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## The Analysis of Regional Expenditure on the Provision of Health Workers in the Community Health Center (Puskesmas)

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**Abstract:** Health workers are a key factor in determining the quality of health development. Puskesmas (Community Health Center), as the first line of health care facility (FKTP), has an important role in providing health care services. However, the provision of health workers for Puskesmas is not optimal despite the receiving stimulation received in the form of from financial support and regional authority. This study aimed to present the process of regional expenditure for the provision of health workers and to explore the potential factors in the financing policy in of Puskesmas. The study uses used a qualitative approach with a meta-analysis method based on the results of a literature study. The results of the study indicated 3 contributing factors, including: 1) Disproportionality inaccuracy of the health worker plan curement; 2) The dominance dominance of personnel expenditure; and 3) Refocussed Reallocation of health budget due to the COVID-19 pandemic.

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## I. Introduction

For quite some time, the shortage of health workers has dominantly contributed to causing a healthcare crisis. The aging population, the lack of educational facilities, and poor quality have become crucial issues that are undeniable. Worse, the Coronavirus Disease 2019 (COVID-19) pandemic has stretched the country's healthcare system to its limit. The high rate of transmission cases challenges the health worker in providing treatments, including health coverage and security. From 2020 to 2022, World Health Organization (WHO) estimated 180.000 deaths of health workers due to COVID-19 ([World Health Organization, 2021](#)). This tremendous loss implicates not only reduce of quantities but also the impair the quality of health care. Ultimately, the shortage of health workers affected the achievement of Universal Health Coverage (UHC) and Sustainable Development Goals (SDGs) ([Haakenstad et al., 2022](#)).

To solve this issue, the global strategy on human resources for health care focuses on ensuring the effective use of the available resources. In Indonesia, health care is one of the mandatory sectors which has to be allocated in the budgetary structure. The government allocates 10% as the minimum target of the annual budget to accommodate several programs related to human resources for health care. Furthermore, the government prioritizes the procurement of health workers as the development agenda, which focuses on the availability and distribution approaching the community health development at Puskesmas as the first line of the healthcare facility.

The government allocates the Special Budget Allocation (Dana Alokasi Khusus/DAK) to support health workers in operating the regional health development as part of the national priority agendas. The amount of DAK gradually rises year on year.

However, these stimulations cannot solve the problem in the regions. In 2021, the percentage of health workers' provision at Puskesmas was 49.91% (the national target was 83%) ([Ali et al., 2022](#)), with the central and east regions, including Papua, West Papua, Maluku, North Maluku, Nusa Tenggara Timur, North Sulawesi, and Central Kalimantan, showed the

lowest achievement of the target. There are only three provinces that can accomplish the national target, including DKI Jakarta (105.4%), Bangka Belitung (84.4%), and DI Yogyakarta (89.3%). In terms of the health worker proportion, midwives (40.17%) and nurses (31.5%) made up the highest number of personnel, while medical laboratory technicians (2.86%) and dentists (1.90%) have the lowest number. This discrepancy directly affects the quality of health development in the regions. Based on the achievement of the SPM of Health in 2021, it can be seen that most of the regions with the lowest achievements were the areas with the lowest number of health workers recruitment at Puskesmas. For example, Papua had the lowest percentage (8,6%) of health workers recruited and 4,5% of SPM achievement. This is an early indication that the recruitment of the Puskesmas health workers will affect the quality and quantity of health services to the community.

On the other side, several researchers found that financial contribution is a cause of the health worker's shortages. [Haakenstad et al. \(2022\)](#), through the research on the availability of health workers and its relationship to universal health coverage in 204 countries and territories from 1990 to 2019, argued that the region's low income impacted its performance. [Kabia et al. \(2019\)](#) also stated that the financing reforms for health improve access to health care in Kenyan society from four access barriers that implicate health worker procurement in Kenya, including geographical accessibility, availability, affordability, and acceptability. [Zakumumpa et al. \(2021\)](#) stated that the shortages of health workers were caused by the delay in enrollment onto the government payroll and the lack of private accommodation. According to these findings, the government's financial performance has a crucial impact on the shortage of health workers.

The author also found other study findings that showed Indonesia has proportional provisions in government financing. Since 2004, Indonesian governance has decentralized the fiscal authority to the local governments to determine their programs based on local necessities and objectives. This mechanism allows local governments to prioritize the budgeting allocations for each program required in the local budgetary structure (APBD). At the

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national level, the government allocates the transfer of funds from the national budget (APBN) to support the local government in infrastructure development and operationalizations for Puskesmas (normatively named BOK Puskesmas) to provide incentives and facilities for the health workers.

