. 4 it can be seen the results of the Pearson Correlation test there is a significant relationship between midwife workload and performance ( $p = 0,000$ ).

Based on the results of the Pearson correlation test analysis between midwife's workload and midwife's service quality, results were obtained:

**Table 5. The relationship between Midwife's Workload and Service Quality**

Variable	Mean	Median	SD	Minimum-Maximum	95% CI	p-Value
Workload	395,36	394	53,61	275-536	384,142 – 406,578	0.000
Quality	132,16	131,5	17,639	93-179	128,47 – 135,85	

Based on the Table. 5 it can be seen that the results of the Pearson correlation test, there is a significant relationship between workload and service quality of midwives in the Surabaya City Health Center. ( $p=0.000$ ).

The model of system development and clinical performance management (SPMCK) for midwives, starts from the smallest element in the organization, namely at the level of "First Line Manager". Because productivity (services) is directly in the hands of individuals in teamwork (Hilan, 2003).<sup>2</sup>

The measurement of mental workload in this study used the NASA-TLX questionnaire which consisted of 6 dimensions namely mental demands, physical demands, time demands (temporal demand), performance (own performance), effort level and the level of frustration that will form the average WWL (subjective workload) of a person. Overall, it can be seen that the dimensions of time demands, level of effort, and mental demands. is the highest dimension of the WWL average. This is that the dimensions that most often contribute to the magnitude of the WWL index are the level of effort, mental demands, and physical demands. Based on the results of the study, the most contributing to the WWL index of midwives in the Surabaya City Health Center is the dimension of time demands. Time demands are the amount of pressure time felt during doing work. The results of this study indicate that midwives at the Surabaya City Inpatient Health Center carry out their work quickly and tiring. The time demands at the Health Center are related to the accuracy and alertness in providing midwifery services. Limited service time with a large number of patients requires midwives to work quickly. This is in line with the results of research by Widayati et al (2014)<sup>8</sup> stating that the implementation of officers in providing services is influenced by the number of patients served. Midwives must be able to divide the time for all patients so that there is little time for each client. Whereas the time demands on maternity inpatient units are in the form of alertness in assisting labor because it relates to the lives of patients both mothers and their babies. Jobs that require time that add to the burden are administrative tasks.

Administrative tasks in the form of records and reporting that must be completed every day so that each month can be collected to the relevant agencies on time in accordance with the provisions.

The results of the study which showed the highest score for the two were the level of effort. The level of effort in the work as a midwife is the amount of effort that must be spent both physically and mentally to complete the work. One of the levels of effort shown in the service at the mothers and children health. While the level of effort in the maternity care unit is to remain ready to provide midwifery services, especially labor at any time for 24 hours according to the work shift. The last dimension with the highest score is mental demands. In his work, the mental demands of the profession as a midwife are the amount of mental and perceptual activity needed in midwifery service work. A midwife is required to be always physically and psychologically prepared and has a high level of precision, patience, and responsiveness in handling patients because of her work that involves a person's life (Yolanda, 2014).<sup>10</sup> Mental demands based on identification results in midwives are at the time of the patient's history. Midwives try to dig up information to assess and determine the diagnosis by being proven through the results of a physical examination. The mental burden of additional midwives at the mothers and children health' policy is to evaluate the MCH program, which is almost all run by the mothers and children health' polyclinic Policewomen. Good mental preparation will provide calm in carrying out actions and decision making.

In this study, the frustration level of midwives obtaining a low score can be due to the working period of midwives at the Community Health Centers is 8 years. The working period proves that some respondents have had a lot of experience in the field of midwifery care, so they are able and have their own coping mechanism in overcoming problems that arise in their work (Maharaja, 2015).<sup>5</sup> Work period can significantly improve employee performance (Hardikriyawan and Margono, 2014).<sup>1</sup> The longer working period will affect the quality of work which leads to improvement in the performance of an employee. Mental workload is closely related to performance, the appropriate mental workload will produce optimal performance (Wulanyani, 2013).<sup>9</sup>

The results of the identification of subjective assessments of physical workload that dominate the maternity inpatient unit in the delivery service.. Midwives have a double burden to save the lives of mothers and their babies. Therefore in the process of childbirth requires a good physical condition.

