The Needs of Nurse at Public Health Center in South Buton Regency, Indonesia

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Abstract

Since the south Buton regency became the new autonomy region, there are still many problems and challengings found and even influence the health program, mainly, the lack of human resources which is nurse. This study aims to calculate the needs of nurses at health centers in Buton Selatan Regency. This research uses descriptive approach by using analysis method of Workload Analysis. The study was conducted by observation. The observation was conducted in 5 health centers which each one has 3 nurses. The result shows that all of the health centers over the south Buton Regency need approximately 71 nurses. It is concluded that they still need 41 nurses out of 71. The most significant lack of the nurse is at the health center of Kadatua, while less lack of nurse is in Batauga which is only 5 nurses to be needed. It felt there must be a training of the estimation number by using analysis of task onus for the health center and health department.

Keywords: needs; workload; nurse; health center.

1. Introduction

Decentralization is defined as the transfer of authority and responsibility of public functions of the central government to subordinate units or semi-independent government organizations [1].

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Decentralization within the framework of health development is intended to further optimize health development by bringing health services closer to the community and shortening the health service bureaucracy [2]. One of the trends associated with the implementation of decentralization is the establishment of new autonomous regions (region expansion). The policy of establishing new autonomous regions (region expansion) which seem to be an integral part of the implementation of regional autonomy in Indonesia which must have a positive impact in the field of socio – cultural, public services, economic development, defense, security, and national integration [3]. According to Ida which is taken by Justam [4], the expansion of the region is expected to improve the welfare of the community such as through improving services to the community and the acceleration of regional economic development. However, in its development, there are several research results which conclude that expansion of area is not the main answer to improve the welfare of the community. The South Buton Regency is one of the autonomous regions in Southeast Sulawesi which is formed simultaneously with the publication of the Constitution Number 16, 2014. The South Buton Regency is the expansion of Buton Regency with a hope to increase the good service in bureaucracy, development, social, and also the ability of the utilization of the region potential resources to carry out the successful of autonomy regency [5]. Since the south Buton Regency became the new autonomy region, there are still many problems and challengings found and even influence, the health program, mainly in globalization era, region autonomy with transformation of information which grows rapidly which gives and impact of how complicated the problems and challengings are [6]. The death rate of babies in this region 2015 is 12 per 1.000 of birth, the number of baby's death reaches 9 cases. And the neonatal's death is 11 cases so the total is 20 from 1.686 birth [6]. While the death rate of mothers in the south Buton Regency based on the report of health department 2015 is 297 per 100.000 of birth (5 cases).if it is compared with the target National in 2015 are 102 per 100.000 of the birth, so, the death rate of the the mother is high enough [6]. The problems that are being faced by the government nowadays in managing Health Human Resources (HHR) is the lack of cooperation in financial, the plan which has not reflected the plan of HHR for every agencies, the low number and the capacity of the HHR planner and the information data [7]. Lukman [8] conclude that there is a discrepancy between the needs and the situation in health center because of the lack of professional staff in the the planning of increasing the human resources, not using a method of counting staff, there is no accurate planning. Merlinda [9] based on the research result in Kepulauan Mentawai concludes that the planning system is not running well yet because of the uncompleted data and the one that provided is not accurate, the lack of socialization also information about the policy that is used for planning health care giver and also the deficient of consultation and coordination. There are some ways to apply the planning of HHR. Sukardi [10] organizing the planning of needs based on in patients category. A few research uses *Workload Indicator Staff Need (*WISN*)* which is developed by WHO [11-13]. Budiman [14] uses approach system in organizing the health planning. While some of them use the counting based on the work responsibility [15, 16]. Ministry of health makes the planning guidelines for the needs of health human resources using various methods, they are the work onus analysis, standard of minimum tranquility and the method of population ratio and Standard minimum tranquility based on agencies, population method based on region [7]. Based on the results of the researches that are done by the researchers, workload analysis method from the ministry of health "year" is not used yet on the research of counting of the HHR needs. From the discussion above, the experts state that there must be a research such as counting of how many health care giver in health center needed approximately in the South Buton Regency as the new autonomy region by using workload analysis which is

done by ministry of health in 2015. The counting of needs is done with the nurses.

