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EDITORIAL

WHY HEALTH WORKFORCE MATTERS: REFLECTIONS FROM CURRENT PANDEMIC AND PAST PROGRAMS EXPERIENCES

Mengapa Tenaga Kesehatan Penting:
Refleksi dari Situasi Pandemi dan Pengalaman Program Terdahulu

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A well-functioning health system depends largely on the quantity and capacity of health human resources who have responsibilities for organizing and implementing health services. A proper arrangement of health workers in terms of numbers, competencies, and diversity is necessary for responding to healthcare needs and achieving health program goals. The need for adequate and skilled health professionals has become even more urgent in the time of the current pandemic situation to ensure the resiliency of health systems. In responding to the COVID-19 pandemic, especially in Indonesia, attention is intensively paid to the aspect of facilities such as hospitals, as well as testing and protective equipment. However, we should not forget that the readiness of human resources including clinicians, nurses, laboratory staff, ambulance drivers, and so on are also of paramount importance.

In this edition of the Indonesian Journal of Health Administration, Firmansyah, Rahmanto and Setyawan (2020) found that the ratio of health workers for specifically handling the COVID-19 patients was not ideal compared to some countries. The ratio of health workers for doctor and nurse were 0.4 and 2.1, respectively, meaning that there were only 4 doctors for 10,000 people and 21 nurses serving for 10,000 people Firmansyah, Rahmanto and Setyawan (2020). As the frontline actors in the battle of the current pandemic, it is reasonable for the authors to suggest the policymakers to put more attention on the aspect of human resources in terms of the quantity as well as the capacity.

In this edition, we also invite all readers to reflect on the district health management in Low-and Middle-Income Countries (LMICs) from a commentary article written by Omar (2020) which emphasized on the importance of a shared vision of district strengthening, capacity building for individuals who are involved in the district management team, as well as the improvement of the systems. Another research by Hiola and Badjuka (2020) scrutinized factors which influenced village Midwife performance in relation to their work for reducing maternal and infant mortality rate. Midwife as one of health human resources has an important role in increasing the quality of maternal services to reduce maternal mortality rate (MMR) and infant mortality rate (IMR). Their study revealed that work period, rewards, and motivation were among the influencing factors on their

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performance. Therefore, providing training and increasing rewards proportionally are some of their recommendations to boost their motivation and performance (Hiola and Badjuka, 2020).

Highlighting the issue of motivation and performance, this edition also presented a paper that indicated the association of nurses' performance and nurses' work motivation as well as the role of leadership of the Head of inpatient room at the Indonesian Red Cross Hospital (Hartono *et al*., 2020). Better nursing performance and an increase in nurse' work motivation was influenced by the leadership of the managers. Hence, enhancing leadership skills through regular training is one of strategies which was mentioned by the authors (Hartono *et al*., 2020).

Turning to the primary health care (PHC) setting, we invite readers to reflect on the experience of a tuberculosis prevention program team in Surabaya. A study showed that team effectiveness in implementing the TB prevention program in PHC in Surabaya was affected by the dimension of task variety, task identity, and task significance (Lestyoningrum *et al*., 2020). PHCs need to utilize technology in upgrading the span of control, centralization, and understanding task characteristics to improve team performance. Another study by Arifah et al. (2020) investigated the determinants of access to Adolescent-Friendly Health Service. This study also suggested the use of technology, particularly electronic media, in the dissemination of information by health professionals to adolescents so that they can be well-informed about the program. Their study found that the proportion of adolescents who accessed the program was still low, and the number of adolescents who accessed the program via health professionals were lower than through peer educators. Insufficient knowledge about the program was identified as the reason for low access (Arifah *et al*., 2020). Thus, massive socialization using digital technology by health professionals or those who manage the program might be a suitable approach to escalate access.

The discussion on health workforce is not only limited to its recruitment, capacity building, distribution, and performance, but it is also crucial to consider the retention aspect. A study conducted by Santi, Nandini, and Alfiansyah (2020) in this edition of our journal evaluated the effect of burnout syndrome on turnover intention in Surabaya Surgical Hospital. As turnover can cause loss to the organization and health workers are prone to experience burnout syndrome, the authors want to analyze its association using organization commitment as an intermediate variable. The study found that burnout syndrome can be a possible factor which caused turnover intention if organization commitment decreased; therefore, reducing burnout syndrome and improving organizational commitment through a better reward system are some plausible recommendations for hospital managers to minimize turnover intention (Santi, Nandini, and Alfiansyah, 2020).

Concerning the current outbreak, the risk of burnout syndrome is likely to be suffered by health workers who handle COVID-19 patients. An online survey involving 1,461 medical workers revealed moderate levels of burnout were experienced by the majority of respondents (82%), which might subsequently also influence their well-being and performance (Nurbaiti, 2020). This is an alarming situation that urges us to be more vigilant and responsive to prevent any severe condition.

Finally, I enclosed this editorial greeting by a popular quote which stated:

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"the heart of every organization is its people". Investing best resources and efforts to provide and maintain qualified health human resources is a promising strategy to achieve health development goals. Because human resources for health are valuable assets, their existence, contribution, and issue will always matter.

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ORIGINAL RESEARCH

THE EFFECT OF BURNOUT SYNDROME ON TURNOVER INTENTION USING ORGANIZATIONAL COMMITMENT AS AN INTERMEDIATE VARIABLE

Pengaruh Burnout Syndrome Terhadap Turnover Intention dengan Komitmen Organisasi Sebagai Variabel Perantara

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ABSTRACT

Background: The average of employee turnover rate in Surabaya Surgical Hospital was quite high roughly about 16.21% in 2011 until 2015. Employees' negative behavior or feelings due to long exposure to an emotional stressor are called burnout syndrome which could trigger turnover in an organization.
Aims: This study analyzed the effect of burnout syndrome towards turnover intention using organizational commitment as an intermediate variable.
Methods: This study was cross-sectional research by involving 126 respondents as samples according to the proportion of each unit at Surabaya Surgical Hospital. Data were analysed statistically using multiple linier regression.
Results: Respondents were mostly female (65.1%) and in the age group of 26-35 years (62.7%). Most of them were early adults, permanent employees (95.2%), and undergraduates (89.7%). While the minority have worked for 3 up to 4 years (40.5%). Burnout syndrome had a significant effect on employees' organizational commitment. Organizational commitment showed a significant effect on turnover intention, while burnout syndrome did not show a significant effect on turnover intention.
Conclusion: Burnout syndrome did not directly affect turnover intention but became a possible cause of turnover intention through organizational commitment as the intermediate variable. The results of this study could be the basis for hospital managers to decrease employee's turnover intention by minimizing burnout syndrome and increasing organizational commitment with a better reward system.

Keywords: burnout syndrome, organizational commitment, turnover intention, hospital.

ABSTRAK

Latar Belakang: *Rata-rata tingkat turnover karyawan di Rumah Sakit Bedah Surabaya cukup tinggi, kurang lebih 16,21% pada 2011 hingga 2015.* Perilaku atau perasaan negatif karyawan karena paparan yang lama kepada stesor emosional sering dikenal sebagai burnout syndrome yang dapat memicu turnover di sebuah organisasi.
Tujuan: *Penelitian ini bertujuan untuk melakukan analisis pengaruh burnout syndrome terhadap turnover intention melalui komitmen organisasi sebagai variabel perantara.*
Metode: *Jenis penelitian ini adalah cross sectional dengan melibatkan 126 responden sesuai proporsi masing-masing unit dalam rumah sakit. Data dianalisis secara statistik menggunakan regresi linier berganda.*
Hasil: *Sebagian besar responden adalah perempuan (65,1%) dan berada pada kelompok umur 26-35 tahun (62,7%). Sebagian besar adalah dewasa muda, karyawan tetap (95,2%), dan sarjana (89,7%). Sedangkan, sebagian kecil dari mereka telah bekerja 3 sampai 4 tahun (40,5%). Burnout syndrome berpengaruh secara signifikan terhadap komitmen organisasi karyawan. Komitmen organisasi memiliki pengaruh secara signifikan terhadap turnover intention, sedangkan burnout syndrome tidak memiliki pengaruh signifikan terhadap turnover intention.*
Kesimpulan: *Burnout syndrome tidak berpengaruh secara langsung terhadap turnover intention, tetapi mungkin dapat menjadi penyebab turnover intention melalui komitmen organisasi sebagai variabel perantara. Berdasarkan hasil penelitian, kepala rumah sakit dapat melakukan upaya untuk menurunkan turnover intention dengan meminimalisir burnout syndrome dan meningkatkan komitmen organisasi dengan sistem reward yang lebih baik.*

Kata kunci: *burnout syndrome, komitmen organisasi, turnover intention, rumah sakit.*

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INTRODUCTION

Healthcare service organizations have several characteristics, such as intangible outputs, service inseparability, and labor intensiveness. Human resources called labor intensiveness are the most dominant factor for healthcare service organization. Personal judgment about poor health service quality will affect patient visits. Avoiding such judgement, healthcare service organizations need to manage human resources well (Santi, 2016).

One of the issues related to human resources is turnover. Turnover intention is defined as a factor which mediates desires of stopping action in an organization (Dewi, Wulan and Fathoni, 2019). When an employee leaves his or her job, the organization needs to replace its employee. It is called as turnover. Several organizations stated that turnover is a problem which impacts the cost.

Besides, turnover causes disadvantages to organizations in several matters because they have to replace the old employees with the new ones (Kessler - Ladelsky, 2014). There are financial issues related to turnover (Waldman *et al.*, 2004). Healthcare service organizations will spend some expenses for recruitment and training for new employees. Besides, turnover also results in non-financial expenses, such as productivity loss and decrease in service quality.

Saputro *et al.* (2016) stated that the high turnover intention will become a serious problem for the company and even make them frustrated, knowing the staff recruited have chosen jobs in other companies (Saputro, Fathoni and Minarsih, 2016). Moreover, Sartono *et al.* (2018) stated that humans are important resources in industries and organizations. Thus, managing human resources can be done by providing and maintaining the quality labor and its costs. Previous research showed that money loss due to decreasing productivity as stated in Cost of Reduced Productivity (CoRP) in healthcare facilities was 7 million up to 19 million dollars or more than 5% of the annual operational budget (Deane and Howard, 2004). An organization needs to make sure their human resources to avoid turnover (Sartono, Yulianeu and Hasiholan, 2018).

According to Lim *et al.* (2017), turnover could be differentiated into 2 types, such as Voluntary Turnover (VT) and Involuntary Turnover (IT). Voluntary turnover happens when employees resign from their job due to personal intention, such as better career opportunities in other organizations. Some other factors of voluntary turnover are job dissatisfaction, salary and benefit rate, supervision, and employee’s personal reasons. Meanwhile, involuntary turnover occurs because the organization fires employees because of poor performance or violation of the organization rules.

Surabaya Surgical Hospital is one of the private hospitals in Surabaya, founded by surgeons who are members of Indonesian Surgeon Association (IKABI). Based on the Human Resource Department of Surabaya Surgical Hospital, the turnover rate at the hospital was quite high. This study is especially concerned about voluntary turnover at Surabaya Surgical Hospital. A competent employee may feel dissatisfied with the organization; thus, they seek for another job. High voluntary turnover rate indicates that several problems occur in the organization. It needs to grasp factors contributing to the turnover and develop strategies to solve it (Hilton, 2015). While, involuntary turnover is mostly caused by the poor employee performance, thus the organization decides to fire the employees.

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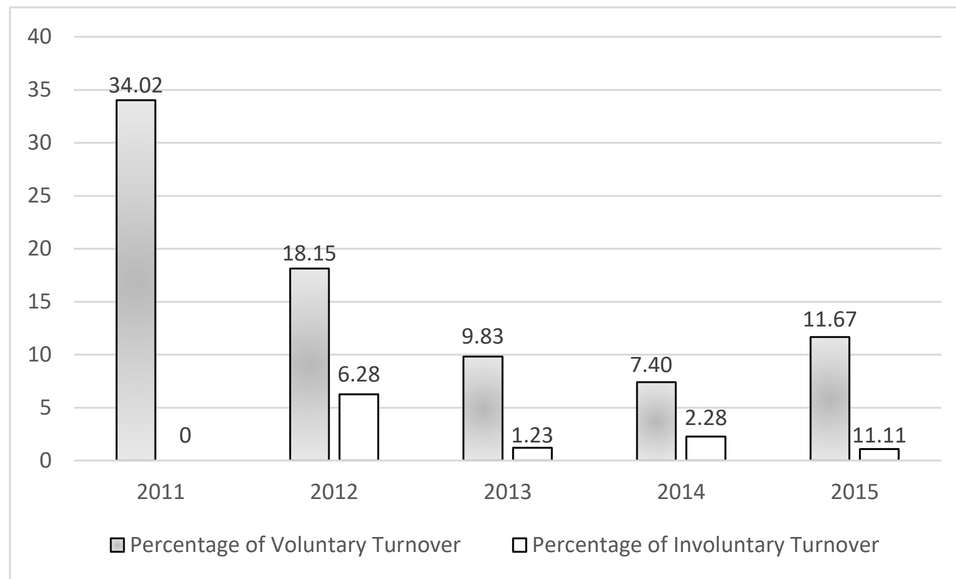

Source: Data from Surabaya Surgical Hospital in 2011-2015

Figure 1. Employee Turnover Rate at Surgical Hospital Surabaya from 2011 to 2015.

