

ANALYSIS OF WORKLOAD AND NEEDS FOR HEALTH PERSONNEL IN PEUSANGAN SIBLAH KRUENG PUBLIC HEALTH CENTER, A REMOTE AREA OF BIREUEN DISTRICT USING THE WISN METHOD

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Abstract

Peusangan Siblah Krueng Community Health Center is a community health center located in a remote area of Bireuen Regency, Aceh Province, with limited accessibility and a wide coverage area. This study aims to analyze the workload and calculate the need for health workers based on the Workload Indicator of Staffing Need (WISN) method. This study is a quantitative descriptive study with work sampling observations and in-depth interviews. The subjects were all health workers on duty (n=13). Available working time was calculated at 1,883 hours/year. The analysis results indicate a shortage of personnel in the positions of dentist (1 person), nurse (2 people), nutritionist (1 person), and pharmacist/TTK (1 person). The lowest WISN ratio was found in the nursing profession (0.54), indicating a significant workload exceeding the capacity of available personnel. The community health center needs to apply for additional personnel through the Nusantara Sehat mechanism and coordinate with the Bireuen Regency Health Office to meet the personnel standards according to Minister of Health Regulation Number 43 of 2019.

Keywords: workload, Bireuen, remote health center, health workers, WISN

INTRODUCTION

Community health centers (Puskesmas) are first-level healthcare facilities that serve as the backbone of basic health services for the Indonesian people. As mandated by Minister of Health Regulation (Permenkes) Number 43 of 2019 concerning Community Health Centers, each puskesmas is required to have sufficient human health resources that meet minimum staffing standards based on the characteristics of its working area, whether urban, rural, remote, or very remote. The shortage and inequality of healthcare workers in Indonesia remains a serious challenge. Nationally, the number of healthcare workers working in community health centers (Puskesmas) across Indonesia in 2022 reached more than 434,000, with a total of 10,374 units. However, the distribution remains highly unequal between urban and remote rural areas (Ministry of Health, 2023). Consequently, the workload of healthcare workers in remote Puskesmas far exceeds their capacity, while certain types of healthcare workers, such as dentists, pharmacists, and nutritionists, are often completely unavailable (Sari et al., 2023).

Peusangan Siblah Krueng Community Health Center serves a remote area in Bireuen Regency, Aceh Province. Its working area covers the Peusangan Siblah Krueng District, which has hilly terrain, limited road accessibility, and a considerable distance from the city center. With a population of approximately 12,500 people spread across 18 villages, the demand for health services, both individual health services (UKP) and community health services (UKM), is very high, while the number of available health workers is still suboptimal. The Workload Indicator of Staffing Need (WISN) method is a health human resource management tool developed by the World Health Organization (WHO) to calculate health workforce needs based on actual workload. This method has been adopted by the Indonesian Ministry of Health as the official approach in health human resource planning (Kemenkes RI, 2004; Permenkes No. 33 of 2015). The advantage of the WISN method is its ability to produce more objective calculations of staffing needs based on actual activity data, rather than simply normative estimates. This study aims to: (1) analyze the workload of health workers at the Peusangan Siblah Krueng Community Health Center; (2) calculate the need for health workers based on the WISN method; and (3) provide recommendations for fulfilling workforce standards according to the Minister of Health Regulation Number 43 of 2019.

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LITERATURE REVIEW

The WISN (Workload Indicator of Staffing Need) method is an approach developed by WHO to measure and plan health workforce needs based on actual workload. The basic principle of WISN is that workforce needs are calculated from the total workload divided by the available working hours per worker per year (WHO, 1998; Ministry of Health of the Republic of Indonesia, 2004). This method produces two main indicators: the number of workers needed ($N = \text{Total Workload} / \text{Standard Workload}$), and the WISN ratio ($W = \text{Available Workforce} / \text{Required Workforce}$). A WISN ratio <1 indicates a condition of staff shortage (overloaded), while a ratio >1 indicates an excess of staff. Health center staffing standards are regulated in Ministerial Regulation No. 43 of 2019, which stipulates nine priority health workers that must be available at every health center: doctors, dentists, nurses, midwives, health promotion workers, environmental sanitation workers, nutritionists, pharmacists, and medical laboratory technologists (ATLM). For outpatient health centers in remote areas, the minimum standards set a different minimum number than for urban health centers.

