

RETENTION OF REMOTE PUBLIC HEALTH CENTER DOCTOR IN NORTH KONAWA DISTRICT

Retensi Dokter Puskesmas Sangat Terpencil di Kabupaten Konawe Utara

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Abstract

Background: Remote public health centers (PHCs) have the highest proportion of PHCs without doctors, with Southeast Sulawesi Province ranking fifth in this regard. PHCs serve as the main gateway to health services in rural and remote areas. Despite its high fiscal capacity and provision of support for medical education and incentives, North Konawe District has not succeeded in retaining doctors in its public health centers.

Aims: This study aims to analyze factors that influence the retention of doctors in remote PHCs in the North Konawe District.

Methods: This qualitative study employed a case study design, involving in-depth interviews with 14 informants and a review of six documents.

Results: Factors affecting doctor retention in the North Konawe District include individual factors, work factors, living environment factors, and health system factors.

Conclusion: Doctors in remote PHCs in North Konawe District are Ministry of Health placement doctors working on temporary contracts. Strategies to improve the retention of doctors in remote PHCs include improving living conditions in remote areas, supporting job opportunities for doctors' spouses, recruiting doctors early in their careers, implementing government disincentive policies, building PHCs with official housing, requiring mandatory service for recipients of medical education scholarships, and developing doctor attendance information system.

Keywords: Doctor, PHC, remote area, retention.

Abstrak

Latar Belakang: Puskesmas sangat terpencil merupakan puskesmas tanpa dokter dengan proporsi tertinggi, Provinsi Sulawesi Tenggara merupakan tertinggi kelima. Puskesmas merupakan pintu gerbang utama pelayanan kesehatan dasar di daerah pedesaan dan terpencil. Kabupaten Konawe Utara Provinsi Sulawesi Tenggara merupakan daerah dengan kapasitas fiskal tinggi, memberikan bantuan biaya pendidikan dokter serta menyediakan insentif dokter tetapi dokter tidak retensi bekerja di puskesmas di kabupaten ini. Meskipun merupakan daerah dengan kapasitas fiskal yang tinggi serta penyediaan bantuan pendidikan dan insentif bagi dokter, Kabupaten Konawe Utara belum berhasil mempertahankan tenaga dokter di puskesmas.

Tujuan: Penelitian ini bertujuan menganalisis faktor-faktor yang mempengaruhi retensi dokter di puskesmas sangat terpencil di Kabupaten Konawe Utara.

Metode: Penelitian ini merupakan penelitian kualitatif desain studi kasus dengan wawancara mendalam 14 orang informan (Puskesmas, Dinkes Kabupaten, Dinkes Provinsi, Kemenkes) dan menelaah enam dokumen.

Hasil: Faktor yang mempengaruhi retensi dokter di Kabupaten Konawe Utara adalah faktor individu, faktor pekerjaan, faktor lingkungan tempat tinggal dan faktor sistem kesehatan.

Kesimpulan: Dokter yang retensi di puskesmas sangat terpencil Kabupaten Konawe Utara merupakan dokter penempatan Kementerian Kesehatan dengan kontrak sementara. Strategi meningkatkan retensi dokter di puskesmas kawasan sangat terpencil dengan meningkatkan kondisi kehidupan di daerah terpencil, peluang pekerjaan pasangan dokter, merekrut dokter di awal karir, kebijakan disinsentif dari pemerintah, membangun puskesmas dengan fasilitas rumah dinas, wajib pengabdian program beasiswa pendidikan dokter dan mengembangkan sistem informasi kehadiran dokter.

Kata kunci: Dokter, kawasan sangat terpencil, puskesmas, retensi.



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Introduction

The SDGs target aim is to strengthen health systems to achieve universal health coverage, ensuring that everyone receives the health services they need (Lee and Kim, 2019). WHO has formulated a global health system framework with six building blocks to strengthen health systems. One of the components of this framework is the health workforces (Manyazewal, 2017). Indonesia's health transformation includes transforming health human resources in order to equalize the distribution of the health workforce across the country, including in DTPK (Ministry of Health, 2025). The shortage of health workforces remains a challenge in many countries, particularly in rural and remote areas. Australia conducts rural clinical placements for undergraduate medical students, which help improve the distribution of medical personnel (Campbell *et al.*, 2019). In Thailand, providing rural exposure during education for of doctors from rural backgrounds has been shown to increase their retention in these areas (Boonluksiri *et al.*, 2018). The government implemented various programs address the shortage of health workforces, including doctors (Flores *et al.*, 2021; Walton-Roberts *et al.*, 2017; Witthayapipopsakul *et al.*, 2019).