Turnover is the final result of burnout syndrome. Burnout syndrome is defined as employees' negative behavior and feelings towards their work due to long exposure to an emotional stressor. Burnout syndrome consists of three different aspects, such as emotional exhaustion, depersonalization and personal accomplishment (Morgan, De Bruin and De Bruin, 2014).

Burnout syndrome affects not only people with burnout syndrome but also others who surround them. Klein *et al.* (2010) did research about a male surgeon who suffered from burnout syndrome. He tended to make several mistakes while working. Absenteeism is the most frequent impact of burnout syndrome (Dyrbye *et al.*, 2019). Burnout syndrome also causes personal dysfunctions especially health problems. Burnout syndrome occurs to employees whose expectation about their work is not fulfilled, and thus it results in turnover intention.

Ribeiro *et al.* (2014) explained that health workers have risks of burnout syndrome for closely contact with patients at work. Figure 1 shows that the voluntary turnover rate at Surabaya Surgical Hospital tends to decrease from 2011 to 2014 but increases into more than 10% in 2015. Employee turnover will be categorized as normal if its average is between 5 and 10% per year (Gillies, 1994). It will be considered high if the average is more than 10% per year. However, Surabaya Surgical Hospital has the standard of employee turnover rate at 7.5% in 2015. Although this rate is lower than Gillies's, it can be considered problematic. Most previous studies examined the influence of burnout syndrome on turnover intention. This present study is worthy since it analysed how burnout syndrome influences turnover intention through organizational commitment as the intermediate variable. Besides, the pattern of turnover theory could me more clearly understood by adding an intermediate variable. The research objective was to determine burnout syndrome effect to turnover intention through organization commitment as an intermediate variable. Therefore, turnover process could be explained comprehensively.

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METHOD

This study was observational with cross-sectional design because there was no intervention or experiment for respondents in collecting data. The sampling technique used was proportionate stratified random sampling. It was assumed that this study involved heterogeneous population, which consist of several stratum (Supriyanto and Djohan, 2011). This study was conducted at Surabaya Surgical Hospital from February to July 2016, while the data were collected on May 2016. It is a special type-B hospital which established by most surgeons specializing in IKABI (Indonesian Association of Surgeons) and provides surgical services.

The respondents were employees who have already worked at Surabaya Surgical Hospital for at least 6 months. These inclusion criteria were taken by considering the working period of a new employee with three-month orientation and three-month assessment. If the employee meets the criteria, he/she can be involved as respondent, if not he/she will be dismissed. Moreover, this study assumes that six-month working is enough for employees to experience burnout syndrome. The population of this study were 180 employees who have already worked at least 6 months. The sample size was calculated by Slovin formula with α = 0.05. Out of 180 respondents, minimum sample size was 125 respondents. However, this study involved 126 people instead because the proportion of employees in each unit was also considered.

The study used Maslach Burnout Inventory (MBI) questionnaire as the instrument of burnout syndrome. It consisted of 22 statements which 7 statement items measured indicators of emotional exhaustion, 7 statement items measured depersonalization indicators, and 8 statement items measured indicators of personal accomplishment (Sabbah *et al.*, 2012). Each item could be answered in a 7-point Likert scale ranging from “never” (=0) to “daily” (=6). In addition, the organizational commitment of employees was measured using Meyer and Allen Model of Organization Commitment (Jaros, 2007). To measure the organizational commitment, there were 8 statement items on each type of commitments, such as affective commitment, continuance commitment and normative commitment. There were 24 items in total in the organizational commitment questionnaire with a 4-point Likert scale ranging from “strongly disagree” (=1) to strongly agree (=4). Data were collected through a questionnaire which consists of 3 statements about employee’s desire to stay in the organization. This questionnaire has a 4-point Likert scale ranging from “strongly disagree” (=1) to strongly agree (=4).

To assess questionnaire validity and reliability, researchers conducting validity and reliability test at Mother and Child Hospital NUN Surabaya which had the same characteristics as Surabaya Surgical Hospital. It was a special type-B hospital. Data were collected by interview. The number of respondents involved in the validity and reliability test was 30 employees. All of statement items in the questionnaires had scores more than R table=0.361. it could be concluded that the research instrument was valid. The Cronbach’s alpha value was at 0.826, meaning the questionnaire was reliable (Cronbach’s alpha value >0.06).

The characteristics of respondents, i.e., age, gender, education level, and employment status were analysed using descriptive statistic. Data were analysed quantitatively as respondents’ perception was measured using a scale. Multiple linier regression measured the respondents’ perception by looking at $p < \alpha$ (0.05) to measure the effect of independent variable

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towards dependent variable. Furthermore, it also looked at β-value to determine the effect size and direction. The effect of variable independent was considered significant on the dependent variable if it has $\alpha < 0.05$.

RESULTS AND DISCUSSION

In this section, it presents respondents' characteristics, such as gender, age, education level, employment status, and work period.

Gender and Age

Results showed the respondents were mostly female (65.1%). Most of them were 26-35 years old (62.7%), categorized as early adult. Only few respondents (2.4%) were categorized late adult (36-45 years old). The majority of respondents who were in the early adulthood appropriately can reflect employees' turnover intention. Early adulthood is a period where employees still have high productivity. When a job has no opportunities to increase the growth of employee, it can potentially hurt employee's future productivity because he or she feels has no opportunity for learning. In that period, employees easily can decide to turnover or leave the organization if they find a gap between expectation and organization regulations.

Education Level

In terms of education level, the respondents were mostly undergraduates (89.7%). In summary, the majority of respondents were highly educated. Education level may influence people's decision-making process.

Employment Status and Work Period

Based on the employment status, most of the respondents were permanent employees (95.2%), and only 4.8% were temporary contract employees. Most of respondents have worked for 3 up to 4 years (40.5%), and the rest have worked for more than five years. These data were assumed to match with conditions where burnout syndrome may occur after long exposure to tasks.

Burnout syndrome is negative feeling and attitude of employees towards their job as a response to a stressor which can come in a long period of time. Burnout syndrome may be in forms of emotional exhaustion, depersonalization and personal accomplishment. Emotional exhaustion is a psychological condition in which people lack enthusiasm for work. Meanwhile, depersonalization is a psychological state in which cynicism or negative reaction and ignorance towards works environment occur. The last is decreasing personal accomplishment, a psychological state in which the level of productivity declines

Based on Table 1 and 2, the measurement of emotional exhaustion shows a mean score of 2.18. It shows that the employees had low emotional exhaustion during work. While, they obtained a mean score of 1.23, explaining moderate depersonalization during work. In the other aspect, they got a mean score of 5.01 for personal accomplishment, portraying high category of personal accomplishment. These findings are similar to the research conducted by Enginyurt *et al.* (2016). Both studies found the burnout syndrome level among physicians and health workers were low in terms of emotional exhaustion and depersonalization, but high in terms of personal accomplishment. Feeling towards personal accomplishment among health workers can improve if employees' perception of commitment, especially affective commitment, to the organization gets better.

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Table 1. Burnout Syndrome Measurement Based on Respondents' Perception at Surabaya Surgical Hospital.

Variables	Mean	Average
Emotional Exhaustion		
I am emotionally exhausted due to my work	3.04	2.18
I require a great deal of efforts to work with people all day long	3.52	
My work stressed me	2.91	
My work frustrated me	1.52	
I work too hard in fulfilling my job	2.62	
I am stressed too much while working in direct contact with people	1.30	
I feel like I am at the end of my rope	1.10	
Depersonalization		
I treat certain patients impersonally as if they were objects	0.42	1.23
In the morning I feel tired to get up and face up to another day at work	0.98	
Patients make me feel to responsible for some of their matters	2.97	
I feel a little patience at the end of workday	1.61	
I do not care about what happens to some patients	0.65	
I become more insensitive to people	1.10	
I am afraid that this job makes me unaware	0.91	
Personal Accomplishment		
I accomplished many valuable things in my work	4.61	5.01
I feel very spirited	5.26	
I can easily figure out the patients' feeling	4.99	
I can effectively treat patients' problems	4.56	
I can handle emotional problems very calmly	5.02	
I feel to have a positive influence on people because of this job	5.13	
I easily can create a relaxing atmosphere with patients	5.21	
I feel refreshed when I am close with my patients	5.30	

Table 2. Results of Burnout Syndrome Categorization.

Variables	Mean Scores	Categories
Emotional Exhaustion	≤ 2.43	Low Emotional Exhaustion
	2.44 - ≤4.14	Moderate Emotional Exhaustion
	≥ 4.15	High Emotional Exhaustion
Depersonalization	≤ 0.71	Low Depersonalization
	0.72 - ≤1.57	Moderate Depersonalization
	≥ 1.58	High Depersonalization
Personal Accomplishment	≤ 4.13	Low Personal Accomplishment
	4.14 – ≤ 4.88	Moderate Personal Accomplishment
	≥ 4.89	High Personal Accomplishment
Burnout Syndrome	≤ 2.67	Low Burnout Syndrome
	≥ 2.68 – 3.28	Moderate Burnout Syndrome
	≥ 3.29	High Burnout Syndrome

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Organizational commitment is a trust for accepting organizational goals and staying in the organization. It is high desire and belief to stay as a member and to accept the organizational values and goals. In other words, it is a behaviour that shows employees' loyalty to the organization as well as describes on-going process of expressing attention to the organization success. Committed employees usually have a good attendance record, show loyalty and have a low turnover rate. Such employees may have good commitment and loyalty because they perceive they are involved in the organization activities (Wibowo, 2014).

Enginyurt *et. al.* (2016) stated that three subdimensions which best describe organizational commitment are affective, continuance and normative commitment. First, affective commitment is a feeling to stay involved in the organization due to similar self-purposes to the organization's terms. The strong affective committed employees work voluntarily and passionately since it is their own choice to work for the organization. Second, employee will remain in the organization due to benefits given by the organization, it is called continuance commitment. Employees particularly want to stay in the current organisation if the cost of termination is considered high. Continuance commitment mostly comes up from individuals' investments in the organisation, such as long-term effort or financial ties, and the absence of other business alternatives. Employees who have a sense of liability for the organization might have normative commitment to stay in. The concept of continuance commitment has been widely studied in terms of emotional bond between an employer and employee so-called as psychological contracts. The results of organizational commitments were as follow (Table 3).

Results also showed the mean scores of affective commitments, continuance commitment, and normative commitment are 2.75, 2.54, and 2.66 respectively. The measurement of affective, continuance, and normative commitment is categorized into 4 ranges; 1) Mean score 1 - ≤1.75 (very low); 2) Mean score ≥1.76 - ≤2.50 (low); 3) Mean score ≥ 2.51 - ≤3.75 (high); and 4) Mean score ≥ 3.76 – 4 (very high). Among three types of organizational commitment, affective commitment has the highest mean score of 2.75. Shurbagi (2014) asserted employees who have affective commitment are going to be more dedicated and have willingness to stay in the organization. Management team can use management by objective to develop a better commitment and engagement to align employee's self-purposes with organization's goals. Moreover, this present study discovered that the employees had high continuance and normative commitment since the mean score exceeds 2.5. To sum up, the organizational commitment of employees at Surabaya Surgical Hospital is in high category (means cores 2.65).

Table 3. Organizational Commitment Measurement Based on Respondents' Perception at Surabaya Surgical Hospital.

