

INSPECTING PRIMARY HEALTHCARE CENTERS IN REMOTE AREAS: FACILITIES, ACTIVITIES, AND FINANCES

Menilik Puskesmas di Daerah Tertinggal: Kepatutan, Kegiatan, dan Keuangan

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ABSTRACT

Background: Progress towards health-for-all must be supported by quality health facilities that are available to everyone. However, healthcare facilities in remote and underdeveloped areas, borderlands, and outlying islands, or *daerah terpencil, tertinggal, perbatasan dan kepulauan* (DTPK), face constraints regarding access to health coverage.

Aim: This study aims to provide a comprehensive picture of the readiness of primary healthcare centers or *puskesmas* as the main provider of primary health services located in remote areas.

Methods: Observations were made within 18 primary healthcare centers in locations that had been identified as remote and underdeveloped areas, borderlands, and outlying islands in three provinces: Bengkulu, Nusa Tenggara Timur (East Nusa Tenggara), and South Sulawesi.

Results: The findings revealed that many facilities in primary healthcare centers remain insufficient. In particular, roads to primary healthcare centers are in poor physical condition, operational hours are too short, and doctors and laboratory technicians are unavailable. However, primary healthcare centers have managed to conduct many indoor and outdoor activities such as health education classes and the detection of priority diseases within the community. Regarding the finances of primary healthcare centers, they largely depend on public funding to support their increasing expenses to provide health services, pay worker salaries, and conduct indoor and outdoor activities.

Conclusions: Overall, some constraints faced by the primary healthcare centers in DTPK include difficult access to facilities and temporary health personnel. This information provides valuable input to policymakers in building health infrastructure and human resources for health in DTPK.

Keywords: remote area, human resources for health, primary healthcare center

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INTRODUCTION

In Indonesia, a primary healthcare center, or *puskesmas*, is the first-level (primary) health facility under the district health office that is responsible for the health of the people living in its jurisdiction. As a primary health facility, a primary healthcare center is where patients and health personnel often meet for the first time and interact with each other to consult about health problems, check vital health conditions, receive medications, and obtain useful health information, health-enhancing advice, and referrals to complementary health services. Primary healthcare centers also act as gatekeepers to higher-level facilities such as hospitals and specialized clinics. In 2017, 9,825 primary healthcare centers operated throughout the country (Kurniawan, Yudianto, Hardhana, and Siswanti, 2018), with at least one primary healthcare center in every district.

In this study, the conditions of primary healthcare centers in remote areas are analyzed using several pertinent questions. Are primary healthcare centers in these areas sufficiently equipped to meet the primary care needs of the

people living in their territory? Have they managed to reach everyone through their outdoor activities? Alternatively, do they make any effort at all to engage with the local community? What has been the status of their finances over the past few months? Has there been any significant increase in primary healthcare centers' revenues or expenses? The answers to these questions can serve as valuable inputs to policymakers to enable the provisioning of high-quality primary healthcare, especially in remote areas, where the private health sector tends to be unprofitable, and the health of residents relies heavily on the readiness of the public sector.

There is a dearth of published, scientific literature on primary healthcare centers. The few existing studies are limited in scope, only sampling patients from one-to-three primary healthcare centers to investigate patient satisfaction regarding the services they received. Utama, Lestari, and Ikmaluhakim (2017) conducted a study in a primary healthcare center in Ngagel Rejo, Surabaya that could accommodate up to 100 patients a day. Their study found patient satisfaction to be quite low regarding the cleanliness and comfort of the waiting