The adequacy of health workforces is the fundamental pillar of health services delivery. Law No. 17 of 2023 mandates that both the Central Government and Regional Governments must fulfill the needs for medical and health personnel in terms of quantity, type, competence, and distribution to ensure the sustainability of health development. The RPJMN 2020-2024 targets zero percent of PHCs without doctors. The proportion of PHCs without doctors was 6.91% in 2020, which improved to 4.91% in 2021, and further decreased to 3.99% in 2022 (Sekretariat Direktorat Jenderal Tenaga Kesehatan, 2023). These data indicate that recruiting doctors for PHCs has effectively reduced the number of PHCs without doctors. However, significant disparities persist in occupancy rates between remote PHCs and those in other regions (Sekretariat

Direktorat Jenderal Tenaga Kesehatan, 2023).

Optimizing the continuity is critical, given that half of the global population currently resides in rural areas, and by 2050, it is projected that approximately one in three people will live in such areas (WHO, 2021). In Indonesia, only about 10% of doctors practices in rural areas, despite approximately 45% of population living in these communities (Agustina *et al.*, 2019). Health service facilities in remote areas face limited accessibility due to challenging geographical conditions, inadequate transportation infrastructure, difficulties in meeting basic living needs, and poor security conditions (Su'udi *et al.*, 2022). PHC health serve as a strategic point for delivering health services to these communities.

Southeast Sulawesi Province was the fifth-highest province for PHCs without doctors in Indonesia in 2022, even though there was a medical faculty in the province. Based on SISDMK data in 2022, North Konawe District had five PHCs without doctors, two of which were remote PHCs. In 2022, North Konawe District was a region with very high fiscal capacity, providing education tuition for students from the district, including for medicine education, and providing incentives for PHC doctors. However, doctors were not retained to work in remote PHCs. Data from SISDMK shows that by 2020, no remote had a doctor, and by 2023, all remote PHCs were filled by doctors 2023. This study aims to analyze factors that influence the retention of remote PHC doctors in North Konawe District so that it can be an input in the preparation of national and local government policies in supporting the retention of remote PHC doctors.

Method

This research is qualitative research with a case study design that allows researchers to collect detailed and complete information to explore the dimensions of a case, focus on events that do occur, limited by space and time, and examine the interrelationships with one another (Martha and Kresno, 2017). The

research was conducted from December 2023 to April 2024 in North Konawe District in Southeast Sulawesi Province, Kendari, and Jakarta. The selection of informants was based on purposive sampling and snowball sampling with reference to appropriateness and adequacy. There were 14 informants from remote PHCs in North Konawe District, North Konawe District Health Office, Southeast Sulawesi Provincial Health Office, and the Directorate General of Health Workforces of the Ministry of Health. Primary data were collected through in-depth interviews using a structured list of questions (Wibowo, 2020). Secondary data were collected from selected informants. Researchers conducted data triangulation through source triangulation and method triangulation to ensure the validity of the research findings (Wibowo, 2020). The data analysis process involved transcription, reading all data, coding, themes analysis within each case and cross-case, and data interpretation (Creswell, 2009).

Result and Discussion

Individual Factors

In-depth interviews with doctors and the head of the PHC remote areas in Konawe Utara District identified individual factors that influence the retention of remote PHC doctors, as shown in Table 1. This study found that doctors working in remote PHCs live in inadequate living conditions because, for housing, they share a room with several health workforces. This finding aligns with research in India, which reported insufficient housing for rural health workers (Rajbangshi *et al.*, 2017). Previous research found that local governments have difficulty fulfilling their obligation to provide housing for health workforces. (Tambun *et al.*, 2024). The difficulty in providing housing in remote areas is due to the limited budget and the limited ability of local governments to apply for the Special Allocation Fund (DAK) (Noya *et al.*, 2023).

This study found that doctors experienced limitations of daily living facilities due to limited water and electricity

due to power outages for several hours daily. These findings are consistent with previous studies, which found that doctors working in rural areas face many difficulties in daily life (Hou *et al.*, 2016; Mohammadiaghdam *et al.*, 2020). Doctors in this study were able to retain working in remote PHCs due to their ability to adapt to these conditions (Handoyo *et al.*, 2018).