Type of Organizational Commitment	Mean Scores	Mean Scores
Affective commitments	2.75	2.65
Continuance commitment	2.54	
Normative commitment	2.66	

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In spite of this fact, there were some indicators that the employees did not have high organizational commitment. The affective commitment indicators showed that most of employees are not very happy to work in the organization forever (53.2%). They also think that they can out to work in another organization (46%). In continuance commitment indicators, the employees will not be disrupted if leaving the organization at that time (61.1%). Moreover, there were no serious consequences for leaving the organization (56.3%), and one of the major reasons is that turnover will not require considerable personal sacrifice (45.2%). In terms of normative commitment indicators, the employees thought moving from organization to another organization is not that unethical (64.3%). If they get another offer for a better job elsewhere, they may think it is right to leave their organization (63.5%).

Moreover, the result of employee's turnover showed the mean score 2.39. If the mean score >2.5 showed that most employees in Surabaya Surgical Hospital have high turnover intention. The effect of burnout syndrome on turnover intention using organizational commitment as the intermediate variable was explained in Table 3. The variables were tested by using multiple linear regression.

Table 4 explicates that burnout syndrome significantly affects the organizational commitment of employees at Surabaya Surgical Hospital ($p=0.018 < \alpha=0.05$). Burnout syndrome contributes to organizational commitment with β value equal to 0.211. It suggests that the burnout syndrome rate at Surabaya Surgical Hospital is 21.1%, influenced by the variations of burnout syndrome variables. The remaining is influenced by other factors beyond burnout syndrome. The β-value is negative. It suggests the higher burnout syndrome is, the lower the organizational commitment is.

This result is similar to what Enginyurt *et. al.* (2016) have found in their study. A cross-sectional survey conducted to 43 physicians, 123 nurses, 134 technicians, and 181 other caregivers working at Ordu University Education and Research Hospital under Ministry of Health. Data were also collected using the Organizational Commitment Questionnaire and Maslach Burnout Inventory (MBI). They found burnout syndrome was statistically significant to organizational commitment. Organizational commitment which consists of affective commitment, continuance commitment and normative commitment has potential indicators for the onset of burnout syndrome (emotional exhaustion, depersonalization and personal accomplishment). Moreover, these findings higlight that affective commitment is considered as one of the dominant factors causing burnout syndrome among healthcare professionals.

Moreover, Lin *et. al.* (2011) conducted a study which confirmed the relationship between three aspects (job stress, job burnout, and job satisfaction) and organizational commitment) among Taiwanese medical radiologists. The participants of this study were 310 medical radiologists who work in academic medical

Table 4. Effect of Burnout Syndrome and Organizational Commitment on Turnover Intention.

Independent Variables	Dependent Variables	Sig	Beta
Burnout Syndrome	Organizational Commitment	0.018	-0.211
Organizational Commitment	Turnover Intention	0.000	-0.563
Burnout Syndrome	Turnover Intention	0.610	0.039

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centers, metropolitan hospitals, or local community hospitals. The SEM confirmatory factor analysis was in use to test the hypotheses. Based on the result, job burnout had a significant but negative correlation to organizational commitment.

Another finding of this present study is that burnout syndrome did not significantly affect turnover intention ($p=0.610 > \alpha=0.05$). This is similar to the results of survey conducted by (Narainsamy and Westhuizen, 2013) to investigate the quality of work-related well-being among medical laboratory employees. The objective of this study was to measure the job satisfaction, occupational stress, work engagement, and burnout. It was a cross-sectional survey in which 202 medical laboratory staffs from two prominent private laboratories participated. Like other studies, Maslach Burnout Inventory was used to measure burnout. This study showed that burnout and occupational stress had a negative correlation with job welfare. However, this study did not identify the correlation of burnout with turnover or turnover intention.

The researchers utilized multiple linier regression to test burnout simultaneously with organizational commitment. They discovered organizational commitment significantly influenced turnover intention, but burnout did not significantly influence turnover intention. It may be due to the fact that the effect of organizational commitment was bigger than that of burnout towards turnover intention. Thus, burnout did not significantly affect turnover intention.

The analysis of burnout showed that the employees had low emotional exhaustion (Mean= 2.18), low depersonalization (Mean= 1.23), and high personal accomplishment (Mean= 5.01). Whereas, the employees had a high turnover intention (Mean= 2.39). Even though they had a low burnout rate, the turnover intention was high. One of the confounding variables to this condition is career opportunity.

Employees' perception affects turnover intention. If so, turnover may lead people to move to other companies. If labour market conditions deteriorate, employees may decide to remain in the organization. Conversely, when opportunity for employment are large, the turnover intention rate increases (Santi, 2016).

Career opportunities are not only related to compensation. Career growth opportunity also becomes an external factor that causes turnover intention. Most of the employees at Surabaya Surgical Hospital were aged 21-30 years (59.5%), meaning that they still have time and desire for career advancement.

Career is a continuity of job experiences in a person's lifetime. The carer growth opportunity refers to an on-going process, and application of skills, and an ongoing process of planning and directing action towards personal work and life goals. Career opportunity can be defined as a sense where employee's current position suits with their career objectives and concerns in the organization. The concept of organizational support for programs and opportunities to support employee's development is different from the concept of perceived career opportunity. When employees' interests suit with their career concerns and objectives, employees will perceive that they obtain a career growth.

Many researchers have noted that due to diverse reasons (e.g., technological growth, developed knowledge bases and the emergence of global competition), the career's trait has thrived fast. In spite of that, it might be related to a shorter period of retention in an organization. For example, instant training and development programs to the future of employability could motivate core employees in organization.

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Toh and Denisi (2003) mentioned that the different payment between two groups also leads to frustrations and discouragement. In addition, the nature of international staffing can negatively affect local employees' career visions and organizational identifications. Local employees are those whose usual place of residence is within the local area. Local employees would feel that their opportunities taken away. It is related to turnover believed as the result of unfulfilled employee's career and chances, while the organization that promotes career growth opportunity may have a high retention rate. In summary, turnover intention is related to perceived career growth opportunity.

Another result of this present study showed that organizational commitment significantly influences turnover intention ($p=0.000 < \alpha=0.05$). Organizational commitment contributes to turnover intention with β-value at 0.563. It showed that turnover intention rate at Surabaya Surgical Hospital was 56.3% due to variations inorganizational commitment variable. While, the remaining of 43.7% was affected by other factors beyond organizational commitment. The β-value was negative, depicting that the lower organizational commitment is, the higher turnover intention is. In conclusion, burnout syndrome can cause turnover intention when organizational commitment becomes the intermediate variable. However, this study found burnout syndrome did not significantly affect turnover intention.

Organizational commitment is the level to which employees believe and accept organizational goals, so the want to stay in organization. Sartono, Yulianeu and Hasiholan (2018) stated that organizational commitment is reflected by individual to match his self-purposes and organization goals. Organizational commitment affects decision-making whether to stay as a member or leave for a new job. Kharismawati and Dewi (2016) also argued that organizational commitment is compliance to remain in an organization.

Avanzi *et. al.* (2014) used a social identity theory in identifying its association with organizational commitment. This study showed that employees' organizational commitment at Surabaya Surgical Hospital affects turnover intention. Turnover intention can be defined as individual's desire to quit from organization (Azanza *et. al.*, 2015). Khan (2015) further elaborated that turnover intention is the final cognitive decision-making process before an employee decides to leave a job. Among three variations of organizational commitment, they are all psychological states as regard to the relationship between the employees and the organization and implications for turnover intention in the organization. Other research also stated that those types of organizational commitment had a negative correlation with turnover intention. Mathieu *et. al.* (2015) explained only organizational commitment significantly affected turnover intention.

Moreover, the meta-analysis research concluded that job satisfaction could not predicted turnover better than organizational commitment (Griffeth, Hom and Gaertner in Mathieu *et al.*, 2015). Some researchers explained that organizational commitment developed from job satisfaction and mediates the effect of job satisfaction on turnover intention. Organizational commitment had a significant effect towards turnover intention and its effect was negative (Alfresia, 2016).

Job burnout is mentioned as exhaustion of both mental and physical. It is a long-term stress response to emotional and interpersonal stressors at work, which encompass emotional exhaustion, depersonalization, and reduced personal accomplishment (Peng *et. al.*, 2016). Emotional exhaustion is an extreme emotional fatigue resulting in the lack of enthusiasm about works. When employees

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feel emotionally drained, they will impulsively provide services. They still feel exhausted and less enthusiastic even though they have had enough rest. When employees suffer from burnout syndrome, they will avoid to work in contact with people.

Depersonalization refers to the intentional effort to keep distance from individual and their work, as well as to exhibit passive, apathetic, cynical attitudes and sensitive towards others, such as treating patients badly. When reduced personal accomplishment occurred, it showed the low sense of self-respect and even more in low work evaluation, inability to experience comfort, satisfaction, and a sense of accomplishment. Xiaoming *et. al.* (2014) stated that reduced personal accomplishment can be in forms of poor self-evaluation results, low interpersonal relationships, loss of enthusiasm, decreased productivity and lack of adaptability.

In addition, Xiaoming *et. al.* (2014) used cross sectional design with Maslach Burnout Inventory (MBI) as the research instrument. Findings showed that burnout had a negative correlation with job stress, but burnout syndrome had no correlation with turnover intention. These results were similar to research conducted by Ford *et al.* (2019) which involved 1.500 teachers from 73 schools in a large, high-poverty, and urban Midwestern district school. The study presented a direct relationship between burnout and turnover intention through organizational commitment. Burnout and organizational commitment were the strongest direct predictor (Ford *et. al.*, 2019). This supports this present study which organization commitment has a direct effect towards turnover intention from the Hospital and their profession.

Nevertheless, this present study provides dissimilar results to the research stating burnout syndrome affects turnover intention. The previous study done by Ohue, Moriyama and Nakaya, (2011) explained that nurses' turnover intention had a positive relation to emotional exhaustion. Intention to stay had a negative relation to emotional exhaustion and depersonalization, but positively related to personal accomplishment. Therefore, Ohue, Moriyama and Nakaya (2011) concluded that employees who try to leave their current jobs might suffer from burnout syndrome and should undergo burnout prevention program for reducing the turnover rate. Burnout can affect turnover intention when organizational commitment decreases. Wang, Hall and Rahimi (2015) stated that there was a positive relationship between burnout syndrome and turnover intention. It is worth noting that few (if any) studies have distinguish between turnover intention from the organization and profession as this present study has discussed so far.

CONCLUSION

The employees at Surabaya Surgical Hospital had low emotional exhaustion rate, moderate depersonalization rate and high personal accomplishment. However, some indicators of emotional exhaustion and depersonalization showed that employees need great efforts to work with other people and to be responsible for patients' problems. The assessment of organizational commitment depicted that the employees had high affective, continuance and normative commitment. However, the employees did not have high assessment in all indicators of organizational commitment.

In terms of affective commitment, some indicators mention that the employees are not very happy to spend the rest of their career in the organization, thus they might prefer another organization. Meanwhile, the indicators of continuance commitment point out that most of the employees take it easy to leave for another

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job because there are no serious consequences and personal sacrifice. The employees also did not consider turnovers unethical for a better job. This condition, in summary, describes the indicators of normative commitment that they experience at work. To summarize this present study, burnout syndrome influenced turnover intention as organizational commitment decreased. However, burnout syndrome did not significantly influence turnover intention. The hospital managers need to minimize employee's turnover intention by decreasing burnout syndrome and increasing organizational commitment, for example, using a better reward system.

CONFLICT OF INTEREST

The authors state that there is no conflict of interest for this article.

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COMMENTARY ARTICLE

STRENGTHENING DISTRICT HEALTH MANAGEMENT IN LOW-MIDDLE INCOME COUNTRIES: REFLECTIONS AND WAY FORWARD

Penguatan Pengelolaan Kesehatan Daerah di Negara Berpendapatan Rendah-Menengah: Refleksi dan Langkah ke Depan

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ABSTRACT

Introduction: Health systems in low-middle income countries are undergoing considerable changes in a context of ongoing health sector reforms. Districts have, therefore, been increasingly recognised as the level where health policies and health sector reforms are interpreted and implemented. At the same time, decentralisation in its different forms has become a popular reform in many countries, and this increases the importance of ensuring that districts have the organisational capacity to offer a good service.
Aim: The article investigates the process, challenges and opportunities of health system development at district level in low-middle income countries.
Discussion: While district strengthening is probably necessary in relation to the success of all other health reforms, it is argued that it has not been accorded the importance probably because it is not seen as glamorous. The district health management team must include both strengthening the capacity of individuals, but crucially also, improvement of systems. Many initiatives have been patchy and fail to provide a consistent national approach. The persistence of top-down approaches to health care works directly against districts being able to take charge of their own affairs.
Conclusions: A shared vision of district strengthening must be achieved in order to progress with the achievement of Universal Health Coverage and Sustainable Development Goals.