room and the responsiveness of the staff at registration desks. At other primary healthcare centers, Biyanda et al. (2017) found that patients were quite satisfied with facility conditions, but were dissatisfied with how doctors addressed their health complaints, judging them as lacking compassion, empathy, accuracy, and attention to detail. An important consideration is that if a patient has a bad experience in primary healthcare centers, it may discourage repeat visits (Afifah, 2017). Apriyanto, Kuntjoro, and Lazuardi (2013) interviewed 111 patients in three primary healthcare centers in Singkawang, West Kalimantan, and found that patients awarded a score of approximately 2.5 (from a 5-point scale) for every dimension of services they required. These dimensions ranged from the quality of the health services in general to the punctuality of operating hours. Different from the three studies noted above, Djauhari (2010) investigated important inputs that contributed to the provisioning of high-quality services in primary healthcare centers. The author found financial input as being the most critical, followed by the structure of bureaucracy, the availability of health resources, and finally, communication. There are additional student dissertations and articles on specific programs in primary healthcare centers, but these are not published in scholarly journals (see, e.g., Vondewi, 2010; Putra, 2012). To the best of our knowledge, there is to date no literature on primary healthcare centers in Indonesian remote areas.

Three studies that closely match ours are those of Sagala, Trisnantoro, and Padmawati (2016), Husain, (2006), and Suharmiati, Handayani, and Kristiana (2012). Sagala, Trisnantoro, and Padmawati inspected the provisioning of health services at Kepulauan Anambas, one of the so-called remote and underdeveloped areas, borderland, and outlying islands, or *daerah terpencil, tertinggal, perbatasan dan kepulauan* (DTPK) in Riau province; however, their research focused on a hospital context. Husain (2006) used data from primary healthcare centers and auxiliary primary healthcare centers, or *puskesmas pembantu* (*pustu*), in a survey of Indonesian family life, or *Survei Aspek Kehidupan Keluarga Indonesia* (*sakerti*), fielded in 13 provinces. Comparing conditions of primary healthcare centers in rural and urban areas, the study found that doctor availability in urban primary healthcare centers was much higher than that in their rural counterparts, particularly in Java, Bali, and the Sumatra islands. However, the availability of paramedics in rural primary healthcare centers was found to be quite good. While this study highlighted the geographical differences in human resources for health, it was not comprehensive. Furthermore, the *Sakerti* data used in the study were quite old, having been collated almost two decades ago.

More recently, Suharmiati, Handayani, and Kristiana (2012), and Suharmiati, Laksono, and Astuti (2013) collected data from a primary healthcare center in Sajingan Besar, a remote area in West Kalimantan province, to investigate factors that influence access to facilities. They found a severe lack in the availability of human health resources, indicating that primary healthcare centers were

unable to conduct a range of activities, particularly outdoor events. Medical equipment, medical supplies, and drug supplies were also restricted. In terms of patient access to primary healthcare centers, they found transportation to be the biggest hurdle. However, the findings of this study were only based on the experience of one primary healthcare center. It would be interesting to inspect several centers in remote areas and include many more dimensions of service provisioning in addition to human resources for health and access barriers for patients.

In the current study, the researchers visited 18 primary healthcare centers in national health target locations included into the *Nusantara Sehat* (NS) program, initiated by the Ministry of Health Indonesia. A team of health personnel comprising doctors, dentists, nurses, public health experts, environmental health experts, laboratory technicians, nutritionists, and pharmacists went to areas deemed as remote and underdeveloped, borderlands, and outlying islands that lacked human resources for health. At these facilities, the researchers interviewed the managers of these primary healthcare centers to obtain information about their facility conditions, activities inside and outside of the centers, and any changes to their finances in recent months.

Our inspection found that access to primary care in remote and underdeveloped areas, borderlands, and outlying islands remain challenging, with roads to primary healthcare centers often in poor physical condition (e.g., many potholes, rocky, and not asphalted). Furthermore, healthcare centers lacked permanent doctors and laboratory facilities (or laboratory technicians) to conduct blood tests. In terms of activities conducted by primary healthcare centers, the current study found that most had been quite active in delivering outdoor programs, engaging in preventive and promotive activities such as detecting cases of priority diseases (e.g., hypertension, diarrhea, and malnourishment among young children) in the community and presenting health education classes. Primary healthcare centers also initiated and monthly monitored integrated health service posts (*Posyandu*), integrated village noncommunicable disease (NCD) prevention posts for the elderly (*Posbindu Lanjut Usia/Lansia*), and integrated village NCD prevention posts for non-communicable diseases (*Posbindu PTM/Penyakit Tidak Menular*). Finally, concerning financial conditions, the current study found that both income and expenses had increased, and very few healthcare centers spent money on the refurbishment of facilities.