The last dimension that gets the lowest score is Performance. Performance is satisfaction felt by midwives on midwifery services that have been given. Satisfaction will be obtained if the aspects of work and aspects support. According to the results of Martini's research (2018),<sup>4</sup> performance is influenced by the workload.

The average length of work of respondents as midwives is 8,4 years. This means that on average midwives have carried out their duties as midwives over 3 years. Of course, during this period, midwives have had various experiences that make them more trained to face various obstacles or obstacles both from the patient and from the conditions of work. Duration of work is related to experience because with a long working experience, of course, the midwife has learned a lot through various failures and successes in carrying out her duties to provide services, according to the results of Priyadi (2009).<sup>6</sup> The level of a workload from midwives is grouped into 3 (three), namely mild, moderate, and severe. The Workload is included in the heavy category if the average value of workload is > 80, moderate if the average workload is between 50-80, and is mild if the average workload is <50. In this study, the workload was measured using NASA TLX instruments because the questionnaire was the most reliable and valid questionnaire for measuring workloads and could be used in accordance with health services (Hoonakker et al, 2011).<sup>3</sup>

The workload with the heavy level felt by most respondents can be due to the existence of multiple assignments in the Community Health Centers. As a result of a direct interview with one of the midwives who stated that outside of his role as a midwife also held other roles such as the treasurer of one of the programs. Meanwhile, as midwives in the Community Health Centers, they have actually faced the demands of their own work.. As the results of interviews with midwives stated that they often faced dilemmas when there were patients who needed counseling assistance but at the same time were also required to complete reports or attend meetings or activities outside the Community Health Centers. All of these conditions cause midwives to often complain of difficulties in managing time and become unable to carry out all their tasks to the maximum (Santi, 2014).<sup>7</sup>

In this study, a good performance was shown by some midwives who had not too heavy workloads, while a heavy workload made the midwives work poorly because of overload. This was consistent with the calculation of Pearson's correlation test that there was a significant relationship between midwife's workload and performance. midwife.

Good performance can be influenced by various factors such as the commitment of each midwife and then signed by all employees in the Surabaya City Health Center to do their job well. This is consistent with Greenberg's explanation that organizational commitment is needed as one of the indicators of employee performance because employees who have high commitment can be expected to show optimal performance (Martini and Rostiana, 2003).<sup>4</sup>

## CONCLUSION

On average, midwives who were respondents were 32,3 years old, 80% of midwives were last educated Associate's Degree in Midwifery, on average midwives had a tenure of 8,4 years in the Health Center. In this study, there was a significant relationship between midwife's workload and midwife's performance, and there was a significant relationship between midwife's workload and service quality. This shows that in order to avoid work fatigue, it is necessary to rearrange work shifts in accordance with the rules and conditions of work shift provisions in maternity inpatient units, the determination of clear rest hours, when service hours can be accompanied by work music, and additional labor reduce workload, as well as the division of workload according to ability, and routinely carry out refreshing to reduce saturation.

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No3038/MLU/2019

31-05-2019

To,

Sherly Jeniawaty

Department of Midwifery Health Polytechnic Health Ministry Surabaya, Indonesia

Dear author/s

I have pleasure to inform you that your following original research article has been accepted for publication in Medico Legal Update

### **ANALYSIS MIDWIFE WORKLOAD WITH NASA-TLX METHOD**

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It will be published in Volume 20, No.2, July – December 2020 issue. It is further mentioned for your information that our journal is a double blind peer reviewed indexed international journal. It is covered by Index Copernicus (Poland), EMBASE (Scopus), CINAHL, EBSCO host (USA) and many other international databases. The journal is now part of CSIR, DST and UGC consortia. The Journal is index with Scopus and fulfills MCI Criteria as per MCI circular dated 03/09/2015.