Keywords: district health strengthening, capacity building, low-middle income countries, universal health coverage.

ABSTRAK

Lata Belakang: Sistem kesehatan di negara berpendapatan rendah dan menengah masih berubah-ubah dalam konteks reformasi sektor kesehatan yang terus berlangsung. Oleh karena itu, tingkat daerah semakin dikenal sebagai tempat interpretasi dan pelaksanaan kebijakan kesehatan dan reformasi bidang kesehatan. Hal yang sama juga berlaku pada bentuk-bentuk desentralisasi yang merupakan reformasi dikenal di banyak negara, dan sistem ini menunjukkan pentingnya memastikan daerah memiliki kapasitas managemen pelayanan yang bagus.
Tujuan: Artikel ini menelaah proses, tantangan, dan kesempatan pengembangan sistem kesehatan pada tingkat daerah di negara berpendapatan rendah dan menengah.
Diskusi: Penguatan daerah mungkin diperlukan untuk kelancaran reformasi pada semua lini kesehatan meskipun pada dasarnya daerah masih dipandang tidak penting. Tim manajemen kesehatan daerah perlu menguatkan kapasitas individual dan utamanya peningkatan sistem kesehatan. Banyak inisiatif gagal dan tidak merata dalam melaksanakan pendekatan nasional yang konsisten. Konsistensi pendekatan dari atas ke bawah pada pelayanan kesehatan dapat dilaksanakan secara langsung agar daerah dapat mengurus kepentingannya sendiri.
Kesimpulan: Visi penguatan daerah yang sama perlu diwujudkan untuk mencapai Universal Health Coverage dan Tujuan Pembangunan Berkelanjutan.

Kata Kunci: penguatan kesehatan daerah, pembangunan kapasitas, negara berpendapatan rendah dan menengah, universal health coverage.

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INTRODUCTION

Over the last three decades, many countries have developed health sector reform policies. In general, the intention is to improve the use of health care resources in the interest of the overall level of and accessibility to health care for the population to achieve universal health coverage (Berwick *et al.*, 2006; Atun *et al.*, 2015). The range of reforms undertaken varies from country to country, as does the extent to which the reforms are developed as a coherent policy response or picked up one at a time as a new fashions dictate, or as donor support when offered.

A comprehensive programme of reform requires changes of kinds at various levels of the system. Reforms at the systemic level include such measures as the development of a health financing strategy (frequently involving a user fees system or health insurance schemes, or both), development of a regulatory system or development of a sector–wide approach, or both (Senkubuge, Modisenyane, and Bishaw,., 2014; Frenk, 1994). Others are programmatic and set out what the health service does, for example, the development of a minimum health care package (Gidey *et al.*, 2019). The lower level reforms (at the so-called organizational and instrumental levels) deal with how to provide the best mix of resources to provide services, the development of a data base, human resources and other inputs for health care.

A district has been increasingly recognised as the organisational level where health policies and health sector reforms are interpreted and implemented for actuating effective health care (Morgan, 2001). Increasingly, it is acknowledged that giving responsibility to districts has the potential to bring health care decision making closer to communities and more open to heeding community priorities (Liwanag and Wyss, 2019). Decentralization of health services has become an almost ubiquitous reform and a decision to be taken at the systemic level. In the whole policy and reform process, success or failure depends on the ability of district health managers to interpret and implement what is required.

Decentralizing functions without being accompanied by reinforcement of lower level management capacity can lead to de facto abandonment by the state system of those functions. Initiatives to decentralize authority can fail by inadequate management strengthening at the district level (Cobos Muñoz *et al.*, 2017). Sumah, Baatiema, and Abimbola (2016) warn that decentralization to the district must not be taken “too far” in countries lacking effective local organizational structures and management skills. Collins and Green (1994) point out that decentralization can backfire in various ways, for example, by allowing locally dominant groups to snatch power and actually reduce popular participation, or by actually allowing central government to increase its powers through a centrally controlled local government system (Collins and Green, 1994).

This commentary article does not debate the different approaches to decentralization (Omar, 2002). However, it starts from the proposition that whatever a form of decentralization is adopted, districts need strengthening to be able to do their job and respond to challenges. It is assumed that they will require some ongoing support, both in terms of management expertise and in terms of technical expertise. The “district” looks very different in different countries in both organizational structure and size. The defining feature is that this is the organizational level closest to primary

health care and the community (Shaikh and Rabbani, 2004). A strong and well-functioning district health system provides; a network of primary health care facilities that deliver a comprehensive range of promotive, preventive and curative health care services to a defined population with active participation of the community and under the supervision of a district hospital and district health management team; a network of organizations that provides or makes arrangements to provide, equitable, comprehensive and integrated health services to a defined population and accountable clinical and economic outcomes and health status of the population that it serves.

District strengthening is a reform at the organizational level. Perhaps for this reason, it is not seen as so attractive or important as the higher level reforms like other essential but non –"sexy" areas such as material support for improving provision of water, electricity and physical communications in health services. District strengthening is not the area that donors rush to be seen supporting nor the area that reformers merits their urgent attention in more than a token way.

At the same time, Ministries of Health in most of the low-middle countries all too often have a love affair with decentralization, but want to retain centrally all their old powers over operational matters. They fail to trust the districts to deliver health care as well as to make the necessary investment to strengthen them (Collins *et al.*, 2007). This kind of decentralisation is unfortunate because the central ministries should rejoice in being freed of lower level considerations and excited about their new ability to focus on the systemic issues. Indeed, it constitutes a major error in thinking at the systemic level. This mistake is enough to render the whole worthless reform policy. On the side of districts, while there is a considerable anecdotal evidence that "learning by doing" is of vital importance in developing capacity to run services, it is also certain that newly autonomous district health teams need management strengthening (Collins *et al.*, 2007).

Ignoring this need means ignoring the interconnectedness that exists between reforms, and that must be considered if a reform policy is not to be only a piecemeal collection of activities no more and indeed perhaps much less – than the sum of its parts. The ability of districts to deliver services is basic to many, perhaps all, reforms to be meaningful. For example, the Sector Wide Approach (SWAp) might be developed at a central level, but its elaboration at a district level can bring together the various health stakeholders. This requires a certain capacity and maturity within the district health team (Hill, 2002;Peters, Paina, and Schleimann, 2012). The logic of SWAp would further demand that systems strengthening efforts should be directed not only at government district health services but at all health care providers though the resource implications render a daunting prospect. Similarly, a health financing policy might be elaborated centrally but must be applied locally, and the capacity must be there to achieve this. The opposition to direct delivery of health services is seen as an important potential reform activity, but the possibility for inter or intra contracting district will only exist if the district health management team (DHMT) can sustain the process. Improved community participation is impossible unless the district can achieve it (McNee, 2012).

This article discusses the process, challenges and opportunities of health systems development at the district level in low-middle income countries. It also analyses the kinds of strengthening that are essential to the development of sustainable district management. Furthermore, it

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renders the requirements required to develop and sustain district management capacity.

DISCUSSION

What are challenges and opportunities of health systems development at the district level?

The preceding discussion demonstrates the complexity of health management strengthening at the district level. In tackling the issue, it is of great importance to find a comprehensive and integrated approach. Comprehensive refers to covering a whole country or at least a whole state, region or province. Some pre-conditions for successful management strengthening at a district level may be crucially determined at higher organisational levels, which are clearly of crucial importance to district viability. Many of the pre-conditions will only be possible if the central level is itself strengthened (Olum, 2014). These must address the shortcomings of the health system in its ability to support district management and directly improve both management systems and capabilities. Issues of sustainability must also be addressed. The implication is that district strengthening will only work if attempted as part of a wider coherent programme of health sector reforms.

At the same time, there are great advantages and opportunities in developing a homogeneous approach to district strengthening for a whole country (Omar, 2002). If districts operate on similar systems, they can provide mutual support more easily. Particularly in the initial stages of work that requires a major effort to support districts in developing systems and in providing other support, there are huge economies of scale to be achieved. It may be that the central ministry will be able to train a core team of trainers who will be available to provide ongoing training to district teams as well as supervision and support to their work (Hauck *et al.*, 2019). This does not imply that all districts will progress at the same pace, or that strengthening has to happen in all simultaneously. However, it is hoped that all will move in the same direction.

On the other hand, integration in this context refers to the fact that there must be a plan for management strengthening activities, seen as part of a whole and located within any broader ongoing reforms. Many ministries of health in low-middle income countries have no plan as a basis for allocating resources or scheduling activities for training or management strengthening; while, others may have a formal training plan. This alone, however, misses the point that it is necessary to see district strengthening as a multi-faceted activity, tackling systems and capacity issues in a programmed manner (Hauck *et al.*, 2019). Furthermore, for each activity of district strengthening, there needs to be some assurance of funding for implementation and later support and reinforcement. As pointed out by some authors, all too often these do not happen (Jaeger *et al.*, 2018; Afrizal *et al.*, 2019). Thought must, therefore, be given as to what approach to management learning is needed and then how to put that into operation. It is probably fair to say that current efforts on management strengthening have, in most countries, been patchy at best for some reasons.

Partial approaches

In practice, both governments and donors have often pursued partial solutions. For example, both may agree to allow a situation where some districts may be offered help from a donor, others not. Those offered support might receive it from different donors, pursuing a different approach. Indeed, most of us will have

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witnessed the sight of more than one donor in a single district where each donor resolutely pursues their own approach. The situation may be well-compounded by the presence of various non-governmental organisations (NGOs), which pursue their own path. Furthermore, many donors and NGOs come in with pre-conceived ideas about what is the magic bullet in district strengthening. They ignore the fact that often, a team exists and need to improve some capabilities, but somehow, they have been offering a service. Possibly, they will develop interventions that are inconsistent with the general socio-economic conditions and the cultural context. Some proposed approaches may even be inconsistent with the legal system in the country. Only too often, the resources available are wholly inadequate. The preceding discussion has adequately illustrated the scale and breadth of support required.

Partial approaches arise in other ways too. There seems to be a continued failure to learn the lesson of history that “model” or “pilot” district experiments are of dubious value. This could occur for some reasons. First, improving the performance of districts must include change and strengthening at the central level as well as at the district itself, but this rarely happens in an experiment with one or two districts (and arguably should not). Second, pilot experiments are notoriously difficult to replicate on a general scale; the most obvious problem at the stage of replication is that people wake up to the relatively intense use of resources in the pilot and realize that it cannot be afforded as a more general model.

Top-down approaches

Back in the 1970s, the Alma Ata Declaration saw a flowering of the concept of an integrated approach to primary health care that would take account of the inter–sectoral nature of ill–health and work to bring a positive approach to the struggle for good health for all. A little later, doubts were being expressed that this new approach was too expensive, but it was the basic actions proposed. Guardians and defendants of Alma Ata rose up to the defense of the original idea, and it seemed at that time, that debate had fairly conclusively knocked ideas of a selective or second–best approach to primary health care, well out of the window (Unger and Killingsworth, 1986). It is a sad reflection on the ability of the academic world to influence policy that things are in practice little changed and on how persistent these narrow and technocratic ideas have proved to be (Starling *et al.*, 2002). The management burden of vertical programmes on top of trying to run a simple health service in a district is at least disruptive and has major implications on capacity and efficiency.

A related problem arises from the current fashion in developing Essential Health Packages (EHPs) for Universal Health Coverage (UHC). EHPs should be a great idea and the first pillar in district support as it is intended to define what resources are needed to provide an integrated set of health services appropriate to each level of care within a health service. Thus, it would be appropriate to expect the EHP to define the staffing levels and combinations for each organizational level and the levels of medical technology use and acquisition appropriate at each level. Thus, the EHP should set standards like what a few countries have done to be an invaluable yardstick against which districts can measure what they can offer.

In practice, however, more often EHPs are structured to prescribe that the primary level of care should treat ten diseases, a mere return to the selective approach. It is important to stress that any attempt to limit the EHP in this way is likely

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to be detrimental to community confidence in the health service, staff motivation, and actual results. Such top-down approaches limit districts rather than acting as an enabling tool and as such working against support.