METHODS

The current research is a qualitative study that was conducted using in-depth interviews at the primary healthcare center level. Healthcare centers were chosen based on the results of a purposive sampling technique. The researchers developed the survey instruments (in the Indonesian language), which included activities in primary healthcare centers, patient volumes, the available facilities of healthcare centers, of the required medical equipment and medical supplies, human resources for health, indoor and outdoor activities, and changes to centers'

revenues and expenses. The aim of gathering this information was to provide knowledge on three dimensions of primary healthcare centers: the level (or quality) of facilities inside and in the vicinity of the primary healthcare center building, currently running

activities, and changes in finances in recent months. The researchers pilot-tested the survey instrument on the personnel of several primary healthcare centers in a DTPK in Lampung province (nearest to Jakarta) and revised the survey instrument accordingly.

Table 1. The locations and participants of sampled primary healthcare centers.

Province	District	Area Size (km ²)	#Villages	# People	Informants
Bengkulu	Sekayun	79.00	11	6,968	Head of administration
	Ketenong	63.09	8	4,840	Head of the primary healthcare center
	Tanjung Harapan	24.30	10	11,451	Head of the primary healthcare center
	Pagar Jati	70.00	10	5,892	Acting head of primary healthcare center
	Taba Teret	96.00	7	5,696	Head of administration
	Taba Lagan	50.00	9	7,029	Head of administration
South Sulawesi	Kondodewata	196.74	17	30,691	Head midwife
	Rampi	156.56	7	3,134	Head of the primary healthcare center
	Latimojong	NA	12	26,819	Head of administration
	Walenrang Barat	NA	6	10,716	Head of the primary healthcare center
	Bittuang	134.47	13	19,550	Head of the primary healthcare center
	Rano	166.02	6	6,119	General practitioner
East Nusa Tenggara (NTT)	Ngalupulo	106.47	13	13,169	Head of the primary healthcare center
	Watuneso	46.79	12	8,613	Head of the primary healthcare center
	Iteng	138.00	10	16,671	Head of administration
	Beamese	226.10	7	9,681	Acting head of primary healthcare center
	Runggu	30.44	8	8,713	Head of operation
Pacar	63.50	12	14,066	Head of the primary healthcare center	

With their available budget, the researchers chose DTPKs in three provinces, which included West to East Indonesia: Bengkulu, South Sulawesi, and East Nusa Tenggara. It is well-documented that health conditions and health supply levels vary significantly across Indonesian regions, with East Indonesia faring the worst compared to other regions (Kurniawan, Yudianto, Hardhana, and Siswanti, 2018; Worldbank, 2018). The data collection received ethical approval from Gajah Mada University (REF No. KE/FK/0510/EC/2018) and an implementation permit from the Vice President's Office of the Executive Secretary of the National Team for the Acceleration of Poverty Reduction.

In each province, six DTPK districts were visited, with one primary healthcare center per district, giving a total of 18. These primary healthcare centers included six to 17 villages, with populations of between 3,000 and 30,000 (Ministry of Health of the Republic Indonesia, 2017b, 2017c, 2017d). Compared to other primary healthcare centers in the districts, they had a relatively tolerable communication infrastructure (paved roads, internet connection, and electricity), allowing for a smooth data collection process. In addition, they included many households in their catchment area (territory), enabling a more accurate picture of the various services provided by primary healthcare centers. The main information sources of this study were the

managers of primary healthcare centers, who were likely to be the most knowledgeable about the conditions and activities inside the facility and their outreach programs to local communities. When the head of a primary healthcare center was not available, the head of administration, the head of operations, acting head, or a senior health worker in charge became the informant. The interviews were led by experienced interviewers using electronic tablets and each interview lasted approximately 1.5 hours. Table 1 shows the districts of the sampled primary healthcare centers and the informant at each primary healthcare center.