The remote area PHCs doctors from the findings of this study are doctors from *Penugasan Khusus* (Special Assignment) the Ministry of Health's Programme. This program does not have guidelines for the standard of doctors' housing. Improving living conditions in rural and remote areas requires cross-sectoral collaboration political, institutional, and financial means. Stakeholder collaboration through the Village Fund, Balancing Fund through the Special Allocation Fund (Noya *et al.*, 2023). The Village Fund based on the Regulation of the Minister of Villages, Development of Disadvantaged Regions, and Transmigration can be used to improve access to health services such as provision of clean water in villages and the development of transport facilities by building and maintaining roads.

Work Factors

Work-related factors influencing the retention of remote PHC doctors in North Konawe District are presented in Table 2. These results are based on in-depth interviews with remote PHCs, district health office, provincial health office, and the Ministry of Health.

A document review by looking at doctors' training certificates found that the training frequency of doctors in remote area PHCs varies because one doctor has never attended the training. This study found no specialized training or seminars for doctors in remote areas because it was done without considering increasing the capacity of remote area PHCs. Educational development is required for doctors to provide safe and effective care in rural and remote communities (Abelsen *et al.*, 2020). Previous research found that training affects the retention of doctors in rural areas (Honda *et al.*, 2019).

Table 1. Individual Factors

Individual Factors	PHC	
	Tapunggaya	Langgikima Pesisir
Personal life	Inadequate housing; limited water and electricity; unstable phone signal; weak internet signal; can access the city once a month	Inadequate housing; limited water and electricity; unstable phone signal; weak internet signal; can access the city once a month
Character	Adventurous character	Adventurous character
Family	Unmarried doctors living separately with their parents	Married doctor living separately from spouse, but living with children not yet of school age
Background	Urban origin has never been exposed to the countryside	Urban origin has never been exposed to the countryside
Demographics	Female, young (under 35 years old), married doctor with a husband who is a local resident	Female, young (under 35 years old), married doctor with a husband who is a local resident

Table 2. Works Factors

Work Factors	PHC	
	Tapunggaya	Langgikima Pesisir
Professional and career development	There is no special training for doctors at remote PHCs. There are no career development offers for continuing education Receive training quite often.	There is no special training for doctors at remote PHCs. There are no career development offers for continuing education Never attended training.
Physical working conditions	Equipment is incomplete, medicine is lacking, clean water is available, ambulances are available to refer patients, and buildings are adequate.	Equipment is incomplete, medicine is lacking, clean water is available, ambulances are available to refer patients, and buildings are adequate.
Coworker relationship	Being placed in a team supports a good work culture.	Good relations with superiors and colleague
Incentives	Incentives from the Ministry of Health are received according the work contract agreement, regular, and the amount of incentives received is adequate. No local government incentives.	Incentives from the Ministry of Health are received according the work contract agreement, regular, and the amount of incentives received is adequate. No local government incentives.
Employment	Non-ASNs, do not want register in CASN selection during the work contract. In the work contract the doctor cannot transfer between PHCs.	Non-ASNs, do not want register in CASN selection during the work contract. In the work contract the doctor cannot transfer between PHCs.
Work support network	No need for a mentor Can make patient referrals	Have utilized paid WhatsApp groups for patient consultations Can make patient referrals

A review of North Konawe Regent Regulation No. 97 of 2022, concerning Guidelines for the Implementation of the Regional Budget of North Konawe District for Fiscal Year 2023, found that education tuition fee is provided to ASN and the community, health workforce incentives are only provided to ASN doctors. This study found that there is no offer of education tuition fee from the district government, but the Ministry of Health provides specialist education tuition fees for doctors after *Penugasan Khusus* Programme. The opportunity to obtain specialized education fees makes doctors satisfied working in remote areas (Mohammadiaghdam *et al.*, 2020). The facilitation of continuing education is one of the interventions that can improve retention (WHO, 2021).

A review was also conducted by the Minister of Health Regulation No. 33/2018 on *Penugasan Khusus* Programme requiring district governments to provide regional incentives for health workforces deployed but the North Konawe District Government did not provide additional incentives for doctors. Previous research found that doctors in rural and remote areas argued that they deserve higher financial incentives due to higher workloads and missed opportunities for additional income (Darkwa *et al.*, 2015). Research in Vietnam

found that the appointment of rural health workforces who have worked more than three years in civil service with greater incentives can improve retention (Zhu *et al.*, 2019).