2. Material and Methods

Location and research design

The research is located in the South Buton Regency. The South Buton Regency is the expansion new autonomy region from Buton Regency based on the Constitution number 16 2016. The consideration of choosing Buton Regency as the research location is the lack of health care giver or nurse in the South Buton Regency. Now the nurse ratio in The South Buton Regency 55,3/ 100.000 population from national standard 162,4/100.000 of the population. The research is done in 5 health centers in the South Buton Regency they are Puskesmas Batauga, Puskesmas Batuatas, Puskesamas Kadatua, Puskesmas Sampolawa dan Puskesmas Siompu Barat. The research method that is used is descriptive approach by workload analysis method.

Population and sample

The population of this research will be the nurse in the health center in the south buton regency who are 15 participants. The observation is done from the three participants/nurses in each health center. The participants that are observed, are the midwife and the nurse who is officially the civil servant, except at the health center that has not have midwife and the nurse who is civil servant, the observation, and the interview is done to the midwife nad the nurse who happen work part time and the volunteers who also happen in there..

Method of collecting data

The collecting of data is from the observation that is done with the nurse to know how much time it takes to serve the main task and the extra one. The observation is done by using the observation sheets which is developed from Standard Operational Procedure (SOP) the nurse in the health department in the south Buton Regency and the manual book of planning for healthy human resources needs BPPSDM 2015. The researcher uses a stopwatch and the camera for counting and taking the observation data.

Analisis Data

Data analysis is done by using the workload analysis method by determining health facility and the type of HHR to determine that each health center needs how many of the nurse, then estimate the time work which is 1200 hours/days or 72000 minutes/years. then, determine the workload component and time based on the task which is obviously done by the nurse based on their main task and the functional stuff. After that, the counting of workload standard which is the volume of their task for a year of the nurse. Then, counting the Suporting Task Standard (STS) task and the factor of the functional task that is done by determining the work time of the nurse by timing the norm of time with the time provided, the counting of Factor of supporting task (FST) by dividing time of activity with time provided times 100. After that, count the needs of a nurse by timing the number of main task employ with the standard of functional one which is done wich is done and supported by the previous steps. the last is to do the recapitulation of the nurse stuff needed with the number of the nurse that we have at

the moment, the number of the nurse that is needed and also their condition (less).

3. Results

Sample characteristic

Table 1 shows the characteristic of the nurse based on the age mostly around 25-34 years old (60%), while the nurse around 35-44 years old is 6 people (40%).

Based on gender which is dominated by a female who are 10 people (67%) while male is just 5 people (33%). Based on the employment status which is civil servant is 11 people (73%) while part time employees are just 4 people (27%).

Table 1: The nurse characteristic distribution

Respondent Characteristic	n	%
Age		
25-34 years old	9	60
35-44 years old	6	40
Gender		
Male	5	33
Female	10	67
Employment status		
Civil Servant	11	73
Volunteer	4	27

The needs of the nurse in Batauga Health Center

Table 2 shows that the type of nurse activities for their main task that needs the most nurse is the individual assessment of the outpatient is 1,559 and get total need of the nurse (TN Nurse) to do their main task in the health center of Batauga is 4,315.

While the factor of the functional task of the nurse is mostly giving personality health counseling, is 23,10 and obtain score the functional task of the nurse at Batauga health center is 4,46. the total of the needs of the nurse is the multiplication between TN Nurse and STS is 19,26 (the integer become 20). So that, the total needs of the nurse in Batauga health center are 20 people.

The needs of nurse in health Center of Batuatas

Table 3 shows that the type of nurse activity in their main task which need more nurses is the individual counseling for outpatient is 1,16 make total TN Nurse nurse to do the main task in health center of Batuatas 2,832. While the biggest factor supporting the task of the nurse supporting task is the personality of health counseling, is 9,90 and obtained score STS nurse of Batuatas health center is 2,81.