From these provisions, the studies indicated the ineffectiveness of regional expenditure as an implication of fiscal decentralization and its implementation. Furthermore, the budgetary policy during the COVID-19 pandemic also might affect the regional expenditure in health worker procurement. This study aimed to examine previous findings to review these indications based on the local governance perspective in Indonesia.

## II. Methods

This study uses literature study to obtain secondary data and analyze information and articles through analysis, interpretation, and scientific inquiry (Garrard, 2022). This methodology allows researchers to perform interdisciplinary syntheses of different research findings to comprehend the evidence. The primary data were collected from literature and secondary data from articles, official documents, e-books, and electronic news. The literature databases are the articles published between 2015 and 2022 from Scopus, PubMed, and Google Scholar. The secondary data has been reviewed by the official agencies from the government, universities, and international non-governmental organizations relating to government expenditure for health workers in Indonesia.

Data analysis is conducted in several steps, including collecting data, filtering the relevant data, synthesizing data, and theoretical development (Hardani et al., 2020). Synthesis combines data and information from previous findings and summarizes them into a new descriptive analogy (Schmid et al., 2020). The author made the interpretations based on theoretical foundations and quantitative data related to Puskesmas health workers, the results of previous research, as well as the normative basis based on applicable laws and regulations. This method is fundamental in understanding the

theory used in previous studies and assessing the suitability of the study results with practical changes based on secondary data and information.

The first step was examining and collating the results of previous studies into a matrix to help the author maintain the files and create several thematic sections. This phase allows the author to explain and map the thematic networks (Maulana, 2021). The mapping process was conducted based on case intensity, originality of data and information, and relevance to the research objectives. The next step was classifying each previous research into a table containing: 1) Author; 2) Title; 3) Research Purpose; and 4) Findings (Nakano & Muniz, 2018). The result of this classification was mapped based on an assessment of the extent to which the research supports the interpretation made and needs to be studied further. The last step was to explain each sub-discussion based on the results of the mapping and assessment. This stage allows the author to integrate data and information and obtain a new concept or theory for a more holistic and in-depth understanding.

## III. Results and Discussion

This study used 11 articles that met the research criteria in gaining a wider perspective and information about the factors influencing the regional expenditure for health workers in Indonesia.

Each study was filtered into thematic discussions based on the findings and the practical impacts. The synthesis showed support for the research questions based on the result and data analysis. The secondary data and empirical evidence present how the synthesis was supported by real situations and events that are likely to happen. The synthesis was formed by matching the variables with related theories and the latest data and determining the indicated factors.

In this phase, the thematic sub-discussions were assumed to be these factors that influence the optimization of regional spending in the recruitment of health workers at the Puskesmas, including 1) The disproportionate SDMD planning, 2) The dominance of personnel expenditures, 3)