With regards

Yours sincerely

  
Prof. R. K. Sharma  
Editor



# Medico-Legal Update

An International Journal





# Analysis Midwife Workload with Nasa-TLX Method

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## Abstract

**Background:** Results of preliminary studies conducted at the Health Community Centers in the city of Surabaya regarding duties and responsibilities as a midwife, showed that midwives had overlapping duties and responsibilities because midwives did not only handle maternal and child problems as their main duties and functions, but midwives also carried out all activities. This is due to the limited personnel owned by the Community Health Centers so that it can affect the workload of midwives because in addition to exercising their authority the midwife also carries out other tasks. Based on the above problems and remembering the duties and functions of midwives as maternal and child health providers, it is important to conduct research on midwife workload analysis in carrying out their authority in the working area of Surabaya Inpatient Health Centers.

**Method:** This study has a cross-sectional quantitative research design. In this study using 2 variables (exogenous), namely Midwife Work Performance and Midwife Performance or Productivity. In this study, the endogenous variables are the quality of midwife services in the Surabaya Inpatient Health Center. The population used in this study were all implementing midwives, who provided services in 10 inpatient health centers in Surabaya.

**Results and Analysis:** Pearson correlation test results indicate there is a significant relationship between workload and performance ( $p = 0.000$ ) and there is a significant relationship between workload and service quality ( $p = 0.000$ ).

**Discussion and Conclusion:** In order to avoid work fatigue, it is necessary to rearrange work shifts in accordance with the rules and conditions of work shift provisions in maternity inpatient units, the determination of clear rest hours, when service hours can be accompanied by work music and additional labor reduce workload, as well as the division of workload according to ability and routinely carry out refreshing to reduce saturation.

**Keywords:** *Workload, Performance and Service Quality.*

## Introduction

The minister of Health Stated that one of the main targets. Health development contained in Medium Term Development Plan 2015- 2019 is increasing access and quality of basic health services and referrals especially in the small region, disadvantaged and border areas. This makes facilities role of the first instance as the spearhead of Indonesian health service. Therefore, improving the quality of health service in Indonesia especially in facilities role of an instance is something that can't be delayed anymore. Facilities role of first in instance National Health Insurance acts as a get keeper (goalkeeper). Minister of healths said facilities role of the instance itself is one of the Community Health Centers.

Based on the above problems and the tasks carried out as maternal and child health care providers, a study of the analysis of workload was carried out in carrying out tasks in the work area of the Surabaya Inpatient Health Center.

## Material and Method

This study has a cross-sectional quantitative research design. In this study using 2 causative variables (exogenous), namely Midwife's Workload and Midwife's Performance or Productivity. In this study, the resulting (endogenous) variable was the quality of midwife services at the Surabaya City Inpatient Health Center. The population used in this study were all

implementing Midwives, who provided services in 10 Surabaya Inpatient Health Centers which at the time of this research was proposed 100 people while the sampling technique was using simple random techniques sampling. The analysis in this study used Pearson's correlation test.

**Findings:** Respondents in this study were midwives who served in the Surabaya City Inpatient Health Center. In this study the characteristics of the respondents were seen from the age of the midwife, length of service and level of education.

**Table 1: Distribution of objective workload levels for midwives in surabaya city inpatient health centers**

Health Center	Productive Time		% Productive	Time
	For 3 working days (Minutes)	For 1 working day (Minutes)	Time 1 day Work (from standard time )	Level
A	1178	392,67	93,49	High
B	1181	393,67	93,72	High
C	1161	387	92,14	High
D	1168	389,33	92,69	High
E	1167	389	92,61	High
F	1206	402	95,71	High
G	1170	390	92,85	High
H	1198	399,33	95,07	High
I	1165	388,33	92,45	High
J	1172	390,66	93,01	High
Total	11766	3921,99		
Average	1176,6	392,199	93,38	High

**Table 2: The frequency of Workload Distribution**

No.	Indicator	Category	Frequency	
			$\Sigma$	%
1.	Time Demands	Heavy	82	82
		Medium	12	12
		Light	6	6
2.	Physical Demands	Heavy	38	38
		Medium	35	35
		Light	27	27
3.	Performance Demands	Heavy	40	40
		Medium	32	32
		Light	28	28
4.	Mental Weight Levels	Heavy	48	48
		Medium	26	26
		Light	26	26
5.	Frustration Levels	Heavy	29	29
		Medium	48	48
		Light	23	23
6.	Business Levels	Heavy	78	78
		Medium	12	12
		Light	10	10

Based on table 1 it can be seen that all the percentage of productive time > 80% with the smallest percentage of productive time is 92,14% and the largest productive time is 95,71%. Based on table 2. The average percentage of work time for village midwives used for productive

performance demands) from the dimensions of mental demands, physical demands, time demands, business demands and the level of performance describes the weight of the category, while the level of frustration in the category is moderate.