The total of the needs of the nurse is the multiplication between TN Nurse and STS is 7,96 (the integer became 8). So, the total of the needs of the nurse in Batuatas health center is 8.

Table 2: The accumulation of the needs of nurse based on workload analysis in Batauga health cennter

Work time provided = 72000 Minutes/ year with 6 days work				
	Type of activity	**Workload Standard**	**achievement**	**Number of needs**
Main Task	Outpatient			
	Individual research	4235	6604	1,559
	To determine the diagnisis of nursing	18000	6604	0,367
	Action planning of nursing	24000	6604	0,275
	Nursing implementation	9000	6604	0,734
	Evaluation	24000	6604	0,275
	Documentation	12000	6604	0,550
	Inpatient			
	Individual research	2880	24	0,008
	To determine the diagnisis of nursing	14400	24	0,002
	Action planning of nursing	14400	24	0,002
	Nursing implementation	335	24	0,072
	Evaluation	14400	24	0,002
	Documentation	14400	24	0,002
	Visiting houses	3600	1685	0,468
The Total of the needs of the nurse (TN Nurse)				4,315
	Activity	**Time (Minute/ year)**		**FST**
Supporting Task	Provide health stuff and room	5280		7,33
	Giving personal counseling	16632		23,10
	Make the anual POA	180		0,25
	Make jthe monthly POA	1440		2,00
	Doing the Scrining	2160		3,00
	Doing the pusling dan posyandu	5760		8,00
	Join the lokmin	1440		2,00
	Doing the socialization for the new employ	5760		8,00
	Community counseling	5760		8,00
	Noticing and reporting of counseling result	1440		2,00
	Listing and reporting the w2 (weekly report and KLB)	3120		4,33
	Noticing and reporting of STS	2160		3,00
	Noticing and reporting of p2 ISPA	2160		3,00
	Join the training	300		0,42
	Doing Task of p3K	120		0,17
	Noticing and reporting the un-contagious illness	2160		3,00
	FST in %			**77,60**
Suporting Task Satandard(STS) = (1/(1-FST/100)				4,46
Total of the needs of the nurse (TN Nurse x STS)				19,26
integration				**20**

The needs of nurse in health center of Kadatua

Table 4 shows that the kind of nurse activity on their main task that needs the biggest number of the nurse is the individual assessment of outpatient is 1,531 and obtained total TN Nurse to implement the main task in health center of Kadatua is 3,816. The biggest actors of supporting tasks on the nurse supporting task keratan give the personality counseling is 22,73 and obtain score STS nurse at Kadatua health center is 4,39. The total of the needs of the nurse is the multiplication between TN Nurse and STS is 16,76 (rounded to 17). So the health center of Kadatua needs 17 nurses.

Table 3: The accumulation of the needs of nurse based on workload analysis in Batuatas health cennter