International fashions are working further in creating new constraints. For example, the newly established global health fund that focuses on three major diseases that burden many poor countries, i.e. HIV/AIDS, malaria and TB, is intended to draw attention to and seriously address the problems (Selgelid, 2007; Brugha and Walt, 2001). However, due to the time-limit to the international commitment of the new alliance, poor countries, which alter their drug policies to incorporate expensive new drugs, could be left with additional unsustainable costs in the future. The fund was claimed to address the three diseases in ways that will contribute to strengthening health systems. Not all strategies to fight the three targeted diseases rely on health services for their implementation, i.e. promoting use of condoms or impregnated bed nets, but most do. Thus, case management is a particularly large commitment. A study shows that diverting resources from other activities to disease-specific control programmes does indeed have the potential to weaken fragile health systems (Kruk *et al.*, 2018). On the other hand, a study in Chad and Cameroon to assess Global Alliance for Vaccines and Immunization (GAVI) suggests that the delayed disbursement of funds, staff motivation and the lack of resources for doing routine and supervisory visits remain as major obstacles to strengthening the health system to carryout routine diagnostic, curative and preventive services (Dansereau *et al.*, 2017).

What kinds of strengthening are essential to the development of sustainable district management?

Strengthening is likely necessary to ensure the district health system is viable. Of course, the form that decentralization takes in different countries will determine the precise capabilities the decentralized District Health Management Team (DHMT) will require. In some decentralized systems, for example, in Tanzania, districts may be responsible for running services, but have no responsibility for human resource management or procurement. In a devolved system, such as in Brazil, Pakistan and South Africa, these functions may fall to the provincial and local government officials. However, this article does not deal with questions of specialist expertise. The areas discussed in what follows are ones that the author believes will be needed in some degree by any DHMT as generic requirements. These will be examined in turn, asking what is needed to develop and strengthen district health management.

Pivotal to the effective running of health services is a team at a district level, working together to ensure services are delivered, sub–district facilities are supervised and so on. This implies that there will be open, transparent decision-making and that the whole team will have a say in decisions. While, individuals will have specific duties and responsibilities (Bonenberger *et al.*, 2015).

It is obvious that team work is essential for the effective running of a district. Doubtless this view will find its critics, but it is the case that in most of low and middle income countries, a DHMT exists. It is also the case that often it is a team in little more than name only.

Lack of a team approach to working may have complex roots. In part, it may be that the management culture in the whole health service and more widely weighs

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against teamwork. Working conditions may be such that there is no incentive for staff to work together. Indeed, they may gain more by competing and playing one and another off against their bosses. Then, if staff have only ever experienced working under autocratic bosses who do not bother to explain or discuss anything, but simply give orders, they will find it hard to act differently. The first of these is possible to change by careful thinking about the structure and nature of incentives, and team-work training. The second is possible to change though it may be necessary to begin the change with facilitators coming completely outside the prevailing organizational culture. It may start with training for those trainers who will in turn train the district health officers or the managers and administrators, or both. However, the change will need to be followed through with consideration of the structure of delegation, staff appraisal, punishment and so on. If these left unmodified, they may fit the old system and constantly lead back to it.

One fairly standard feature of reform packages in different low-middle income countries has been in recognition that health services frequently need to take stock of the way they treat service users and increase responsiveness to, as well as collaboration with, the local community. The team should be able to develop appropriate means for the community to express community priorities and concerns for the health services. They should be responsive to offers of community participation in any aspects of the work (Doherty *et al.*, 2018).

This item is also problematic. One cannot just tell people, in a simple lesson, how to be responsive to local communities. Most health workers are not trained to listen to lay people, other than to hear their symptoms of illness. They are not trained to respect communities in their expression of priorities for a health service. Indeed, it is argued both biomedical training and the hierarchical way in which medicine is practiced work directly against participatory approaches (Morgan, 2001).

A common development today is that health workers receive training, not in how to discuss or consult with communities, but rather how to assess user views through research. In a way, this is to distance the health team, not bring it nearer to the people. As some researchers are coming to conclude, time and resources spent on training staff and conducting interviews and focus group discussions may well be better directed towards training staff in engaging directly with communities in the consideration of their needs and priorities (Gishu *et al.*, 2019).

One can envisage training health workers to listen better. This will, however, need to go along with several things; training health workers to help communities to express themselves more effectively; aiding them in creating some kinds of forum for joint discussion; and having skills to maintain that forum (Haver *et al.*, 2015). Thus, only training will not suffice; there will also be a need for local systems development and perhaps creation of new local organizational structures or review of existing ones. On the whole, insufficient attention will have been given to the need for organizational development within statutory health care and other organizations if they are to embrace a partnership approach to services.

Nevertheless, two interesting examples in the late 90s might be mentioned here. One is the Sheikupura Pilot Project in Pakistan, which has been studied in terms of its incomplete success (Tareen and Omar, 1998). Another is from the UK, where a group has been working to develop and try out the Strategic Action Plan for Healthy Communities (SAPHC) Model, which is essentially an approach to

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analyzing the need for capacity building in organizations wishing to engage more effectively with the public (Pickin *et al.*, 2002). Unless consideration is given to the relationship between central planning and local needs, flexibility to consider the latter will not exist.

Next, this article would argue that the team needs to be capable of thinking strategically about the whole district. The degree to which this is important does depend on the modalities of decentralization. One would stress that some capacity to think strategically is needed in any district where a degree of decentralization has occurred. In some situations, devolution could lead to a situation whereby even some systemic issues (concerning equity for patients and or staff) may have to be handled at the district level.

It is important to have the capacity to think in broad terms about the overall health care being offered in the district, whether the approach optimizes use of resources, or whether future directions might be in some different ways. The team should be able to identify questions about existing health service delivery and to develop answers leading to change for improved practice. The team should also be able to plan and budget from broad strategies to making decisions about priority use of resources, as well as being able to cost activities and turn these into a budget.

The above needs deal with ability to observe, collect data, draw conclusions and ask questions. Many educational cultures around the world do not give priority to this range of skills at all. In many countries, health workers have reached a status of being relatively well-educated without having been challenged to draw their own conclusions from a set of observations. It is true they may have learned the narrow use of diagnostic skills, but diagnostic skills can be taught as use of memorized information with a little room for interpretation or creativity. Nor does such narrow questioning accustom people to thinking about the implications of their questions and observations for change. An interesting example comes from Haryana State in India, where data on health service delivery were analyzed locally and thus enabled planners to identify local needs and lobby for more resources at a higher level (Sharma, Prinja, and Aggarwal, 2017).

Analytical skills are difficult to impart, and are again only worth imparting in a management environment where they are of use. Only too often, we see health systems (and other systems, of course) where innovation and management improvements are not rewarded. Keeping quiet and maintaining the status-quo are what is rewarded in old-fashioned administrative systems, but such systems are hopelessly inadequate for running a district. If we can see some hopes of moving forward to a management system based on a learning process approach, we can help people to ask questions and teach them how to tackle issues and solve problems (Cox, 2001). Once officers see that change is possible, they will often be receptive to this.

Planning and budgeting depend on methods that can be taught, and systems can be imparted to districts through training and documentation. Arguably however, good planning (and there follows, budgeting) depends on the above mentioned processes being effective. Foster et al. (2000) make an interesting point about planning; they suggest that part of the capacity problem in health care may actually be a reflection of over-ambitious planning. Citing the example of Tanzania, they comment that “a culture of decision by consensus” makes it hard for anyone to say no to anything, and thus plans become

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over-ambitious (Foster *et al.*, 2000). It is relatively easy to create a "wish-list" of activities and achievements. What requires real determination and dedicated efforts at consensus building is the setting of a focused list of priorities. It may be that formal methods support the transparent setting of priorities in a politically acceptable way (Thunhurst, 2003). This is the heart of the planning process in the famous words of late Julius Nyerere, "to plan is to choose".

Last but by no means least, planning involves implementation. This requires management and monitoring systems, as well as skills in delegation of work, conducting of meetings, and so on. A priority will be to ensure that management systems are in place. Much is required of the DHMT.

It is difficult to imagine a situation in which any degree of decentralization has taken place, that does not demand some financial management responsibility from the DHMT. The team needs to be able to handle resources responsibly and account for their use.

Accountability for use of resources depends on financial management skills, but these must go hand in hand with an effective and transparent system and with appropriate safeguards against corruption. However, Foster *et al.* (2000) suggest that one may only be able to strengthen district financial management systems by taking the risk of using them. Of course, this would need to go with some regular monitoring, evaluation and control (Foster *et al.*, 2000).

DHMTs need to be able to monitor quality of care and provide supervision. These aspects are where adequate work from the centre can provide districts with good, simple and workable systems for quality assurance (including standards definition) and supervisory systems (Bradley *et al.*, 2013). There will, however, be an ongoing need for support for districts in these aspects including provision for training (whether as first level courses or as in-service training).

These remaining items on the list are features that do not necessarily exist at all, nor have yet been encouraged in districts in many parts of low-middle income countries. Inter-sectoral collaboration has of course been on the World Health Organization's (WHO) agenda since the Alma-Ata declaration on Primary Health Care in 1978, but the practical manifestations of the idea are still not numerous (Adeleye and Ofili, 2010). However, it is clear that the potential for improving on intersectoral collaboration is probably much enhanced in a decentralized system. Collaboration with other health providers is an obvious step for district health management to take in today's world, where few countries envisage only provision of services as the way ahead. In many situations, a prerequisite for this would be the need for development of a system for the registration of NGOs (at both central and district levels) and the regulation of their activity. Lastly, a new demand on districts may be that management will need increasingly to be able to seek help for itself by commissioning services (Balogh, 1996; Checkland *et al.*, 2018). In each case, the district needs to know about how one must specify what is required and the terms on which it might be bought, how to ask for estimates, and so on. New demands necessitate new capabilities. In all the last three items, the capability that is key to success is probably communication (Perrot, Carrin, and Sergent, 1997).

What is needed to develop and sustain management capacity in districts?

While strengthening district systems and capabilities might be seen as a one-off investment, support to districts needs to be ongoing. Support is not only that provided

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directly, but also for the creation of the necessary conditions for effective functioning of districts. Some of these are likely to be determined at a higher organizational level, perhaps at the central ministry level, or central government level.

Conditions for effective functioning include, for example, a degree of political stability. This is needed to ensure that the goals are not altered constantly and to allow ongoing development of a strategic vision, but only central government can offer this. Conditions in the districts themselves are obviously also of great importance. There are complex issues concerning the transfer of power to the districts, the quality of leadership in local government if local government exists, and the seriousness with which central government has promoted decentralization.

It may be, however, that local government will need education about the way the health sector works. Tang and Bloom (2000) describe the most interesting example of the way in which devolution has led to a reduction in the quality of health services in China. One of the main purposes of devolution is to encourage township governments to increase their funding. However, the government's grant in total health care decreased, and health centre managers reported that devolution led to increased financial insecurity. Furthermore, township governments asked local public institutions to do additional non-health related tasks. The government then threatened to withhold its health center grant unless these tasks were carried out. The health center manager had to comply with the detriment of service provision.

Districts also need to have some confidence that suitably qualified staff will be available when vacancies need to be filled. In part, this is to do with production of newly trained staff, but it also has to do with terms and conditions of service (Martineau *et al.*, 2018). The latter affects both staff performance and ability to work in a team, and also staff retention. There are potentially strong arguments for national uniformity in human resource management, just as there are strong arguments for national definition of accepted standards of health care. However, there is an important set of considerations here concerning decision space (Roman, Cleary, and McIntyre, 2017). The more the centre controls the way in which staff are treated, hired and fired, the less flexibility does the district have in its overall management. However, the centre then has a responsibility for ensuring that the interests of districts are served in the way things are done. On the other hand, if districts are given autonomy in the way they treat staff, the centre may need to retain some means of intervention to ensure equity in the distribution of human resources between districts.

A bottom-line pre-requisite of sustainability is the assurance of continued availability of resources to the district team so as to make planning possible. Crucially, there must be not only resources available for district operations, but also resources to support and strengthen them unless central and provincial government levels are prepared to set aside or solicit such resources and develop support arrangements appropriate to the extent and form of decentralization, management strengthening is an idle talk (Collins, Omar and Tarin, 2002).

At the district level, the priority in strengthening management will be to ensure that there are well-developed district management systems in place. These should involve reproducible procedures, transparency and accountability. They should be backed by a well-developed collective memory, whereby the procedures themselves are clearly documented, and there are

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organized records that are routinely maintained. Let us not take this point too lightly. Often, there is little understanding of what is involved in the development, introduction and adoption of new systems. Management systems that work are unlikely to be available "off the peg"; one cannot assume that what works in India will go down well in Somalia, for instance. New systems have to be tried out in a particular social, political and economic context.