**Table 3. The relationship between Midwife and Performance Workloads**

Variable	Mean	Median	SD	Minimum-Maximum	95% Confidence Interval (CI)	p-Value
Workload	395,36	394	53,61	275-536	384,142 – 406,578	0.000
Performance	81,8	80,5	17,645	41-128	78 ,11 – 85, 49	

Based on the Table. 3 it can be seen the results of the Based on the results of the Pearson correlation test Pearson Correlation test there is a significant relationship analysis between midwife's workload and midwife's between midwife workload and performance (p = 0,000). service quality, results were obtained:

**Table 4. The relationship between Midwife's Workload and Service Quality**

Variable	Mean	Median	SD	Minimum-Maximum	95% CI	p-Value
Workload	395,36	394	53,61	275-536	384,142 – 406,578	0.000
Quality	132,16	131,5	17,639	93-179	128,47 – 135, 85	

activities is also > 80%, which is 93,38% of the total work time in the work area of the Health Center in Surabaya, which indicates that the performance level of midwives in the work area Surabaya city health center is categorized as high.

Based on Table 2. Visible frequency distribution of Workload according to NASA-TLX calculations there are 6 dimensions (mental demands, physical demands, time demands, effort demands, frustrating demands,

Based on the Table. 4, it can be seen that the results of the Pearson correlation test, there is a significant relationship between workload and service quality of midwives in the Surabaya City Health Center.(p=0.000).

The model of system development and clinical performance management (SPMCK) for midwives, starts from the smallest element in the organization, namely at the level of "First Line Manager", because productivity (services) is directly in the hands of individuals in teamwork.<sup>2</sup>

The measurement of mental workload in this study used the NASA-TLX questionnaire which consisted of 6 dimensions namely mental demands, physical demands, time demands (temporal demand), performance (own performance), effort level and the level of frustration that will form the average WWL (subjective workload) of a person. Overall, it can be seen that the dimensions of time

The majority of respondents as much as 59% were satisfied with services at the health center and as many as 41% said they were quite satisfied with the services provided in the City Health Center Surabaya.

Based on the results of the Pearson correlation test analysis between the performance of midwives and midwives workload, the results were obtained:

demands, level of effort and mental demands. is the highest dimension of the WWL average. This is that the dimensions that most often contribute to the magnitude of the WWL index are the level of effort, mental demands and physical demands. Based on the results of the study, the most contributing to the WWL index of midwives in the Surabaya City Health Center is the dimension of time demands. Time demands are the amount of pressure time felt during doing work. The results of this study indicate that midwives at the Surabaya City Inpatient Health Center carry out their work quickly and tiring. The time demands at the Health Center are related to the accuracy and alertness in providing midwifery services. Limited service time with a large number of patients requires midwives to work quickly. This is in line with the results of research by Widayati et al, stating that the implementation of officers in providing services is influenced by the number of patients served. Midwives must be able to divide the time for all patients so that

there is little time for each client.<sup>8</sup> Whereas the time demands on maternity inpatient units are in the form of alertness in assisting labor because it relates to the lives of patients both mothers and their babies. Jobs that require time that add to the burden are administrative tasks. Administrative tasks in the form of records and reporting that must be completed every day so that each month can be collected to the relevant agencies on time in accordance with the provisions.

The results of the study which showed the highest score for the two were the level of effort. The level of effort in the work as a midwife is the amount of effort that must be spent both physically and mentally to complete the work. One of the levels of effort shown in the service at the mothers and children health. While the level of effort in the maternity care unit is to remain ready to provide midwifery services, especially labor at any time for 24 hours according to the work shift. The last dimension with the highest score is mental demands. In his work, the mental demands of the profession as a midwife are the amount of mental and perceptual activity needed in midwifery service work. A midwife is required to be always physically and psychologically prepared and has a high level of precision, patience and responsiveness in handling patients because of her work that involves a person's life.<sup>10</sup> Mental demands based on identification results in midwives are at the time of the patient's history. Midwives try to dig up information to assess and determine the diagnosis by being proven through the results of a physical examination. The mental burden of additional midwives at the mothers and children health' policy is to evaluate the MCH program, which is almost all run by the mothers and children health' polyclinic Policewomen. Good mental preparation will provide calm in carrying out actions and decision making.