RESULTS AND DISCUSSION

Table 2 indicates the facilities in primary healthcare centers, including operating hours, ease of access for patients, level of available human resources for health, available rooms, and the adequacy of medical equipment and medical supplies. The researchers reported findings from all primary healthcare centers in the sample (and by province) to highlight the regional variations in health supply.

Ten primary healthcare centers in the sample had beds for inpatient care (inpatient primary healthcare centers), while eight primary healthcare centers had no beds for non-inpatient care (outpatient

primary healthcare centers). Half of the primary healthcare centers with inpatient beds were located in East Nusa Tenggara (NTT). In Bengkulu, only one among the six primary healthcare centers visited could provide inpatient services.

All primary healthcare centers in the sample were open Monday to Saturday. Four were also open on Sundays, of which three had beds. The operating duration was four-to-six hours a day, between 7:00–8:00 am to 12:00–14:00 pm. This format applied in most primary healthcare centers throughout the country, not only to those located in DTPK. Most patients used a private vehicle or public motorbike to attend primary healthcare centers. However, the

roads to primary healthcare centers were often in poor physical condition, e.g., not asphalted, full of potholes, flooded, and rocky. Furthermore, many patients needed to traverse rivers (12 primary healthcare centers) and valleys (15 primary healthcare centers) to reach healthcare centers. On average, it took patients 99 minutes to reach a primary healthcare center; for some, however, travel time could reach six hours (primary healthcare centers in Rampi, South Sulawesi). These access barriers reflect conditions at DTPKs that are remote with inferior transportation infrastructures.

Table 2. Operating hours, human resources, and amenities in 18 primary healthcare centers by province.

	Bengkulu	NTT	South Sulawesi	Total
# Primary healthcare centers	6	6	6	18
# Inpatient primary healthcare centers	1	5	4	10
Operating hours				
# Open Monday–Saturday	6	6	6	18
# Open Sunday	1	2	1	4
Average duration (Monday–Thursday)	5.8 hours	5.1 hours	5.9 hours	5.58 hours
Average duration (Friday)	3.9 hours	3.1 hours	5.2 hours	4.04 hours
Average duration (Saturday)	4.8 hours	3.8 hours	5.6 hours	4.75 hours
Mode of arrival	Private	Public	Public	Private
Average transport cost	Rp.13,000	Rp.29,000	Rp.104,100	Rp.51,000
Average travel time	43 minutes	140 minutes	143 minutes	99 minutes
Average per Primary healthcare center				
General practitioner (GP)	1.5	0.5	0.67	0.89
Dentist	0.33	0.33	0.5	0.39
Nurse	10.8	22.3	8.8	14
Midwife	15.3	22.7	14.2	17.4
Pharmacist	0.67	1.17	0.5	0.78
Nutritionist	0.33	2	1	1.11
Public health expert	1.67	0.83	1	1.17
Environmental health expert	0	1.67	1	0.89
Lab technician	0	1.17	0	0.39
Average # consultation rooms	3.33	5.17	3.33	3.94
# with a storage room for drugs	6	6	4	16
# with a laboratory	2	5	3	10
# with availability “none”/ “very poor”				
Variety of drugs	2	0	0	2
Medical supplies	1	0	0	1
Medical equipment	3	0	1	4

On average, the primary healthcare centers in the sample had 0.89 general practitioners (GPs), 0.39 dentists, 14 nurses, and 17 midwives. Having less than one doctor in a primary healthcare center meant that some centers had no permanent doctor. The researchers identified five primary healthcare centers (three in NTT and two in South Sulawesi) that did not have a permanent GP and 11 that did not have a permanent dentist. This fell short of the minimum standard human resources for health according to the Ministry of Health’s decree, or *Permenkes* number 75, 2014 (75/2014) about primary healthcare centers, which states that for remote and very remote areas, there should be one GP in an outpatient primary healthcare center, two GPs in an inpatient primary healthcare center, and one dentist at every outpatient primary healthcare center (Ministry of Health of the Republic Indonesia, 2014b). The absence of a doctor may in turn discourage people from seeking health

treatment in primary healthcare centers, keeping in mind that reaching these centers is not easy for many, particularly for those who live far away. The minimum standard also requires a minimum of five nurses and four midwives in an outpatient primary healthcare center, and eight nurses and seven midwives in an inpatient primary healthcare center (Ministry of Health of the Republic Indonesia, 2014b).