If change is brought in from outside, all too often the innovators see themselves as being helpful by making a mere technical innovation. Yet to the staff having to implement the use of the new system, this may not seem like a mere technical innovation; rather, it is an organizational change, an important change in the way they work (Bamberger *et al*., 2012; Mathauer and Imhoff, 2006). Such change needs to be introduced in a managed way with due consideration of the impact on individuals and their existing ways of doing things.

It is also important to consider that not everyone wants management systems to improve. Better management systems mean better accountability and much greater transparency. These will not be seen as positive goals by all. If the intention is to make them to become positive goals, then considerable attention will have to be given both to advocacy (for the new system) and also review of staff incentives and appraisal systems.

Alongside systems, the need is for a team with a relevant mix of capabilities, knowledge and experience (Prashanth *et al.*, 2014). As noted earlier, there needs to be a management culture that sees innovation and improvement as a positive aim is required (Walker, Damanpour, and Devece, 2010). The range of activities that might support these things includes alongside systems strengthening, a whole range of learning opportunities, such as a formal training. In what follows, the article discusses issues concerning training at some length. It is important to stress the fact training is not seen as more important than systems development. The two are if anything, complementary requirements. However, individual performance may not necessarily improve as a result of skill and technology transfer through training activities (Irimu *et al.*, 2014). Training is discussed because many people leap into perfunctory training activities in the name of district strengthening without acknowledging the problematic nature of some aspects of training.

It is a statutory fact that staff who benefit most from training especially long academic courses are the first to be lost to the government health sector. Where possible therefore, every effort should be made to ensure that district health management teams are well-defined, and jobs are described in such a way that adequately prepared professionals are recruited. In particular, more willingness to recruit professionals with management training and experience would provide an easier route to increasing capability than endless short courses. Perhaps if staff have to help themselves more to find ways to fund training, but then were rewarded with worthwhile jobs and good salaries, things would improve in this respect. It is possible that donors should be more open to salary support as a form of aid. This would, of course, have to go along with performance assessment.

When people think about district strengthening, they often think about formal training, and this certainly has its place. For instance, there may be special training opportunities created because of decentralization and the need for new skills. This might demand in-service training for the whole teams or particular officers in the teams. One or more team members might actually mount some such

training for their colleagues. However, there are dangers. In many low-middle income countries today, a short-term training has become the scourge of district health work. As donors continue to ply short course and workshop participants with allowances, district staff are frequently lured away from the workplace for an unacceptably high proportion of their time. Not for nothing did the former Ugandan Minister of Health refer to the District Missing Officer. Various agencies compete to provide a training linked to different vertical programmes, new initiatives and so on. Rarely is there any consideration given to the overall effect.

One approach to this problem would be the development at the central level, of a system and capacity to control and regulate the training being offered to districts. The objective would be first to reduce duplication and ensure that training is at a level that is compatible with reliable and adequate service delivery. This central regulation would have to be strong enough to regulate competition between donors, daily allowances and so on. In the longer term, the responsible unit should be accountable for the continuous updates of first-level curricula for health professionals so that training, including some management training, is integrated and delivered in the most efficient way possible.

Training is, however, just one kind of learning opportunities. Other forms of learning take place through support and advice. One approach would involve having expert advisers to work alongside the district team over a period of time in a combination of systems development and action learning. Other learning opportunities might include advice offered during supervision or management audit, learning from each other, peer review between neighboring district teams based on structured observation of performance on the job. Yet, more important possibilities include informal inter-district support and exchange of ideas.

One should not overlook the potential support to be offered by the printed word or the computer. These may seem weak forms of support, but they have a great advantage that they can back up self-supported learning and become the most effective of all means of learning. A district management manual exists in some countries, and this can be an invaluable resource. It provides an essential reference to district procedures, to important reference materials likely to be required by the district team, and to perhaps some information on relevant legislation. The centre can help to produce such manuals, but it would be hoped that the district would wish to also incorporate local materials. The manual might also provide guidance to support the district team in developing its own policies in specific areas, along lines suggested elsewhere (Heerdegen *et al.*, 2020).

A library is also valuable at least to provide some essential references, especially in places where internet is not reliable (Mouhouelo *et al.*, 2006). Books (and tapes and film if equipment is available) can be circulated around the district to maximize their use. The central ministry may be able to lend more books on a rotating basis. If the central ministry is so organized and if districts have computers, the possibility also will exist to offer an online information service to districts, as well as, of course, to allow Internet access.

The complementary approach to all of the above is to work on ways to encourage district staff to want to improve themselves. Important and essential means of motivating staff to improve lies in the development of a good monitoring system for district performance Reeve, Humphreys, and Wakerman, 2015). Not only should such a system be developed, but also careful thought needs to be given

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to its use. Of course, monitoring is not only carried out to track staff performance. However, this is one of its uses and a considerable potential to improve the accountability of district staff. One simple way to use the results of district monitoring (given that in many countries, a staff appraisal system as such simply does not exist) would be to base an assessment of team performance on it. If the team as a whole performed well, there may be a scope for some sort of rewards for them. Provided the rewards were substantial enough to be meaningful, such an approach would have the virtues of being simple and also of encouraging teamwork. This is not the only approach, however, and one might consider, in an appropriate setting, a more fully developed staff appraisal system for individuals to be desirable.

It is also important to consider to whom monitoring information should go and who should have a say in judging performance. An obvious answer is central government or, in a devolved system, the local government. However, alternatives should be carefully considered. One possibility would be peer-review, perhaps between analogous officers in different districts, not between officers who must relate together on a daily basis. Another possibility is to make the officers (or the team) increasingly more accountable to users and to representatives of civil society.

In the context of low-middle income countries, district management strengthening would to a large extent depend on well-equipped District Health Management Teams (DHMTs), who work at the interface between community and the health system. Figure 1 illustrates the hierarchical relationship of capacity development needs with human resources, i.e., DHMT (Cometto *et al.*, 2020).

This requires appropriate governance and leadership that ensure sound policy (system level), clarity of roles and responsibilities that lead to effective accountability, supervision and management (organization level), which ultimately results in competent and motivated DHMT having expertise and skills (individual level) to effectively manage the districts.

Efforts need to be made to replicate adaptable practices that may exist in other districts with good performance. Considering the urgency of the situation, it is desirable to undertake a rapid assessment of performance by DHMT to identify model districts to draw lessons on the best practices that can be shared with other districts.

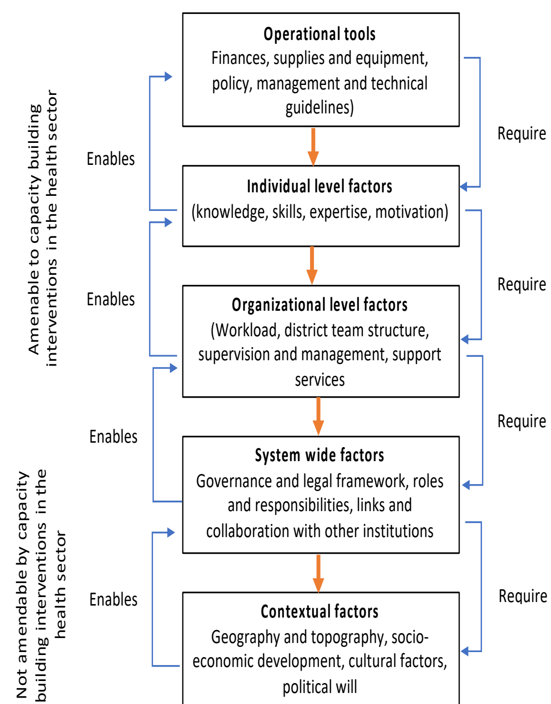

Figure 1. Hierarchical Relationship of Effective District Management Strengthening. Adapted from Cometto, et. Al (2020, p12)

Additional requirements for management strengthening of district health systems include political aspects and financial considerations that require working and collaborating with other non-

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health sectors and local community. These underscore the importance of strong leadership of the DHMT to mobilize the necessary support and resources to develop and sustain the capacity of the district to provide better health services consistent with the goals of Universal Health Coverage.

CONCLUSION

In conclusion, this article demonstrated the need to consider and involve health stakeholders in all efforts aimed to enhance the initiatives regarding district management strengthening. As a priority, all efforts should be seeked to identify resources to undertake it. At stake are both health systems and the community's health.

In part, governments in low-middle income countries must take responsibility for the neglect of district strengthening. Therefore, ministries of health need to champion and take a lead in managing the kind of management strengthening approach needed. Perhaps the first job required is to create a "vision statement" or "capacity building plan" that is comprehensive and integrated.

Undoubtedly, a plan for district capacity building is developed and later followed by greater donor coordination than has been possible in the past. If all the funding that currently gets spent on piecemeal activities is channeled into joint activities that are planned collaboratively, the results might be impressive. For example, in Malawi, such joint activities have taken place in several areas of work. In planning and budgeting, several donors have made contributions of varying sizes to developing the district process and providing its ongoing support. Similarly, in Nepal, a number of donors have been working with the government to develop medium-term strategic plan for health at the central level and bottom-up planning exercise at the regional and district level. Although such efforts are labor-intensive for multilateral and bilateral donors including NGOs, all must agree the approach taken. However, these will doubtless contribute towards long term sustainability of district management development efforts.

On the other hand, the article has identified the need and importance to look beyond central government and donors in seeking resources for district health management strengthening in achieving Sustainable Development Goals (SDGs). One source of funds and support in a decentralized system could be from local government. Often local governments are keen to invest in physical facilities. Ideas and policies will need to be developed whereby this is only allowed if the local government concerned simultaneously puts aside funding for training the number of new staff that would be needed and demonstrates its budgetary commitment to meeting all new recurrent cost implications.

Districts need to be encouraged to meet, engage, consult and involve with other health care providers and wider groups of stakeholders. Likewise, associations of religious health providers might be approached with a view to further improving cost-effectiveness by joint efforts in district strengthening.

CONFLICT OF INTEREST

The authors state that there is no conflict of interest for this article.

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ORIGINAL RESEARCH

THE ANALYSIS OF VILLAGE MIDWIFE PERFORMANCE IN REDUCING MATERNAL AND INFANT MORTALITY RATE

Analisis Kinerja Bidan Desa dalam Menurunkan Angka Kematian Ibu dan Bayi

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ABSTRACT

Background: The most essential aspect to reduce the number of maternal and newborn mortality is midwife competence. Midwives have a great role to be able to handle variety of health services (antepartum, intrapartum, and postpartum) to avoid or decrease the maternal and infant mortality rate. Performance of health workers, particularly midwives, is the most crucial in affecting the quality and quantity of midwives' services to enhance the national health development.
Aim: This study analyzed factors affecting village midwife performance for reducing maternal and infant mortality in seek for achieving *Bone Bolango cemerlang* or bright Bone Balango as the vision of Bone Bolango District in 2021.
Methods: This study was an analytical survey with a cross-sectional approach. It was conducted from March to June 2019 in the working area of Bone Bolango District Health Office. There were 227 people from 19 primary healthcare centers as the population, and the sample size was 227 selected by using the total sampling technique. The data were collected by distributing questionnaires to the respondents and using secondary data. The data processing was done through chi-square test and multiple logistic regression with backward wald method.
Results: Midwife performance in Bone Bolango District was assessed based on several variables. Most of them were ≥ 25 years old (80.6%); worked for ≥ five years (58,6%); mostly had not participated in any normal childbirth care training (76.7%); had a good competence (96.5%); had good resources/equipment (79.7%); had a good reward (92.5%); had a good attitude (76.2%); had a good motivation (90.7%). There were 12 maternal mortalities from 2017 to 2019 handled by only 11 midwives (4.8%). On the other hand, infant mortality rate (IMR) reached 25 cases in the same years; of 227 midwives, these cases were handled by only 21 midwives (9.3%).
Conclusion: A midwife as a part of the health workers has an important role to increase the quality of maternal and child well-being program. Some variables that became indicators of midwife performance and had an effect on reducing the MMR and IMR included work period, reward, and motivation. This study recommends that all midwives have to be provided with a normal childbirth care training in the working area and increased rewards in the process of labor and delivery.

Keywords: midwives, performance, maternal mortality rate, infant mortality rate.