	Work time provided = 72000 Minutes/ year with 6 days work			
	Type of activity	**Workload Standard**	**achievement**	**Number of needs**
	Outpatient			
	Individual research	3600	4198	1,166
	To determine the diagnisis of nursing	14400	4198	0,292
	Action planning of nursing	24000	4198	0,175
	Nursing implementation	8000	4198	0,525
	Evaluation	24000	4198	0,175
Main Task	Documentation	14400	4198	0,292
	Inpatient			
	Individual research	2880	25	0,009
	To determine the diagnisis of nursing	14400	25	0,002
	Action planning of nursing	14400	25	0,002
	Nursing implementation	313	25	0,080
	Evaluation	12000	25	0,002
	Documentation	12000	25	0,002
	Visiting houses	3600	405	0,113
	The Total of the needs of the nurse			**2,832**
	Activity	**Time (Minute/ year)**	**FST**	
	Provide health stuff and room	5280	7,33	
	Giving personal counseling	7128	9,90	
	Make the anual POA	180	0,25	
	Make jthe monthly POA	1440	2,00	
	Doing the Scrining	2160	3,00	
	Doing the pusling dan posyandu	5760	8,00	
	Join the lokmin	1440	2,00	
	Doing the socialization for the new employ	5760	8,00	
Supporting Task	Community counseling	5760	8,00	
	Noticing and reporting of counseling result	1440	2,00	
	Listing and reporting the w2 (weekly report and KLB)	3120	4,33	
	Noticing and reporting of STS	2160	3,00	
	Noticing and reporting of p2 ISPA	2160	3,00	
	Join the training	300	0,42	
	Doing Task of p3K	120	0,17	
	Noticing and reporting the un-contagious illness	2160	3,00	
	FST in %		**64,40**	
Suporting Task Satandard(STS) = (1/(1-FST/100)			2,81	
Total of the needs of the nurse (TN Nurse x STS)			7,96	
integration			**8**	

Tabel 4: The accumulation of the needs of nurse based on workload analysis in Kadatua health cennter

Work time provided = 72000 Minutes/ year with 6 days work				
	Type of activity	Workload Standard	achievement	Number of needs
Main Task	Outpatient			
	Individual research	4235	6485	1,531
	To determine the diagnisis of nursing	18000	6485	0,360
	Action planning of nursing	24000	6485	0,270
	Nursing implementation	9000	6485	0,721
	Evaluation	24000	6485	0,270
	Documentation	12000	6485	0,540
	Inpatient			
	Individual research	2880	25	0,009
	To determine the diagnisis of nursing	14400	25	0,002
	Action planning of nursing	14400	25	0,002
	Nursing implementation	335	25	0,075
	Evaluation	14400	25	0,002
	Documentation	14400	25	0,002
	Visiting houses	3600	120	0,033
	The Total of the needs of the nurse			**3,816**
	Activity	Time (Minute/ year)		FST
Supporting Task	Provide health stuff and room	5280		7,33
	Giving personal counseling	16368		22,73
	Make the anual POA	180		0,25
	Make jthe monthly POA	1440		2,00
	Doing the Scrining	2160		3,00
	Doing the pusling dan posyandu	5760		8,00
	Join the lokmin	1440		2,00
	Doing the socialization for the new employ	5760		8,00
	Community counseling	5760		8,00
	Noticing and reporting of counseling result	1440		2,00
	Listing and reporting the w2 (weekly report and KLB)	3120		4,33
	Noticing and reporting of STS	2160		3,00
	Noticing and reporting of p2 ISPA	2160		3,00
	Join the training	300		0,42
	Doing Task of p3K	120		0,17
	Noticing and reporting the un-contagious illness	2160		3,00
	FST in %			77,23
Suporting Task Satandard(STS) = (1/(1-FST/100)				4,39
Total of the needs of the nurse (TN Nurse x STS)				16,76
integration				**17**

The needs of nurse in health center of Sampolawa

Table 5 shows that the type of nurse activity in their main task which need more nurses are the individual counseling for outpatient is 1,148 make total TN Nurse to do the main task in health center of Sampolawa is 2,915. While the biggest factor supporting the task of the nurse supporting task is the personality of health counseling, is 23,10 and obtained score STS nurse of Sampolawa health center is 6,10. The total of the needs of

the nurse is the multiplication between TN Nurse and STS is 17,77 (the integer became 18). So, the total of the needs of nurse in Sampolawa health center is 18 nurses.