Similarly, the unavailability of a pharmacist and a lab technician in primary healthcare centers means they cannot dispense doctor prescriptions or conduct blood tests. According to the Ministry of Health’s decree number 75/2014, there should be a laboratory technician, pharmacist, public health expert, and environmental health expert at each outpatient primary healthcare center and inpatient primary healthcare center, a nutritionist in every outpatient primary healthcare center, and two nutritionists at every inpatient primary healthcare

center (Ministry of Health of the Republic Indonesia, 2014b).

Most primary healthcare centers in the sample had at least three consultation rooms and a room in which to store drugs (16 primary healthcare centers). However, only 10 had a functioning laboratory, two had a laboratory that was in a poor physical condition, while eight had no laboratory. The availability of medical equipment (such as stethoscopes, thermometers, body scales, and sphygmomanometers to measure blood pressure) and medical supplies (such as cotton balls, syringes, and medical plasters) appeared to have been quite good. Few primary healthcare centers in the sample reported that these medical essentials were either unavailable or only available in unacceptable numbers. There were also very few complaints about the variety of drugs supplied to primary healthcare centers.

Table 3 presents activities in primary healthcare centers and shows that 15 of the 18 primary healthcare centers in the sample used computers to conduct administrative tasks and keep patient records. Moreover, despite being located in DTPK, primary healthcare centers nonetheless strived for efficiency and were committed to having accurate records of their patients and activities. This finding should ease many speculations that administrative data in primary healthcare centers in remote or rural areas are messy and unreliable. Policymakers can already use these records to oversee the daily activities of centers, their human resources, finances, the services they provide to publicly-insured patients, and to track the prevalence of common diseases in the community. The use of computer systems also aids regular monitoring and evaluation processes.

In one month, primary healthcare centers treated 481 outpatient cases and 12 inpatient cases (in 10 inpatient primary healthcare centers), or approximately 25 patients per day. Outside the DTPK area, a typical primary healthcare center could on average receive 90–100 patients per day (Rizcarachmakurnia, Wigati, and Sriatmi, 2017; Utama, Lestari, and Ikmaluhakim, 2017). Furthermore, there were more female than male patients, a trend also observed elsewhere (Rahmayanti and Ariguntar, 2017). Almost 70% of cases were provided to contribution beneficiaries grantees (*Penerima Bantuan Iuran* [PBI]), whose insurance premiums were paid by the government. In larger cities, a larger number of general patients may be paying “out-of-pocket”, but the majority of patients are covered by public insurance (PT Iconesia Solusi Prioritas, 2016). Primary healthcare centers in DTPK can manage most patient presentations, with approximately 6% referral rates to higher-level health facilities (hospitals). Aside from cases requiring more advanced medical treatment, referrals may also be caused by a shortage of medicine, inadequate medical equipment, and practical distance to the nearest higher-level facility (Alawi, Junadi and Latifah, 2017). The most common health problems presented were acute and communicable diseases. Twelve primary healthcare centers reported upper respiratory tract infection (ISPA) as the disease with the highest

occurrence. This finding was also the case elsewhere, not only in primary healthcare centers in DTPK (Afifah, 2017; Firnanda N, Junaid, and Jafriati, 2017; Rahmayanti and Ariguntar, 2017; Indonesian Ministry of Health, 2014). In addition to ISPA, primary healthcare centers also observed many instances of chronic disease, particularly hypertension and chronic digestive disorders (Rahmayanti and Ariguntar, 2017). Indeed, the prevalence of chronic diseases is predicted to increase in the coming decades, based on an aging population a shift towards sedentary lifestyles and unhealthy diets (Institute for Health Metrics and Evaluation, 2018; Indonesian Ministry of Health, 2014).