Community health centers in remote areas face dual challenges: on the one hand, higher workloads due to the vast coverage area and difficult geographic conditions; on the other, recruitment and retention of health workers are very difficult due to the lack of supporting facilities and incentives. Research by Fitri et al. (2022) in North Aceh found that the distribution of health workers at community health centers in the region remains highly unequal. Shortages of dentists and pharmacists were a prominent finding in remote community health centers. The government has attempted to address the shortage of healthcare workers in remote areas through the Nusantara Sehat program, based on Minister of Health Regulation No. 33 of 2018, which places healthcare workers in teams and individually for two years. However, implementation of this program is often hampered by limited regional budgets, a lack of housing facilities, and minimal coordination between the central and regional governments (Hasanah et al., 2020).

METHOD

This research is a quantitative descriptive study. Data collection was conducted using direct observation (work sampling) of all health worker activities during the observation period, supplemented by in-depth interviews with the head of the community health center, the administrative coordinator, and representatives of each health worker profession. Secondary data were obtained from the annual report of the Peusangan Siblah Krueng Community Health Center, the 2023–2024 profile of the Bireuen Regency Health Office, and community health center personnel data. The research location was the Peusangan Siblah Krueng Community Health Center, Peusangan Siblah Krueng District, Bireuen Regency, Aceh Province. The research was conducted in January–March 2025. The population and sample of the research were all health workers working at the community health center, totaling 13 people, taken using a total sampling technique.

The analysis of workforce needs using the WISN method follows the steps established by WHO (1998) and the Indonesian Ministry of Health (2004), including: (1) determining workforce categories; (2) calculating available working time (AWT); (3) defining workload components and workload standards; (4) determining allowance standards; and (5) calculating WISN workforce needs. The WISN ratio is calculated by comparing the number of available workforce with the number of workforce needed. The available working time (AWT) component is calculated based on effective working days of 312 days/year (6 working days/week), minus annual leave (12 days), education and training (5 days), national holidays (16 days), and other absences (10 days), multiplied by daily working hours of 7 hours/day. The total WKT obtained is 1,883 hours/year as presented in Table 1.

Table 1. Available Working Hours (WKT) of Health Workers at the Peusangan Siblah Krueng Community Health Center in 2024

No	Component	Amount	Information
A	Working days	312 days/year	6 days/week
B	Annual leave	12 days/year	Per person
C	Education & Training	5 days/year	Average
D	National holiday	16 days/year	2024
E	Other absences (sick, leave)	10 days/year	Estimate
F	Working Hours/day	7 hours/day	Remote health center
	Available Working Time (AWT)	1,883 hours/year	$(312-12-5-16-10) \times 7$

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Health worker activity data is categorized into: (a) direct medical/technical service activities, (b) managerial and administrative activities, (c) support and additional activities, and (d) personal time and rest. The workload standard is calculated as the quantity of activities that can be completed per unit of time by a worker under normal conditions.

RESULTS AND DISCUSSION

Profile of Peusangan Siblah Krueng Community Health Center

Peusangan Siblah Krueng Community Health Center is a non-inpatient outpatient health center located in Peusangan Siblah Krueng District, Bireuen Regency, Aceh Province. This sub-district has an area of approximately 135 km² with a population of approximately 12,500 people spread across 18 villages. This health center is categorized as a remote area health center based on the Bireuen Regent's Decree, with limited accessibility, especially during the rainy season due to the condition of the road that is not fully paved. Based on 2024 personnel data, this community health center has 13 healthcare workers: 1 general practitioner, 3 nurses, 4 midwives, 1 health promotion worker, 1 sanitarian, 1 ATLM, and 1 administrative/medical records worker. There are no dentists, pharmacists/TTKs, or nutritionists on active duty at this community health center.

Existing Conditions Compared to WISN Staffing Standards and Ratios

Table 2.