**Table 1.** The Appendices

No.	Author	Title	Research Purpose	Research Finding
1	<a href="#">Nurlinawati and Putranto (2020)</a>	Faktor-Faktor Terkait Penempatan Tenaga Kesehatan di Fasilitas Pelayanan Kesehatan Tingkat Pertama Daerah Terpencil/Sangat Terpencil	The study aimed to identify the problem associated with the remote location, the adequacy of health workers, and the local government's commitment to the distribution of health workers in remote areas.	<ol style="list-style-type: none"> <li>1. Most Puskesmas were located in areas classified as remote and very remote areas.</li> <li>2. Results of the assessment stated that more than matched the criteria listed in the regulation of remote areas.</li> <li>3. Many Puskesmas in remote/very remote areas experienced a shortage of dentists and pharmacists.</li> <li>4. Regional commitment was quite high, and the regional governments were willing to provide housing for health workers.</li> </ol>
2	<a href="#">Hajriati et al. (2021)</a>	Analisis Sistem Perencanaan Tenaga Kesehatan di Wilayah Kerja Dinas Kesehatan Kabupaten Barru	This study aimed to analyze the health workers (SDMK) at the Puskesmas, especially in the SDMK planning, by estimating the number of SDMK based on their duties and functions.	<ol style="list-style-type: none"> <li>1. The input was not following the provisions of the Minister of Health Regulation Number 33 of 2015, which includes: SDMK recruitment planning, number of SDMK, supporting data, planning, and budgeting methods.</li> <li>2. There was no special team for SDMK planning for all Puskesmas, and the distribution of personnel was not appropriate.</li> <li>3. The SDMK plan could not fulfill the provisions of the legislation.</li> </ol>
3	<a href="#">Hidayanti (2018)</a>	Pemerataan Tenaga Kesehatan di Kabupaten Lamongan	The purpose of this study was to analyze the condition of equitable distribution of health workers in the Lamongan Regency.	The number and types of health workers in the district were adequate but had not been adjusted to the needs based on competence and workload. In addition, Lamongan Regency was still experiencing a shortage of 263 health workers due to budget constraints.
4	<a href="#">Lestari (2016)</a>	Analysis of the Availability of Health workers in The Health Center of Mamuju in West Sulawesi in 2014	The study aimed to obtain in-depth information on the availability of health workers at the Puskesmas to provide optimal health services.	The lack of health workers at the puskesmas dramatically increased the workload of the health workers, which had to work beyond their main tasks, expertise, and educational background.
5	<a href="#">Rehatalanit and Nurwahyuni (2021)</a>	The Analysis of Input in the Process of Implementing UKM UKP at the Primary Health Care of Semarang	This study aimed to analyze the availability of resources in implementing the Community Health Efforts (UKM) and Individual Health Efforts (UKP) at Puskesmas in Semarang City.	<ol style="list-style-type: none"> <li>1. Based on the Puskesmas budget planning document, the UKP budget was higher than the UKM Budget, so it has implications for the achievement of UKP for UKMs, which are still below the target of 30 UKM indicators.</li> <li>2. The health worker's provision had not been following the provisions of the Minister of Health Regulation Number 43 of 2019.</li> </ol>
6	<a href="#">Izhar (2022)</a>	The Optimization of Budget Allocations for the Health Sector in Handling COVID-19 in Pontianak, West Kalimantan Province	This study aimed to determine the state of Pontianak City's budget allocation for the health sector and efforts to overcome the problems faced by the Pontianak City Government during the COVID-19 pandemic.	The allocation of health allocation in Pontianak City had not been carried out optimally because there had not been a significant increase in the budget, which impacted the planning, organizing, implementing, and monitoring processes carried out by the related agencies in Pontianak City.
7	<a href="#">Shofiah et al. (2019)</a>	The Planning of Human Research for Health (SDMK) in the Primary Health Care in Jember District	This study aimed to determine the process of planning promotive and preventive health services following the Regulation of the Minister of Health Number 33 of 2015.	<ol style="list-style-type: none"> <li>1. Several Puskesmas experienced a shortage of promotive and preventive personnel. Nutrition workers were needed in coastal and urban health centers, and sanitation workers were needed in rural and coastal health centers.</li> <li>2. There were differences in workload between rural, coastal, and urban health centers.</li> <li>3. Puskesmas could not recruit health workers due to budget constraints.</li> <li>4. Puskesmas must wait for the decision of the Health Office to fulfill the needs, and often the fulfillment was not suitable for the needs.</li> </ol>
8	<a href="#">Wahyuni and Ardini (2018)</a>	The Impact of Regional Original Income, Capital Expenditures, and Personnel Expenditures on the Level of Regional Financial Independence	This study aimed to examine the effect of local revenue, capital expenditure, and personnel expenditure on regional financial independence in districts/cities in East Java Province.	The local revenue (PAD) positively impacted regional financial independence (High PAD, high regional financial independence). Capital expenditures had no effect on the region's financial independence (the allocation of capital expenditures was not adequately targeted, the quality of public services decreased, and the region's financial independence decreased). Personnel expenditures negatively impacted the region's financial independence (personnel expenditures increased, financial stability decreased, and financial independence decreased).