All primary healthcare centers in the sample presented health education classes, with topics including the promotion of clean and healthy lifestyles (such as the habit of washing hands with soap before eating and preparing meals, staying active every day, smoking cessation, and following a diet containing plenty of fruits and vegetables). These classes also included an introduction to the symptoms, causes, and treatments of common diseases, and mother-and-children health-related information such as antenatal care, common problems during pregnancy, exclusive breastfeeding in the first six months, and the benefits of immunization. The most frequently presented classes were on the promotion of a clean and healthy lifestyle and its links with the prevention of communicable diseases such as diarrhea and tuberculosis, and its impact on children’s health. As health awareness increases, people may be more likely to visit primary healthcare centers to obtain health treatment, medical advice, or regular health check-ups (Napirah, Rahman, and Tony, 2016). Among the three provinces in the sample, primary healthcare centers in NTT appear to be the most active regarding educational classes.

Most primary healthcare centers in the sample had extended their reach outdoors into the local community to detect the prevalence of priority diseases such as hypertension, tuberculosis, and malnourishment among young children. The most intensely monitored health problems were hypertension, malnourishment (stunting and wasting) in children below the age of five years, and receiving complete primary immunization. As in the case of educational classes, outdoor detection programs were managed most intensively by primary healthcare centers in NTT.

Primary healthcare centers are responsible for forming and overseeing *posyandu* in their catchment area. On average, the primary healthcare centers in the sample oversaw 16 active *posyandu*, which were presented monthly. Most primary healthcare centers also initiated monthly *posbindu lansia* and *posbindu PTM*.

These findings on the outdoor activities of primary healthcare centers differ from findings in Suharmiati, Handayani, and Kristiana (2012), who found that the lack of health workers in primary healthcare centers prevented them from conducting outdoor activities. One potential explanation for this may be that the catchment area of most primary healthcare centers in our sample was much wider

compared with the noted study and the latter's population had been small and sparsely distributed.

To elicit information about financial circumstances, the informants were asked whether (compared to the preceding three months) income, the absorption of funds, and expenses had increased (and by how much), remained stable, or had

decreased (and by how much). Since changes tend to be polarized towards extremes (increased or decreased significantly), the researchers pooled together answers indicated an increase (“>”) and decrease (“<”). Table 4 presents the results of this question.

Table 3. Activities in primary healthcare centers.

	Bengkulu	NTT	South Sulawesi	Total
# Primary healthcare centers	6	6	6	18
# with a computerized administrative system	4	6	5	15
Average case (monthly[^])				
Outpatient females	134.5	471.8	257.9	288.1
Outpatient males	155.4	239.4	185.0	193.3
Outpatient total	274.6	711.2	448.3	481.3
Inpatient females	5.7	11.7	5.3	7.9
Inpatient males	5.0	4.8	2.7	3.8
Inpatient total	10.7	16.4	8.1	11.7
Outpatient PBIs	250.3	467.3	253.4	337.9
Inpatient PBIs	6.3	8.2	6.6	7.3
Average referral rates (%)	0.09	0.04	0.05	0.06
Average % cases from PBI	0.62	0.69	0.73	0.68
Cases with the highest volume 1	ISPA	ISPA	ISPA	ISPA
Cases with the highest volume 2	Hypertension	Musculoskeletal	Digestive	Hypertension
Cases with the highest volume 3	Digestive	Digestive	Hypertension	Digestive
# can handle all cases	5	6	5	16
# with education classes				
Diarrhea and a clean and healthy lifestyle	5	6	5	16
The habit of handwashing at school	5	5	3	13
Introduction about hypertension	6	6	5	17
Introduction about tuberculosis	5	5	3	13
Importance of exclusive breastfeeding	6	6	5	17
Information on children's health	5	6	5	16
# with outdoor detection programs				
Hypertension	5	6	5	16
Tuberculosis	5	6	4	15
Malnutrition below the age of 5 years	4	5	4	13
Average active Posyandu	11.2	23.3	15.2	16.6
# with Posbindu PTM	6	4	4	14
# with Posbindu Lansia	5	6	1	12

Note: # number of observations; ^ monthly average was obtained from quarterly data divided by three.