This study found that physical working conditions with limited drugs and equipment did not affect doctor retention because the doctors had tried to treat patients with limitations. If patients could not be treated at the PHC, doctors could still refer patients to the hospital. This contrasts with previous research which found that doctors in rural and remote areas face constraints in referring patients, leading to decreased motivation of doctors to work in rural and remote areas (Noya *et al.*, 2022). This study also found that doctors who are placed in teams can support doctor retention because it allows doctors to maintain work discipline. This aligns with previous research showing that a team of professionals socializing and learning together supports retention in rural and remote despite the high demands and frustration caused by the inability to change the system (Abelsen *et al.*, 2020).

Environmental Factors

The results of in-depth interviews with doctors and heads of remote PHCs are presented in Table 3:

Table 3. Environmental Factors

Environmental Factors	PHC	
	Tapunggaya	Langgikima Pesisir
Geographical conditions	Located on land that is not separated from the province, lives close to a PHC, has public transport once a day to the district and province or private motorbikes, road conditions are damaged making it difficult to pass after rain. Geographical conditions and access limitations can be adapted.	Located on land that is not separated from the province, lives close to a PHC, has public transport once a day to the district and province or private motorbikes, road conditions are damaged making it difficult to pass after rain. Geographical conditions and access limitations can be adapted.
Community support	Doctors feel their presence is more useful when they are in remote areas Security conditions are conducive	The community responds well to the presence of doctors Security conditions are conducive
Cultural or customs	No communication barriers	No communication barriers

The in-depth interviews for geographical conditions in remote PHCs are as follows:

"When it rains, the road is slippery. After the rain, it's really sticky, and you can't go anywhere, so when the schedule goes to the village, I wait for it to dry first; if not, wait for the next day, but even though the place is isolated when it rains, it doesn't get any worse because the electricity is still there even though it sometimes power outages, the water is still available, you don't have to wait for it to rain ..." (I-01)

This study found that the geographical conditions of remote areas of PHC are difficult to access during the rainy season, limiting the mobilization of doctors in and out of the PHC areas. Previous studies have also found that the geographical conditions and infrastructure of PHC areas in remote areas are poor, making them difficult to access (Su'udi *et al.*, 2022; Tambun *et al.*, 2024). Regulation of the Minister of Villages, Development of Disadvantaged Regions and Transmigration No. 7 of 2023 states that road construction in rural areas supports access to basic services can be supported through the Village Fund.

Health System Factors

The results of in-depth interviews with district health offices, provincial health offices, and the Ministry of Health. The district government recruited doctors through PPPK, however, there were no applicants in 2023. Additionally, contract doctors in remote areas PHC resigned, and the government did not recommended mutations to urban PHCs. The provincial government does not have a policy to fulfill PHC doctors. The Ministry of Health distributes doctors, including to remote areas, under the Penugasan Khusus Programme. However, the presence of non-ASN doctors is not recorded in the district government information system. The district government's policy of providing tuition fee for medical education is not intended to directly fulfill the need for

doctors in North Konawe District. The number of doctors graduating is considered sufficient to fill the vacancies.

This study found that to meet the need for doctors, the district government recruited doctors, including doctors in remote areas, through PPPK recruitment, but no one was interested because during the contract period, they could not continue their education. Document analysis of Konawe Utara District's PPPK recruitment for 2023 found 11 formations for PHC doctors. The Konawe Utara District PPPK recruitment lists the PPPK income range according to the professional education level. But, it does not include doctor incentives in the PPPK PHCs doctor's income. Previous research found that recruitment of PHC health workforces was carried out through civil servants and non-civil servants (central and regional contracts, Penugasan Khusus for remote areas, contract workforces of the Regional Public Service Agency (BLUD)), which then after 2014 through Law Number 5 of 2014 with the recruitment of civil servants and PPPK (Nugraha *et al.*, 2020). PPPK doctor formations were not filled due to formations for remote areas (Amin, 2024). Maldistribution of health workforces causes rural, remote areas always lack health workforces (WHO, 2021).

This study found that the Penugasan Khusus Programme the Ministry of Health has a doctor placement program for remote PHCs, which provides incentives, voluntary and temporary. Previous research found that 89.1% of PHCs fulfilled their commitment to providing housing (Nurlinawati and Putranto, 2020). WHO recommends providing interconnected, combined, and local interventions related to education, regulation, incentives, and support from employers, governments, health workforce associations, international stakeholders, and other stakeholders to improve recruitment and retention in rural and remote areas (WHO, 2021).