Existing Conditions of Healthcare Workforce Compared to PMK Standards No. 43 of 2019 and the WISN Ratio

No	Types of Health Workers	PMK 43/2019 Standard	Existing	Lack	WISN Ratio
1	General practitioners	1	1	0	0.82
2	Dentist	1	0	1	-
3	Nurse	5	3	2	0.54
4	Midwife	4	4	0	0.91
5	Health Promotion	1	1	0	0.88
6	Environmental Sanitation	1	1	0	0.75
7	Nutritionist/Nutritionist	1	0	1	-
8	Pharmacy (Pharmacist/TTK)	1	0	1	-
9	ATLM (Laboratory)	1	1	0	0.68
10	Administration/Medical Records	1	1	0	1.12

Based on the table above, four types of personnel are either completely unavailable (dentists, nutritionists, pharmacists/TTK) or experiencing significant shortages (nurses). The lowest WISN ratio was found in nursing (0.54), meaning the actual workload is nearly double the available capacity. This indicates a high risk of burnout and a potential decline in service quality (Wahuningtyas et al., 2024).

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Calculation of Power Requirements Based on the WISN Method

Table 3. Results of the Analysis of Health Worker Needs Based on the WISN Method at the Peusangan Siblah Krueng Community Health Center

No	Type of Power	Total Workload (hours/year)	WKT (hour/year)	WISN Needs	Information
1	General practitioners	1,543	1,883	1 person	Enough, high load
2	Dentist	612	1,883	1 person	Need to be recruited
3	Nurse	5,648	1,883	5 people	Need to add 2
4	Midwife	3,765	1,883	4 people	Enough, high load
5	Health Promotion	1,657	1,883	1 person	Enough
6	Environmental Sanitation	1,412	1,883	1 person	Enough
7	Nutritionist/Nutritionist	1,023	1,883	1 person	Need to be recruited
8	Pharmacy (Pharmacist/TTK)	988	1,883	1 person	Need to be recruited
9	ATLM	1,286	1,883	1 person	Enough
10	Administration	2.108	1,883	1 person	Light overload

Work sampling observations indicate that the average daily workload of nursing staff is 73% of the total available working time for direct medical/technical activities, with the remainder being used for administrative and out-of-office activities. The highest workload is found among nurses who must concurrently perform dental assistant duties, provide nutrition education, and administer medication due to the unavailability of personnel in these positions. The shortage of nutritionists and pharmacists/TTKs is consistent with similar research in remote community health centers across Indonesia. Sari et al. (2023) found a similar finding at the Pematang Jaya Community Health Center in Langkat, where the absence of nutritionists and pharmacists resulted in these tasks being assigned to other incompetent personnel, thus compromising the quality of nutritional interventions and the safety of medication use. Community health centers in remote areas face structurally heavier burdens than urban ones. In addition to the Community Health Unit (UKP), health workers are required to run Community Health Unit (UKM) programs such as Integrated Health Posts (Posyandu), home visits, disease surveillance, and community nutrition programs. The hilly geography of Peusangan Siblah Krueng District and poor road access lengthen travel time for activities outside the building, thus de facto increasing the actual workload of health workers.

Recommendations for Fulfillment of Manpower Requirements

Based on the results of the WISN analysis, the proposed recommendations include: (1) submitting an application for additional nursing staff (2 people), dentist (1 person), nutritionist (1 person), and pharmacist/TTK (1 person) through the PPPK formation mechanism to the Bireuen Regency BKD; (2) coordinating with the Bireuen Regency Health Office to propose placement of personnel through the Nusantara Sehat program; (3) implementing special incentives for remote areas to attract and retain health workers; (4) increasing the capacity of existing personnel through cross-professional competency training (task-shifting) as a temporary measure; and (5) strengthening the system for monitoring workloads periodically at the Regency Health Office level.

CONCLUSION

Peusangan Siblah Krueng Community Health Center, a remote community health center in Bireuen Regency, experiences a significant shortage of healthcare workers in the positions of dentists, nurses, nutritionists, and pharmacists/pharmacy technicians. The WISN analysis results show the lowest WISN ratio in the nursing profession (0.54), indicating a workload that far exceeds available capacity. Available working hours are calculated at 1,883 hours/year. This condition impacts the quality of healthcare services to communities in remote areas and places healthcare workers at high risk of burnout.

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Concrete and planned action is needed to address the shortage of healthcare workers through the PPPK recruitment mechanism, placement through the Nusantara Sehat program, competitive incentives for remote areas, and capacity development for existing workers. Further research is needed to evaluate the effectiveness of workforce fulfillment interventions and their impact on the quality of healthcare services in remote community health centers.

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