ABSTRAK

Latar Belakang: *Aspek terpenting untuk menurunkan angka kematian ibu dan bayi baru lahir adalah kemampuan bidan. Peran bidan sangat besar untuk dapat menangani pelayanan kesehatan yang beragam (antepartum, intrapartum, dan nifas) untuk menghindari atau menurunkan angka kematian ibu dan bayi. Kinerja tenaga kesehatan menjadi unsur yang sangat penting dalam upaya memelihara dan meningkatkan pembangunan nasional bidang kesehatan tak terkecuali bidan desa. Kinerja dapat mempengaruhi kualitas dan kuantitas pelayanan bidan.*
Tujuan: *Penelitian ini menganalisis faktor-faktor yang berpengaruh terhadap kinerja bidan desa dalam menurunkan angka kematian ibu dan angka kematian bayi menuju Bone Bolango cemerlang sebagai visi Kabupaten Bone Bolango tahun 2021.*
Metode: *Penelitian ini merupakan survei analitik dengan pendekatan penelitian potong lintang dan dilaksanakan dari Maret hingga Juni 2019 di wilayah kerja Dinas Kesehatan Kabupaten Bone Bolango. Populasi dalam penelitian ini adalah 227 bidan di Kabupaten Bone Bolango yang tersebar di 19 puskesmas, dan besar sampel yang digunakan yaitu 227 bidan dipilih menggunakan teknik total sampling. Pengumpulan data dilakukan dengan membagikan kuesioner serta menggunakan data sekunder. Pengolahan data dilakukan dengan uji chi square dan regresi logistik berganda dengan metode backward wald.*
Hasil: *Kinerja bidan di Kabupaten Bone Bolango dinilai berdasarkan beberapa variabel. Sebagian besar berumur ≥ 25 tahun (80,6%), lama kerja ≥ 5 tahun (58,6%), belum mengikuti pelatihan Asuhan Persalinan Normal (APN) (76,7%), memiliki kemampuan bidan yang baik (96,5%), sumber daya/peralatan yang baik (79,7%), imbalan yang baik (92,5%), sikap yang baik (76,2%), dan motivasi yang baik (90,7%). Ada sebanyak 12 kasus kematian ibu*

selama tahun 2017 – 2019 yang ditangani oleh hanya 11 bidan (4,8%) dan jumlah kematian bayi sebanyak 25 kasus pada tahun yang sama yang ditangani oleh hanya 21 bidan (9,3%) dari total 227 responden.
Kesimpulan: *Bidan sebagai bagian dari petugas kesehatan berperan penting dalam program kesehatan ibu dan anak (KIA). Beberapa variabel yang menjadi indikator kinerja bidan dan yang mempengaruhi AKI dan AKB yaitu lama kerja bidan, imbalan dan motivasi. Penelitian ini menyarakankan seluruh bidan mendapatkan pelatihan APN yang ada di Kabupaten Bone Bolango dan kenaikan imbalan bidan dalam melaksanakan persalinan.*

Kata kunci*: bidan, kinerja, angka kematian ibu, angka kematian bayi.*

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INTRODUCTION

The infant mortality rate was identified to be a global issue. There were 65 deaths per 1000 live births in 1990, but 29 deaths per 1000 live births in 2017. From the period of 1990-2017, the rate decreased from 8.8 to 4.1 million (World Health Organization, 2020). About 303.000 women died during pregnancy and childbirth in 2015. In the next year, the number of maternal mortality increased significantly and caused deaths in reproductive women with HIV/AIDS. As many as 95% maternal mortalities occur to low-income and destitute countries (World Health Organization, 2019).

In Indonesia, the number of Maternal Mortality Rate (MMR) remains high. In 2016, 305 maternal deaths per 100,000 live births were reported (Indonesian Ministry of Health, 2018). Based on the preliminary research on the profile of Central Java Provincial Health Office 2017, in Semarang and Kendal District, maternal services were performed by midwives in healthcare facilities and thus supported to decrease the MMR (Central Java Health Office, 2018). In 2017, the MMR in Central Java exceeded 90% of SDGs (Erawati, Rinayanti and Wahyuning, 2020).

Midwife competence is the most crucial to decrease the number of maternal and newborn mortality. Midwives have a great role to be able to handle variety of health services (antepartum, intrapartum, and postpartum) to avoid or decrease the Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR). Performance of health workers, particularly midwives, is the most vital in enhancing the national health development since it can affect the quality and quantity of midwifery services (Sartorius and Sartorius, 2014; Araujo, Weraman and Littik, 2019; Ibrahim, Dalimunthe and Yustina, 2020).

Health is a basic human right that serves as one of the factors contributing to the quality of human resources in order that quality of health care improves. Health development success depends on a life expectancy, which is also strongly defined by other health indicators, namely IMR, Under-Five Mortality Rate (U5MR), MMR, and Crude Death Rate (CDR). Midwives are responsible to provide primary maternal healthcare at the most vulnerable time of life cycle. Almost every mother's pregnancy and delivery process follows midwife's guidance (Gusti, Tamtomo and Murti, 2018).

Maternal mortality rate (MMR) and infant mortality rate (IMR) are two indicators of health development in the National Medium Term Development Plan 2015-2019 and Sustainable Development Goals (SDGs) in 2015-2030. According to the results of the 2015 Inter-Censal Population Survey (SUPAS), there were 305 maternal deaths per 100,000 live births in Indonesia, which was still quite high compared to the target of SDGs which by 2030 can reach below 70 per 100,000 live births. Factors that cause maternal and infant deaths include direct obstetric causes, such as bleeding and eclampsia, and indirect causes, such as

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malaria, HIV, and anaemia, which may be worsened during pregnancy. The term "pregnancy-related death" includes all deaths during pregnancy, labor, and post-partum period, regardless of its causes (Hanson *et al.*, 2015).

Strategies to reduce maternal mortality have involved multiple approaches, which the main goal is to improve access to a skilled attendant and emergency obstetric care. Although it seems obvious that access to professional care during childbirth should reduce maternal mortality, the evidence from observational studies was difficult to interpret the effect of a skilled health worker at birth as women with complications were more likely to access a skilled health worker (Hanson *et al.*, 2015).

Some important factorcs that might reduce the maternal mortality involved the roles of doctors in primary healthcare centers and village practice unit with the percentage of contribution of up to 8.6% and 6.9% respectively. Additionally, distance between hospital and home became the other factor which contributed up to 5.9% (Reinke, Supriyatiningsih and Haier, 2017). The performance of health workers, particularly midwives, becomes the most crucial element for enhancing the national health development. A study on employee competence and performance clearly explained that organizational work environment highly supports individuals to achieve targets at work. Individual performance represents quality and quantity of work performance based on the predetermined work standards. Employees will perform a good achievement if they have strong individual attributes, work efforts, and organizational supports (Mangkunegara, 2011).

A preliminary study was conducted in December 2018 by interviewing the Family Health Section or *Seksi Kesehatan Keluarga (Kesga).* It indicated that the frequency of health workers' assistance in the childbirth process was below the minimum service standard determined by the Bone Bolango District Health Office. The interview with some midwives was carried out in January 2019 to confirm the assumption regarding incompetent performance of village midwives.

Some problems reported included inadequate abilities and experiences of the midwives, causing women in labor to choose the traditional birth attendant who are more experienced and protective to accompany them; the quality of the midwives regarding knowledge and skills is varied from each other. They mostly have not participated in any training of emergency service administration for saving somone's life, e.g., pregnant women, women in labor, and newborns decline in work passion and satisfaction being unfriendly, frigid, and impolite in giving childbirth assistance; their incompatible workloads with the primary duties and functions.

The purpose of this study is to investigate the factors influencing village midwives performances in reducing MMR and IMR towards *Bone Bolango Cemerlang* (Bright Bone Bolango) 2021.

METHOD

This study was analytic survey research using a cross-sectional approach to investigate the relationship between performance of midwives and reduction of MMR and IMR. It was conducted from March to June 2019 in the working area of Bone Bolango District Health Office. As many as 227 respondents from 19 primary healthcare centers participated as the research population and sample which was selected by using the total sampling technique. All population of the midwives became the research samples which were considered eligible if they were midwives who perform midwifery services. The exposure factor in this research was

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midwife performance, while the predictor factor was maternal mortality and infant mortality.

This study has obtained an ethical approval by the Health Research Ethics Commission of Health Polytechnic of Ministry of Health Gorontalo No. LB.01.01/KEPK/05/2019. All respondents have been informed about the aim and method of this study and have signed a consent form.

The independent variables of this study were age, work period, training, competence, resources, reward, attitude, and motivation. While, the dependent variables included MMR and IMR. Questionnaire was distributed to the respondents, and secondary data were in use to collect data, which were then processed with the independent t-test.

RESULTS AND DISCUSSION

Table 1 presents the analysis of village midwife performance related to the mother mortality. Few midwives were aged 25 years (6%), had worked for ≥ 5 years (7.5%), and had been trained (9.4%). Only some had good competence (5%), adequate facility (6.5%), achievement (17.6%), attitude (9.3%), and motivation (19.0%).

In respect with the infant mortality, Table 2 shows few midwives were aged ≥ 25 years (9.8%), had a work period of ≥ 5 years (12.8%), and had participated in training (11.3%). Only few of them showed good competence (9.6%), adequate facility (13%), achievement (23.5%), attitude (13%), and motivation (23.8%).

Results of the multiple logistic regression test revealed that three variables including work period (P-value<.058), reward (P-value<.035), and motivation (P-value<.038) had a significant effect on the MMR and IMR in Bone Bolango District. As the analysis results showed, the coefficient B (1.385) of the reward variable had the highest value among the other two variables, i.e., work period and motivation. Therefore, the variable of reward dominantly affected the MMR and IMR in Bone Bolango District.

From the chi-square test, age variable did not affect the MMR (P-value=.095) and IMR (P-value=.535). However, a study conducted by Lamere (2013) on midwife performance in antenatal care services in all primary healthcare centers of Gowa District indicated that the older the midwives, the better their performance in the service. The older age implies that the midwives had more experiences in improving maternal, newborn, child and adolescent health. Consequentially, they learned by practice, and this is considerably impactful on their performance.

Table 1. The Analysis of Village Midwive Performance in Reducing Maternal Mortality.

Variable	Midwives with Maternal Mortality		Midwives with No Maternal Mortality		Total	
	n	%	n	%	n	%
Age (years)						
< 25	0	0.0	44	100.0	44	100
≥ 25	11	6.0	172	94.0	183	100
Work Period (years)						
< 5	1	1.1	93	98.9	94	100
≥ 5	10	7.5	123	92.5	133	100

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Variable	Midwives with Maternal Mortality		Midwives with No Maternal Mortality		Total	
	n	%	n	%	n	%
Participation in Normal Childbirth Care Training						
Not yet	6	3.4	268	96.6	174	100
Yes	5	9.4	48	90.6	53	100
MidwifeCompetence						
Moderate	0	0.0	8	100.0	8	100
Good	11	5.0	208	95.0	219	100
Resources						
Moderate	3	6.5	43	93.5	46	100
Good	8	4.4	173	95.6	181	100
Reward						
Moderate	3	17.6	14	82.4	17	100
Good	8	3.8	202	96.2	210	100
Attitude						
Moderate	5	9.3	49	90.7	54	100
Good	6	3.5	167	96.5	173	100
Motivation						
Moderate	4	19.0	17	81.0	21	100
Good	7	3.4	199	96.6	206	100

Source: Primary Data, 2019

Table 2. The analysis of Village Midwife Performance in Reducing Infant Mortality.

Variable	Midwives with Infant Mortality		Midwives with No Infant Mortality		Total	
	n	%	N	%	n	%
Age (years)						
< 25	3	6.8	41	93.2	44	100
≥ 25	18	9.8	165	90.2	183	100
Work period (years)						
< 5	4	4.3	90	95.7	94	100
≥ 5	17	12.8	116	87.2	133	100
Participating in Training						
Not yet	15	8.6	159	91.4	174	100
Yes	6	11.3	47	88.7	53	100
Midwife Competence						
Moderate	0	0	8	100.0	8	100
Good	21	9.6	198	90.4	219	100
Resources						
Moderate	6	13	40	87.0	46	100
Good	15	8.3	166	91.7	181	100
Reward						
Moderate	4	23.5	13	76.5	17	100
Good	17	8.1	193	91.9	210	100

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Attitude						
Moderate	7	13	47	87.0	54	100
Good	14	8.1	159	91.9	173	100
Motivation						
Moderate	5	23.8	16	76.2	21	100
Good	16	7.8	190	92.2	206	100

Source: Primary Data, 2019

Table 3. Results of Chi-Square T-Test of the Effect of Performance Variables on Maternal and Infant Mortality.