Tabel 5: The accumulation of the needs of nurse based on workload analysis in Sampolawa health center

Work time provided = 72000 Minutes/ year with 6 days work				
	Type of activity	**Workload Standard**	**Achievement**	**Number of needs**
Main Task	Outpatient			
	Individual research	4235	4863	1,148
	To determine the diagnisis of nursing	18000	4863	0,270
	Action planning of nursing	24000	4863	0,203
	Nursing implementation	9000	4863	0,540
	Evaluation	24000	4863	0,203
	Documentation	12000	4863	0,405
	Inpatient			
	Individual research	2880	32	0,011
	To determine the diagnisis of nursing	14400	32	0,002
	Action planning of nursing	14400	32	0,002
	Nursing implementation	335	32	0,096
	Evaluation	14400	32	0,002
	Documentation	14400	32	0,002
	Outpatient	3600	108	0,030
	The Total of the needs of the nurse			**2,915**
	Activity	**Time (Minute/ year)**		**FST**
Supporting Task	Provide health stuff and room	5280		7,33
	Giving personal counseling	16632		23,10
	Make the anual POA	180		0,25
	Make jthe monthly POA	1440		2,00
	Doing the Scrining	2160		3,00
	Doing the pusling dan posyandu	7200		10,00
	Join the lokmin	1440		2,00
	Doing the socialization for the new employ	7200		10,00
	Community counseling	7200		10,00
	Noticing and reporting of counseling result	1440		2,00
	Listing and reporting the w2 (weekly report and KLB)	3120		4,33
	Noticing and reporting of STS	2160		3,00
	Noticing and reporting of p2 ISPA	2160		3,00
	Join the training	300		0,42
	Doing Task of p3K	120		0,17
	Noticing and reporting the un-contagious illness	2160		3,00
	FST in %			**83,60**
Suporting Task Satandard(STS) = (1/(1-FST/100)				6,10
Total of the needs of the nurse (TN Nurse x STS)				17,77
integration				18

The needs of nurse in health center of West Siompu

Table 6 shows that the kind of nurse activity on their main task that needs the biggest number of the nurse is the

individual assessment of outpatient is 0,853 and obtained total TN Nurse to implement the main task in health center of the West Siompu is 2,134. The biggest actors of supporting tasks on the nurse supporting task give the personality counseling is 18,33 and obtain score STS nurse at the west simple health center is 3,31. The total of the needs of the nurse is the multiplication between TN Nurse and STS is 7,07 (it become 8). So the health center of the West simple needs 8 nurses.

Table 6: The accumulation of the needs of nurse based on workload analysis in Siompu Barat health center

Work time provided = 72000 Minutes/ year with 6 days work				
	Type of activity	**Workload Standard**	**achievement**	**Number of needs**
	Outpatient			
	Individual research	4235	3611	0,853
	To determine the diagnisis of nursing	18000	3611	0,201
	Action planning of nursing	24000	3611	0,150
	Nursing implementation	9000	3611	0,401
	Evaluation	24000	3611	0,150
	Documentation	12000	3611	0,301
Main Task	Inpatient			
	Individual research	2880	14	0,005
	To determine the diagnisis of nursing	14400	14	0,001
	Action planning of nursing	14400	14	0,001
	Nursing implementation	335	14	0,042
	Evaluation	14400	14	0,001
	Documentation	14400	14	0,001
	Outpatient	3600	97	0,027
	The Total of the needs of the nurse			**2,134**
	Activity	**Time (Minute/ year)**		**FST**
	Provide health stuff and room	5280		7,33
	Giving personal counseling	13200		18,33
	Make the anual POA	180		0,25
	Make jthe monthly POA	1440		2,00
	Doing the Scrining	2160		3,00
	Doing the pusling dan posyandu	5760		8,00
	Join the lokmin	1440		2,00
	Doing the socialization for the new employ	5760		8,00
Supporting Task	Community counseling	5760		8,00
	Noticing and reporting of counseling result	1440		2,00
	Listing and reporting the w2 (weekly report and KLB)	3120		4,33
	Noticing and reporting of STS	2160		3,00
	Noticing and reporting of p2 ISPA	300		0,42
	Join the training	120		0,17
	Doing Task of p3K	2160		3,00
	FST in %			69,83
Suporting Task Satandard(STS) = (1/(1-FST/100)				3,31
Total of the needs of the nurse (TN Nurse x STS)				7,07
integration				**8**

The recapitulation of the needs of the nurse at the health center in South Buton Regency

Table 7 shows that all of the community health centers in the South Buton Regency have a lack of nurse. The health center which has less nurse is in Kadatua that are 13 people. And on the other hand for the health center which needs less nurse is Batauga they are 5 people only. the health center of the community in South Buton Regency needs 71 nurses. There is imbalance between the needs of nurse than what we have right now which are 41 nurses.