In the past three months preceding the research, 14 of the 18 primary healthcare centers in the sample reported having received increased funding from the central government through health operational grants or *Bantuan Operasional Kesehatan* (BOK). Funding from public insurance (JKN capitation fund) increased in six primary healthcare centers, while revenues from out-of-pocket patients in most primary healthcare centers were relatively stable or in decline. This trend reflected an increase in the number of publicly-insured patients in primary healthcare centers, which in turn reduced the number of general patients. As such, this trend also suggests that centers are increasingly dependent on public funding as their primary source of income.

Absorption of funds essentially followed on from the increased funding. For example, the BOK fund is absorbed by increases in daily operational activities, following the presence of a higher patient volume. Furthermore, workloads increased alongside the higher number of patients that presented in

primary healthcare centers. This situation was echoed by the Ministry of Health (Ministry of Health of the Republic of Indonesia, 2017a).

Thirteen of the 18 primary healthcare centers in the sample reported increased expenses for medical service provisions, while only seven reported increased expenses for paying health personnel. With capitation funding, it is imperative to re-adjust worker compensation, given the increases in patient volume (Ramdani, Setiawati, and Herawati, 2016; KOMPAK, 2017). Ten primary healthcare centers reported increased expenses due to increases in indoor activities, and 12 reported increased expenses due to outdoor activities. Only three primary healthcare centers increased spending on building facilities; most provided either a “not relevant” or “do not know” answer to this question.

In conclusion, several shortcomings in facilities require urgent attention. For example, short operating hours and early closing times (12.00 am) render obtaining treatment non-feasible for many.

This includes patients who work long hours without sick permits or leave (e.g., blue-collar workers and farmers). Primary healthcare centers should consider running afternoon sessions, e.g., opening again at 14.30 to 17.30 (PT Iconesia Solusi Prioritas, 2016). Similar complaints were also documented by Apriyanto (2016) and Juliansyah (2013), who discussed the role of primary healthcare centers in providing the best possible service to patients. Syarif, Wahono, and Khoirul ABS (2017) found conditions related to facilities as being the most influential aspect of their performance from a patient perspective

because these conditions indicated “assurance” that centers were able to provide the best possible health service. Meanwhile, inconvenient access may discourage people to seek treatment (Radito, 2014). Amenities in primary healthcare centers must be clean, tidy, and inviting so that more people will be willing to attend health check-ups and receive appropriate health treatment when sick. For those who live far away from treatment centers, mobile primary healthcare centers can be run more frequently, thereby ensuring that everyone receives appropriate health treatment.

Table 4. The financial circumstances of primary healthcare centers.

	Bengkulu			NTT			South Sulawesi			Do not know/Not applicable	Total		
# Primary healthcare centers	6			6			6				18		
Compared with 3 months ago	<	=	>	<	=	>	<	=	>		<	=	>
# income													
BOK fund	0	1	4	0	0	6	0	1	4	2	0	2	14
JKN capitation fund	1	2	1	1	1	2	0	1	3	6	2	4	6
General patients	1	2	1	1	1	2	1	3	0	6	3	6	3
# absorption of fund													
BOK fund	0	1	3	1	2	3	0	1	3	4	1	4	9
JKN capitation fund	0	2	1	1	2	3	0	1	3	5	1	5	7
# expenses													
Medical service provision	0	1	4	1	1	4	0	1	5	1	1	3	13
Health professionals	0	2	3	1	2	2	1	0	2	5	2	4	7
Internal operations	1	0	4	0	1	5	1	2	1	4	2	2	10
Outdoor activities	0	1	4	0	1	4	0	1	4	3	0	3	12
Facility refurbishment	0	1	1	2	0	1	0	0	1	14	0	1	3

Note: the total number of primary healthcare centers may be less than 18 based on “not applicable” and “do not know” answers. “=” denotes did not change/remained stable; “<” denotes decreased minimally or significantly; “>” denotes increased minimally or significantly.