The information system used to monitor the presence of doctors in this study is not optimal because it is still manual. Previous research in Bangladesh found that the lack of supervision of doctor attendance can lead to high doctor absence

rates in rural areas (Sadiq and Ahmed, 2020). Supervision of doctors in rural Bangladesh undergoing compulsory service with information system technology using biometric fingerprinting, online systems, and random monitoring under the supervision of sub-district and district-level bureaucrats can support retention in rural areas (Joarder *et al.*, 2018). This study found that the presence of doctors is recorded in SISDMK, which the Ministry of Health uses for mapping health workforce planning, while provincial health offices and district health offices use it for recruitment planning.

This study found that the Affirmation Programme of the Ministry of Health provides tuition fees for medical school to DTPK students who completed their education and will be required mandatory service (Ministry of Health, 2023). This is in line with previous research that specialized rural pipeline programs support applicants from rural backgrounds being accepted into medical education (Beck Dallaghan *et al.*, 2021). Physicians who are placed in rural areas and have a rural background may increase the likelihood of subsequently working in rural areas (George *et al.*, 2019).

Study Limitations

The limitation of this study is that one PHC was not involved as an informant due to access difficulties. The researcher's work background could potentially bias the interview results, but triangulation of sources and methods was conducted to validate the findings of this study. This study did not involve district government in the fields of education and did not involve communities in remote PHC areas.

Conclusion

The retention of doctors in remote areas PHC is a systematic, interconnected effort aimed at encouraging doctor to continue working in these location. Factors affecting retention of doctors at remote area PHCs in North Konawe District include individual factors that support retention: having an adventurous character; being able to bring children who are not yet of school age; being able to communicate with

family via mobile phones; and having access the city at least once a month. Individual factors hinder retention: inadequate housing; limited access to water and electricity; and living separately from spouses for extended periods. Individual factors that do not affect retention: history of exposure to rural areas and female gender. Regarding job-related factors: factor that promote retention include good relationships with colleagues and superiors, having supportive team, and receiving very adequate financial incentive; factors that led to non-retention include long working hours; factors that do not influence retention include opportunities for further education, chances to become permanent employees, and absence of mentors. As for living environment factors, those that support retention are adaptable geographical conditions, positive community responses, and conducive security conditions. Regarding health system: factors that directly influence doctor retention include doctor distribution related to Penugasan Khusus Programme; factors that indirectly influence retention include information systems related to SISDMK; factors that do not influence retention include information systems related to doctor attendance, coordination between the education and health sectors, and rural-oriented higher education.

The North Konawe District Government needs to formulate a policies that provide employment opportunities for the spouses of doctor working in remote area PHCs, including the salary and incentive components as outlined in the PPPK recruitment announcement. Additionally, the government should develop a doctor attendance information system and offer tuition fee support for medical school with mandatory service commitment at PHCs. The Southeast Sulawesi Provincial Health Office developed a training curriculum to support doctors in delivering health services in remote PHCs. The Ministry of Health should map the distribution of doctors at PHCs in remote areas PHCs across districts and cities based on maps of regional fiscal capacity maps and formulate national policies that support the retention of doctors in these

area; Furthermore, it should advocate for the central government to assist district and city governments that have been unable to fulfill doctors staffing at remote PHCs due to limited regional fiscal capacity. Policies should also be made to build PHCs with official housing in remote areas. Lastly, an Affirmation Programme should be implemented to recruit students from rural backgrounds through special pathways that prepare them to enter the medical education and serve their communities.

Abbreviations

ASN: *Aparatur Sipil Negara* (civil servant); DTPK: *Daerah Tertinggal, Perbatasan dan Kepulauan* (remote area); PHC: Public Health Center; PPPK: *Pegawai Pemerintah dengan Perjanjian Kerja* (Government Employees with Work Agreement); RPJMN: *Rencana Pembangunan Jangka Menengah Nasional* (National Medium-Term Development Plan); SDG's: *Sustainable Development Goals*; SISDMK: *Sistem Informasi Sumber Daya Manusia Kesehatan* (Health Human Resources Information System); WHO: World Health Organization.

Ethics Approval and Consent Participant

This research has received approval from the Ethics Committee for Public Health Research and Service, Faculty of Public Health, University of Indonesia with Ethical Approval Letter Number: Ket807/UN2.F10.D11/PPM.00.02/2023

Conflict of Interest

The authors declare that there is no conflict of interest in this study.

Availability of Data and Materials

Not applicable.

Authors' Contribution

SWKT and MB conceptualized the study; SWKT handled the manuscript and data collection, and MB reviewed and improved.

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