**Table 1.** The Appendices

No.	Author	Title	Research Purpose	Research Finding
9	<a href="#">Rinaldi et al. (2018)</a>	The Influence of Personnel Spending, Mandatory Spending, and Economic Growth on Fiscal Space for All Provinces in Sumatra	This study aimed to analyze the effect of personnel spending, mandatory spending, and economic growth on fiscal space in all provinces in Sumatra from 2011 to 2015.	The personnel expenditure and economic growth are the most influential variables to fiscal space with a regression coefficient of -0.616776, that if there is a change in the percentage increase in personnel expenditure by 1%, it will cause a change in fiscal space of -0.61%.
10	<a href="#">Lestari (2018)</a>	The Improvement of Service Quality in Primary Health Care through the Management of Human Resources.	The purpose of the study was to determine the various problems of health workers (SDMK) in the Puskesmas, which can affect its service quality, and the institutional effort to improve the quality of health services in Puskesmas.	<ol style="list-style-type: none"> <li>1. The system for planning and distribution of health workers was not integrated.</li> <li>2. Lack of capacity of SDMK concerning the distribution plan of health workers.</li> <li>3. Communication was not effective, which caused differences in understanding, information, and knowledge about the distribution of health workers between planners and health service providers.</li> <li>4. Lack of government fiscal support.</li> <li>5. SDMK Planning was not integrated at various levels of administration in the local government system.</li> <li>6. The allocation of SDMK development and training was not adequate.</li> </ol>
11	<a href="#">Revinadewi et al. (2021)</a>	Budget Allocation Strategy of Bogor City Health Department in the COVID-19 Era	This study aimed to examine the utilization of health allocation at the Regional Department of Health of Bogor City during the COVID-19 pandemic.	Budget expenditure on health-related goods was the highest proportion in handling COVID-19. The utilization of personnel expenditure was focused on financing the incentive for health workers and the task force of the Regional Department of Health of Bogor City and honorarium for the officials. The social safety net was focused on hospital bills for COVID-19 victims and their status as recipients of BPJSs through contribution assistance.

The refocusing of health allocation during the COVID-19 Pandemic.

### A. Inaccurate Health Workers Plan in the Regional Budgetary Structure

There was an indication that the placement of health workers might be one of the factors causing the shortage of health workers at Puskesmas.

The distribution of health workers is based on the health worker plan, which is determined based on the needs and characteristics of each region. This plan shows the type, number, and qualifications of health workers needed for each health service facility. It is hoped that the plan enables the recruitment and distribution of health workers in a measurable and proportional manner.

The calculation of the plan can be based on two methods: institutions and regions. Institution-based methods can be measured based on two approaches: Workload Analysis (ABK) and Minimum Manpower Standards or ratio to population. The ABK approach uses the workload of each person at the managerial and service level. The Minimum Manpower Standards approach is based on the number and capacity of

existing health service facilities in an area. The Ratio approach is intended to calculate the number of health workers based on projected availability, demand, and capacity in an area. Those projections can be utilized to determine the number of health workers in government planning and budgeting.

However, previous studies showed that the distribution of health workers in Puskesmas was not ideal. The emergence of health worker clusters in some areas and the excessive workloads in other areas indicated that the recruitment and distribution of health workers were not following the needs. Most health workers consider the incentives, facilities, and accessibilities to support their performance to choose their area of interest. [Nurlinawati and Putranto \(2020\)](#) find that, notably, the shortages of health workers occurred in remote areas, which are merely unattractive for the majority of health workers, especially dentists, and pharmacists, despite the promise of the local government to provide facilities. Moreover, [Hidayanti \(2018\)](#) found that low budget allocation and disproportional merit adjustment constraints the recruitment and distribution of health workers. The author found four constraining factors for personnel planning.

First, the supporting data as the main input component was not adequately available. The limitations and discrepancies of this data greatly affect the quality of the calculation. The available data cannot meet the criteria for good data (Mekarisce, 2020). Ministerial Regulation Number 33 of 2015 has set the minimum data required for each planning method. Hajriati et al. (2021) stated that the supporting data cannot meet the minimum data requirements. The planners were unaware of any policy changes underlying the personnel planning, namely the Minister of Health Regulation No. 75 of 2014 to No. 43 of 2019 on Puskesmas. In addition, the Puskesmas data were not fully integrated with the government system. Lestari (2018) stated that the data for personnel planning had not been fully integrated with the planning system at various levels of government administration. This causes difficulty in accessing data and information on Puskesmas to be used in preparing regional personnel planning.

Second, the Puskesmas Planning (PTP) had not been effectively implemented. The PTP is a process of preparing an activity plan at Puskesmas for the next year, carried out systematically to address problems or some of the public health problems in their working areas (Saenong et al., 2022). The PTP has four stages: preparation, situation analysis, development of the proposed activity plan, and development of the activity implementation plan. In the field, the PTP was just a formality and only carried out at the end of the year. Hajriati et al. (2021) found that the PTP was only carried out one to two times a year and was not even carried out at all due to COVID-19. The results of PTP, in the form of an Activity Implementation Plan, were administratively used as a reference for regional annual planning and budgeting in the implementation of health affairs in the region annually.