Table 7: Recapitulation of the needs of the nurse at the health center of the South Buton Regency

No	The health center	Total of the needs of the nurse at the moment	The necessity of the nurse	The gap	The situation
1	Batauga	15	20	-5	less
2	Batuatas	2	8	-6	less
3	Kadatua	4	17	-13	less
4	Sampolawa	9	18	-9	less
5	Siompu Barat	0	8	-8	less
South Buton Regency		**30**	**71**	**-41**	**less**

4. Discussion

The counting method of HHR based on Permenkes number 33/ 2015 about the arrangement guideline of the needs planning of HHR is divided into 3 ways such as with the estimation planning of needs of the HHR based of the health care giver ratio toward community, the needs planning of HHR based on the minimum standard of the employment and the planning of the needs of HHR based on the workload analysis method.

Workload analysis is one of the ways to determine the planning of human resources necessary. The use of workload analysis method aims to obtain the calculation of planning necessity of HHR with reality according to its competency in the Institute wether in the head facility of health center (hospital, community health center and the branches, small community health center, health laboratory, pharmacy, clinic, and other health facilities) or on health facility, which encompass the structural position, the particular functional position, and the general functional position [17].

The complement of the data plays an important role of the accuracy of method calculation of workload analysis method, where the supporting data which is related to workload encompass the type nad the total of HHR, type of task (main and supporting task), and the achievement/ compassion of program, eventually will be analyzed by using the pattern which is prescribed based of the arrangement guideline of workload analysis method from the health ministry with the supporting of Microsoft excel. The accuracy of counting by using workload analysis method is determined with the complement of observation data, interview data, and more secund data. The observation data is the daily activity of the midwife and the nurse in the healthe center which is the workload component, such as the explanation of the main task and supporting task. This two activities will eventually determine the number of the necessity of the nurse for each health center in the South Buton Regency.

From all the calculation of the workload, presents the needs of the nurse in on the main task which need the biggest number of the nurse is the individual observation of outpatient and the biggest support for the nurse's supporting task is the personality counseling activity.

All the research show that all of the health centers has lack of nurse. The result of workload analysis will simplify the health center in the planning of the needs of the new nurse, therefore, it is suitable with each health center workload. The research that is done in Denpasar shows that the estimation of the needs of doctors in health center is more objective if it uses the calculation of workload analysis rather than using the rationing method of calculation [18]

A research in Palembang found that the total of human resource for the nurse, midwife workload analysis, laboratory staff and the obstetrician in health center is still needed more and it has the high workload at Merdeka health center of Palembang [19].

The workload is not relevant if it is seen from the quantity of activity which is done by doctor or other health care staff it affect the stresses and influences the service which given to the patients as the consumers [20]. Hagopian, Mohanty [21] said that the analysis of the workload will help to find out the needs of the doctors or nurses.

A study which is done by Shah, Jaffari [22] does the research about the workload and the performance concludes that workload effect the significant impact to the performance. the workload must be balanced with the employ's ability and potential to control their stresses.

5. Conclusion

It is concluded that the health center of community in the South Buton Regency have a lack of nurses or health care giver for 41 to be hired. The most lack of the nurses is in Kadatua health center which is just 13 nurses. While the lees needs of the nurse are in Batauga health center which is just 5 nurses to be needed. There must be some training of workload analysis method calculation of the needs of the health care giver especially have to be given more attention for the health center or health department also agency.

Conflict Interest

Authors declared there is no conflict interest

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