In this study, the frustration level of midwives obtaining a low score can be due to the working period of midwives at the Community Health Centers is 8 years. The working period proves that some respondents have had a lot of experience in the field of midwifery care, so they are able and have their own coping mechanism in overcoming problems that arise in their work.<sup>5</sup> Work period can significantly improve employee performance<sup>[1]</sup>. The longer working period will affect the quality of work which leads to improvement in the performance of an employee. Mental workload is closely related to performance, the appropriate mental workload will produce optimal performance.<sup>9</sup>

The results of the identification of subjective assessments of physical workload that dominate the maternity inpatient unit in the delivery service. Midwives have a double burden to save the lives of mothers and their babies. Therefore in the process of childbirth requires a good physical condition.

The last dimension that gets the lowest score is Performance. Performance is satisfaction felt by midwives on midwifery services that have been given. Satisfaction will be obtained if the aspects of work and aspects support. According to the results of Martini's research<sup>4</sup>, performance is influenced by the workload.

The average length of work of respondents as midwives is 8,4 years. This means that on average midwives have carried out their duties as midwives over 3 years. Of course, during this period, midwives have had various experiences that make them more trained to face various obstacles or obstacles both from the patient and from the conditions of work. Duration of work is related to experience because with a long working experience, of course, the midwife has learned a lot through various failures and successes in carrying out her duties to provide services, according to the results of Priyadi.<sup>6</sup> The level of a workload from midwives is grouped into 3 (three), namely mild, moderate and severe. The Workload is included in the heavy category if the average value of workload is > 80, moderate if the average workload is between 50-80 and is mild if the average workload is <50. In this study, the workload was measured using NASA TLX instruments because the questionnaire was the most reliable and valid questionnaire for measuring workloads and could be used in accordance with health services.<sup>3</sup>

The workload with the heavy level felt by most respondents can be due to the existence of multiple assignments in the Community Health Centers. As a result of a direct interview with one of the midwives who stated that outside of his role as a midwife also held other roles such as the treasurer of one of the programs. Meanwhile, as midwives in the Community Health Centers, they have actually faced the demands of their own work. As the results of interviews with midwives stated that they often faced dilemmas when there were patients who needed counseling assistance but at the same time were also required to complete reports or attend meetings or activities outside the Community Health Centers. All of these conditions cause midwives to often complain of difficulties in managing time and

become unable to carry out all their tasks to the maximum.<sup>7</sup>

In this study, a good performance was shown by some midwives who had not too heavy workloads, while a heavy workload made the midwives work poorly because of overload. This was consistent with the calculation of Pearson's correlation test that there was a significant relationship between midwife's workload and performance midwife.

Good performance can be influenced by various factors such as the commitment of each midwife and then signed by all employees in the Surabaya City Health Center to do their job well. This is consistent with Greenberg's explanation that organizational commitment is needed as one of the indicators of employee performance because employees who have high commitment can be expected to show optimal performance.<sup>4</sup>

## Conclusion

On average, midwives who were respondents were 32,3 years old, 80% of midwives were last educated Associate's Degree in Midwifery, on average midwives had a tenure of 8,4 years in the Health Center. In this study, there was a significant relationship between midwife's workload and midwife's performance and there was a significant relationship between midwife's workload and service quality. This shows that in order to avoid work fatigue, it is necessary to rearrange work shifts in accordance with the rules and conditions of work shift provisions in maternity inpatient units, the determination of clear rest hours, when service hours can be accompanied by work music and additional labor reduce workload, as well as the division of workload according to ability and routinely carry out refreshing to reduce saturation.

**Ethical Clearance:** Taken from Health Polytechnic Health Ministry Surabaya committee.

**Source of Funding:** Self

**Conflict of Interest:** Nil

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