Third, inadequate quality of the planners. The shortage of health workers in Puskesmas negatively impacted the quality of health services. At the planning stage, health workers at Puskesmas often have to do the planning tasks with their main duties concurrently, and as a consequence, their workload increases. In addition, the planning task was not part of their competence and expertise as health workers. This situation was in line with the finding of a

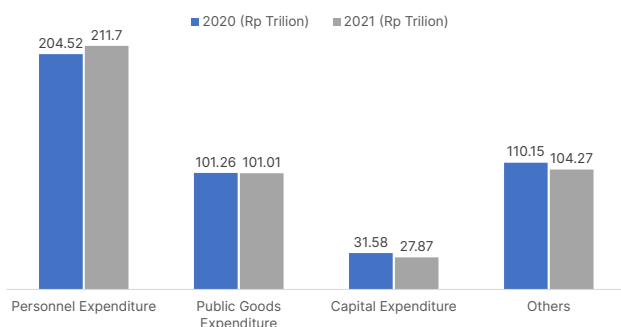
study by Lestari that the lack of health workers at the Puskesmas caused an increase in their workload and it was not following their main tasks, expertise, and educational background (Lestari, 2018; Wahyuni & Ardini, 2018). These constraints will affect the quality of health services at Puskesmas.

## **B. The Dominance of Personnel Expenditure**

Based on these findings, the author assumed that there was a discrepancy between the target, number, and qualifications of health workers determined at the stage of preparing the Health Workers' plan.

Personnel expenditure is one of the operational expenditures in budgeting. It includes salaries and allowances, additional income, and other expenditures for the head of regions (Governor and Regent) or members of the Regional People's Representative Council (DPRD) and ASN. The amount of personnel expenditure is determined by the financial capacity of the local area as well as the consensus of all stakeholders. This means that the fulfillment of ASN for health workers at the Puskesmas is dependent on the amount of the budget allocated in the structure of personnel expenditure. In Indonesia, personnel expenditure is the largest budget allocation in the regional expenditure structure.

Based on the results of the Ministry of Finance's Regional Economic and Fiscal Development Report in 2021, several provinces with the largest proportion of personnel expenditures were Bengkulu (39.77%), Jambi (37.99%), Central Sulawesi (34.30%), Gorontalo (33.81%) and North Sulawesi (33.42%). At the district and municipal scope, personnel expenditure allocations tended to be much higher and even more than half of the total regional budget (APBD). This can be seen in Bengkulu City (54.68%), Cirebon Regency (52.47%), Palangkaraya City (52.42%), Sragen Regency (52.38%), and Binjai City (52.11%) (Bhakti et al., 2021). The dominance of the personnel expenditures contradicted the provision of Law Number 1 of 2022 that personnel expenditures must be below 30%. Most regions, especially regions with low fiscal capacity and a high proportion of personnel expenditure, must



Source: Ministry of Finance (2021)

**Figure 1.** The Regional Expenditure Between 2020 and 2021

employ a fiscal strategy in recruiting new ASN health workers for the Puskesmas.

In addition, the large amount of personnel expenditure became a burden for local governments. This situation made it difficult for regions with limited capacity to recruit health workers, especially for Puskesmas. The significant disparity of personnel expenditures to other sectors in the regional expenditure structure affected the region's fiscal independence. Of course, this gap has hampered the quality of program implementation and the achievement of other regional development targets, such as infrastructure.

Based on the results of previous studies, the dominance of personnel expenditures significantly affected the level of fiscal independence. [Wahyuni and Ardini \(2018\)](#) found that the increase in the proportion of personnel expenditures negatively impacted the region's fiscal independence (the higher the proportion of personnel expenditures, the lower its fiscal stability). Consequently, the decline in fiscal independence made it difficult for the regions to rely on the Regional Original Revenue (PAD) and increase their dependence on transfer funds from the Central Government. The Ministry of Finance data showed that the proportion of transfer of funds from the Central Government in the APBD structure was still high, at 65.38% ([Bhakti et al., 2021](#)).

In addition, the large proportion of personnel expenditure also significantly affected the fiscal space and economic growth. Fiscal space in the budget enables the government to

provide funds for selected purposes without creating problems in the sustainability of the government's financial position ([Rinaldi et al., 2018](#)). Fiscal space is crucial in measuring regional financial flexibility for the entire regional development sector.

Previous studies showed that the high regional fiscal burden on salaries and employee incentives has resulted in reduced budget flexibility for the productive and priority sectors. This also has implications for the achievement of regional development targets in other sectors, which had been agreed upon by all provincial, district, and city-level stakeholders in regional planning documents, namely Regional Government Work Plans (RKPD), Regional Medium-Term Development Plans (RPJMD), and Regional Long-Term Planning (RPJPD).