The absence of a doctor in primary healthcare centers may also demotivate people about pursuing healthcare. At the national level, there is an average of 1.83 GPs and 0.73 dentists per primary healthcare center (Kurniawan, Yudianto, Hardhana, and Siswanti, 2018). In our sample, there were only 0.89 GPs and 0.39 dentists per primary healthcare center. This does not meet the standard minimum human resources for health in primary healthcare centers in remote and very remote areas set by the Ministry of Health (2014b). It also falls short of the number of GPs and dentists in primary healthcare centers in the city of Ambon, Maluku province, in Eastern Indonesia, which has had a GP and a dentist for the past 10 years (Corputty, Kusnanto and Lazuardi. Lutfan, 2013). Nurses and midwives sometimes serve as substitutes for doctors. There were more nurses and midwives per primary healthcare centers in our sample (an average of 17 nurses and 14 midwives) than was reported at the national-level (an average of 15 nurses and 12 midwives) (Kurniawan, Yudianto, Hardhana, and Siswanti, 2018). However, our sample was located in DTPK, where primary healthcare centers tend to have a (much) wider catchment area in Indonesia; hence, more nurses and midwives are

needed to take up village health posts, or *poskesdes*, and village maternity clinics, or *polindes*.

In terms of activities, primary healthcare centers in our DTPK sample performed quite well, with a full range of indoor and outdoor activities including health education classes, outdoor detection of diseases in the community, and maintenance of active *posyandu* and *posbindu*. Outdoor activities in particular can enhance health service utilization, by informing more people about the availability of universal public health insurance and the wide variety of free health services available in primary healthcare centers (Restiyani, Fitriyah, and Astriksa, 2013).

To ensure that DTPK communities have access to high-quality primary care, immediate policies can be directed to improve the available facilities in primary healthcare centers. Initially, this will involve liaising with the district health office to address access to primary healthcare centers and recruit GPs, and to provide laboratory technicians and pharmacists (Harian Nasional, 2017). As patient volumes increase, the health professional-to-patient ratio will decrease, which can harm the quality of services. Abdul Gani Hasan (2017) calculated that a shortage of doctors can see patients receive less than

two minutes of consultation time. The local community may be able to help refurbish primary healthcare centers by coordinating actions together (*gotong royong*) for paving roads, repainting, and cleaning. To improve the quality of activities run by primary healthcare centers, creative and innovative educational programs must be designed. Moreover, managing poorly attended health education classes is a waste of resources. A small incentive (such as a souvenir) may be used to attract a wider audience in this regard. Primary healthcare centers can also liaise with the district health office to acquire additional resources (Listiana, Suryoputro, and Sriatmi, 2018). Health messages must also be conveyed simply and comprehensively to ensure that they can be implemented at home. Primary healthcare centers appear to have little incentive for upgrading their buildings. The researchers welcome the Ministry of Health's recent commitment to constructing more primary healthcare centers and renovating their existing run-down counterparts in DTPK before 2019 (Ramadhan, 2018).

In the long-term, policies should focus on the recruitment and retention of health personnel in DTPK. This should begin by cultivating altruism and morale among medical students serving in remote areas, and by providing incentives for medical graduates to work in DTPK. Attractive remuneration packages may also be designed to attract more experienced health personnel.

CONCLUSION

A primary healthcare center is where patients establish their first contact with a healthcare professional. As such, a primary healthcare center also presents opportunities for health personnel to detect diseases and provide appropriate health treatments to those who are sick or at high risk of developing health problems. The findings from our study revealed that primary care in primary healthcare centers in DTPK remains lacking, with inconvenient access to facilities and a lack of permanent doctors, pharmacists, and laboratory technicians. Nevertheless, primary healthcare centers have to date managed to handle the vast majority of patient presentations, which relate primarily to acute health complaints and non-communicable diseases. However, as disease profiles begin to shift towards primarily non-communicable diseases, primary healthcare centers may no longer be able to operate successfully without a permanent doctor. In terms of activities, primary healthcare centers in DTPK have been quite successful in interacting with their local communities through preventive and promotive programs. Finally, while primary healthcare centers received additional funding for catering to an increase in patient volume and daily operational activities, very few have used this opportunity to refurbish their facilities.

CONFLICT OF INTEREST

The authors declared no conflict of interest.

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