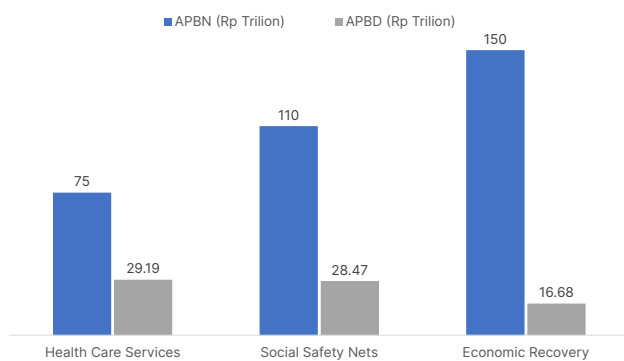
### C. Reallocation of Health Budget Due to the COVID-19 Pandemic

Through this policy, the central and local governments were obligated to increase budget allocations for addressing COVID-19 in promotive, rehabilitative, and preventive allocation. In 2020, the Indonesian Government allocated Rp405.1 trillion through the State Revenue and Expenditure Budget or APBN ([Silalahi & Ginting, 2020](#)). At the regional level, Rp57.57 trillion was refocused to three budget priorities: health care amounting to Rp24.10 trillion (42.60%), managing the economic impact amounting to Rp7.13 trillion (12.6%), and a social safety net amounting to Rp25.34 trillion (44%).

Healthcare budget priority consisted of spending on health-related goods and spending on health workers. Spending on health-related goods included medical devices and medicines, and expenditure on health workers included expenses for health workers and the team of the regional health department.

The social safety net budget priority includes the provision of assistance in the payment of health contributions for people classified as recipients of subsidies.

The economic impacts budget priority was allocated to finance the national economic recovery program on credit and loan restructuring as well as business financing.



Source: *Warta Pemriksa* (2020)

**Figure 2.** Additional Allocation for COVID-19 in 2020

The author assumed that the policy of budget refocusing had affected the government's fiscal capacity to meet the needs of health center personnel, especially in new recruitments. The government's fiscal priorities in handling COVID-19 restricted the government's fiscal space and halted several government programs, including the recruitment of Civil Servant Candidates (CPNS) in 2020. In addition, to avoid the potential increase in the spread of COVID-19 during the selection process, the moratorium was seen as an efficiency measure. For this reason, the reallocated budget optimizes the existing health workers. Personnel expenditure was focused on providing incentives for existing health workers combating COVID-19 and the honorarium for the Task Force Team in the regional health department. Incentives for health workers were provided for ASN, non-ASN, and volunteers assigned to each health service facility.

The moratorium also potentially hampers the regeneration of ASN health workers, especially in Puskesmas located in remote, underdeveloped, border, and island areas or DTPK. This regeneration is crucial to replace the retired or transferred health workers through redistribution and new recruitments. Looking at the trend in the field, the number of transfers for ASN health workers is still quite high. The difficulty of accessing services, the lack of facilities and infrastructure to support health services, and the lack of incentives have made Puskesmas in the DTPK areas unattractive for newcomers (Yulianti et al., 2022). Health workers in the DTPK area, mostly located in the eastern

region, was low. Of course, the quality and quantity of these health workers will greatly affect the quality of health services at the Puskesmas.

## IV. Conclusion

The results of the study showed three factors affecting the suboptimal regional expenditure in meeting the needs of health workers at the Puskesmas level.

First, the human resources plan or SDM was not suitable. This was due to the unavailability of supporting data, the ineffectiveness of the Puskesmas planning or PTP level, and the unavailability of health planner resources.

Second, the amount of personnel expenditure was still high. The Government's policy of limiting personnel expenditure to below 30% restricted the Regional Government from recruiting new ASN for health workers. In addition, the higher personnel expenditure limited the fiscal space for other expenditures, such as infrastructure and goods and services. This ultimately reduced the amount of spending on the productive sector, which can reduce regional fiscal independence.

Third, the health budget was reallocated to fight the COVID-19 pandemic. The additional allocation on health, particularly for health personnel, was redirected to optimizing the existing ASN for health workers. This effectively put a moratorium on the recruitment of Civil Servants Candidates (CPNS) in 2020 and could potentially hamper the regeneration of ASN health workers in the regions.

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