No.	Performance Variables	P-value	
		Maternal Mortality	Infant Mortality
1.	Age	0.095	0.535
2.	Work Period	**0.026**	**0.029**
3.	Training	0.076	0.553
4.	Competence	0.516	0.358
5.	Resources	0.553	0.320
6.	Reward	**0.011**	**0.035**
7.	Attitude	0.084	0.281
8.	Motivation	**0.001**	**0.016**

Table 4. Results of Multivariate Analysis of Performance Variable on Maternal and Infant Mortality.

Variables	B	S.E	*Wald*	df	Sig	Exp. (B)
Work period	-1.107	0.584	3.591	1	0.058	0.331
Reward	1.385	0.655	4.465	1	0.035	3.994
Motivation	1.243	0.598	4.319	1	0.038	3.467

Table 5. The Test Result of the Interaction between Work Period, Reward, and Motivation towards Maternal Mortality and Infant Mortality in the Health Office of Bone Bolango District.

No	Interaction	P-value	B
1	Work period* Maternal mortality and infant mortality	0.058	-1.107
2	Reward* Maternal mortality and infant mortality	0.035	1.385
3	Motivation* Maternal mortality and infant mortality	0.038	1.243

Andriani (2012) brought up the fact that there was no significant relationship between midwives' age and their performance. This finding was relevant to the research finding of Gibson, Ivancevich and Donnelly (2009) which showed that age was an individual variable; generally, the older an individual is, the better their maturity. Additionally, there are also other factors contributing to midwife performance, e.g., knowledge, education, and training. Given these factors, midwife coordinators have to provide intensive guidance to enhance midwife performance (Gibson, Ivancevich and Donnelly, 2009).

The chi-square test showed the work period of the midwives did not affect the MMR (p-value=.026) and IMR (p-value=.029). Contrastly, a previous study showed the longer the respondents work, the better their performance in antenatal care services (Lamere, 2013). Work period

depicts respondents' mastery experiences in their field of work. In most cases, respondents with lots of work experience do not need intensive guidance, compared to those with little experience.

Supporting the result of this present study, Pamundhi, Sriatmi and Jati (2018) claimed that work period had a positive relationship with individual's productivity at work. Work period has something to do with work experience as a great asset to improve midwife performance. Compared to shorter work period, longer work period does not guarantee the quality of productivity. The longer people work, the more successful their performance; however, performance might decline at some time due to surfeit of midwife and work environment. Decline in productivity at work will influence the MMR and IMR.

Likewise, training variable did not affect the MMR (P-value=.076) and IMR (P-value=.553); this finding corresponded with the research in the Bukittinggi Primary Healthcare Center, indicating that there was no significant relationship between antenatal care training and midwife performance despite a greater number of respondents who have not joined the training (Nisa, Serudji and Sulastri, 2019). However, the respondents still showed good quality performance because they were responsible for every health program to achieve the target.

This finding, however, did not have similar insight to a previous research finding which discovered that normal childbirth care training contributes to improving midwife performance (Longgupa, 2014). Training is a short-term process of education in systematic and organized procedures that give insights to trainees for specific purposes.

The result of this study is the training has not significantly enhanced the midwife performance which resulted in the maternal and infant mortality. Due to poor quality training, the midwives made no enhancement and unachieved goals. The training also takes a short time, which may provide poor quality of the given materials. As a result, the training variable in this study was insignificantly related to midwife performance.

Based on the results of chi-square test, the competence variable did not influence the MMR (P-value=.516) and IMR (P-value=.358). Similarly, Afifah (2017) pointed out midwife competence in Sumenep District did not affect performance. Theoretically, performance is not only about the competence, but also a combination of competence, effort, and opportunity which can be measured by the outcome (Mangkunegara, 2011). In this study, the midwives in Bone Bolango District mostly graduated from midwifery associate degree. Nonetheless, the education level has not yet been proven to affect midwife competence.

The chi-square test presented no effect of the resources variable on the MMR (P-value=.553) and IMR (P-value=.320). Andriani (2012) also expressed the same idea that there was no correlation between facilities and infrastructure and midwife performance in the labor and delivery process in West Lampung District. It perhaps was due to inadequate knowledge regarding well-equipped facilities and their benefits to bolster the childbirth process. Even though the midwives have such facilities, they are not accustomed to using it for health services, especially in the labor and delivery care.

This finding that one of the factors causing maternal and infant mortality is the unavailability of standardized pregnancy checkup tools. The provision of facilities and equipment at work can directly influence individual's performance. Such use ofadvanced equipment and technology may enhance performance, ease, and comfort the workers.

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In Table 3, the reward variable affected on the MMR (p-value=.011) and IMR (p-value=.035). Gibson (2009) also claimed that salary or wage was a reward that can motivate work achievement. Good rewards will encourage employees to reach higher performance. The wage earned by midwives is a prerequisite beside their fixed pay as civil servants or non-permanent employees (Gibson, Ivancevich and Donnelly, 2009).

Another study reported that a reward or incentive significantly correlates with midwife performance in antenatal care service in primary healthcare centers in Gowa District (Lamere, 2013). Giving rewards to midwives corresponds with their performance. The more rewards they got, the better they performed. Besides, the reward (compensation) could increase or decrease midwive's performance, or even motivate them. This study highlighted inadequate rewards would decline performance or motivation.

Table 3 displays the attitude variable did not affect on the MMR (P-value=.084) and IMR (P-value=.281). In the same way, Longgupa (2014) found no significant effect of midwife attitude on performance in regards to their assistance during the process of normal childbirth. Attitude measured in this study was the midwife professionalism in carrying out their duties. Yet, attitude plays a crucial role in the implementation of normal childbirth service program (Longgupa, 2014). However, Djunawan and Haksama found there was a relation between attitude and midwife performance in antenatal patient services (Djunawan and Haksama, 2015).

On the other hand, motivation was found to affect the MMR (P-value=.001) and IMR (P-value=.016). Midwives who had motivation to work better for any given tasks and job responsibilities had better performance than those with low motivation (Marfuah, Tamtomo and Suryono, 2016). Djunawan and Haksama (2015) also found motivation variable significantly contributed to midwife performance in antenatal services. Motivation triggerred positive effects on performance.

The research finding of Pamundhi, Sriatmi, and Jati (2018) also performed similar findings in which there was a significant relationship between midwife motivation and performance. In addition, Fithananti (2013) stated that motivation was substantially correlated with and affected midwife performance in a primary healthcare center, i.e., the higher the motivation, the better the performance. This study elaborated several factors that could develop midwife motivation, including individuals' needs, environmental conditions, desires, and rewards or incentives; these were correlated with each other in improving performance at work. Motivation should be sustained continuously to trigger midwife performance.

CONCLUSION

A midwife as a part of the medical workers has an important role in improving the quality of maternal and infant well-being program. Variables of midwife performance that affected the MMR and IMR included work period, reward, and motivation. While, age, training, competence, resources and attitude did not affect the MMR and IMR. This study recommends that normal childbirth care training should be carried out to all midwives in Bone Bolango District. Additionally, increasing rewards for the midwives' contribution in the process of labor and delivery is necessarry. This study recommends local governments to provide rewards respecting midwife performance to be able to increase the motivation of midwives proportionally.

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CONFLICT OF INTEREST

There is no conflict of interest in this study.

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ORIGINAL RESEARCH

THE EFFECT OF ORGANIZATION'S STRUCTURE AND TASK CHARACTERISTICS ON TEAM EFFECTIVENESS IN TUBERCULOSIS PREVENTION PROGRAM

Pengaruh Struktur Organisasi dan Karakteristik Tugas terhadap Efektivitas Tim pada Program Pencegahan Tuberculosis

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ABSTRACT

Background: A team is a vital element for an organization. An organization should put efforts to improve team performance even though they might face some obstacles. Organization's structure and task characteristics resulted in different team effectiveness of primary healthcare centers in preventing tuberculosis (TB) cases in Surabaya.
Aims: This study aimed to identify the effect of organization's structure and task characteristics on team effectiveness of primary healthcare centers in TB prevention program in Surabaya.
Methods: The research was a quantitative study using a cross-sectional approach. Questionnaires were disseminated to 43 respondents as the samples selected with a proportional stratified random sampling technique based on the success rate. The respondents consisted of doctors, nurses, and health analysts who were directly involved in the Tuberculosis prevention program. This study used a linear multivariable regression test to confirm the most significant model for the independent variable.
Results: The span of control and centralization had a significant effect on task characteristics (sig 0.00; sig 0.017). The dimensions of task characteristics that had a significant effect on team effectiveness were task variety, task identity, and task significance.
Conclusion: There was a significant effect of span of control and centralization on task characteristics. The primary healthcare centers should provide access to technology to upgrade the span of control and centralization and their understanding of task characteristics.

Keywords: health services, organization's structure, task characteristics, team effectiveness, tuberculosis.

ABSTRAK

Latar Belakang: *Tim merupakan salah satu elemen penting dalam sebuah organisasi. Sebuah organisasi perlu berupaya dalam meningkatkan kinerja tim meskipun menghadapi beberapa hambatan. Struktur organisasi dan karakteristik tugas menunjukkan efektifitas tim Puskesmas yang berbeda dalam penanggulangan TB di Surabaya.*
Tujuan: *Penelitian ini mengidentifikasi pengaruh antara struktur organisasi dan karakteristik tugas terhadap efektifitas tim penanggulangan TB di Puskesmas Kota Surabaya.*
Metode: *Penelitian ini adalah penelitian kuantitatif dengan menggunakan pendekatan potong lintang. Kuisoner disebarkan kepada 43 sampel diambil dengan teknik proportional stratified random sampling berdasarkan capaian success rate. Responden terdiri dari dokter, perawat dan analis kesehatan yang terlibat langsung dengan program TB. Penelitian ini menggunakan tes multivariable regresi linier untuk mengkonfirmasi model yang paling signifikan terhadap variabel independen.*
Hasil: Span of control *dan* centralization *berpengaruh signifikan terhadap karakteristik tugas (sig 0,00; sig 0,017). Dimensi karakteristik tugas yang berpengaruh signifikan terhadap efektifitas tim adalah jenis tugas, identitas tugas, dan signifikansi tugas.*
Kesimpulan: *Terdapat pengaruh signifikan antara* span of control *dan* centralization *dengan karakteristik tugas.*

Puskesmas perlu menggunakan teknologi untuk memperbaharui span of control *dan centralisation dan meningkatkan pemahaman setiap anggota tim terhadap jenis tugas, identitas tugas, dan signifikansi tugas.*

Kata kunci*: pelayanan kesehatan, struktur organisasi, karakteristik tugas, efektifitas tim, tuberculosis.*

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INTRODUCTION

Tuberculosis is an infectious disease caused by Mycobacterium tuberculosis agent (Indonesian Ministry of Health, 2016). Webber (2009) identified that the main bacteria causing tuberculosis is Mycobacterium tuberculosis, but Mycobacterium bovis and Mycobacterium africanum are also two other affecting bacteria. Tuberculosis (TB) is caused by gram-positive aerobe bacteria and fatty acids bacteria which attack the lungs and other organs. Based on the Regulation of the Indonesian Ministry of Health No. 67 of 2016 about tuberculosis prevention, TB can be contagious as a patient with TB coughs up sputum, which contains bacteria. A patient with TB who sneezes or coughs can release droplets of contagious sputum through the air. Infection may occur if someone inhales air with droplets of contagious sputum as many as 3,000. It means that the number of bacteria inhaled are around 0 – 3,500 Mycobacterium tuberculosis. Meanwhile, if a patient with TB sneezes, droplets of sputum can infect others with 4,500-1,000,000 Mycobacterium tuberculosis.

It was predicted that 10 million TB cases or 133 cases per 100,000 populations with 558,000 multidrug-resistant tuberculosis (MDR-TB) cases would occur worldwide in 2017 (Indonesian Ministry of Health, 2016). There were about 1.3 million mortalities due to TB and 300,000 mortalities due to TB with HIV. In 2017, deaths due to (TB) decreased by nearly 3% every year. The decrease in mortality rates from 2000 to 2017 was at 42% (World Health Organization, 2017). East Java was ranked in the second among other provinces in Indonesia for 26,152 newly discovered positive acid-fast bacilli or Case Notification Rate (CNR) of 67 per 100,000 population (East Java Provincial Health Office, 2017). Surabaya had the highest number of tuberculosis cases in East Java with the success rate of less than 90%.

In Indonesia, a TB prevention program is implemented by primary healthcare centers as the first-level primary healthcare facilities. They chose a team that consists of doctors, nurses, and health analysts. The program includes several vital activities, such as health promotion, case detection, recovery, as well as improvement in the quality of patients' life. Health promotion becomes an educational approach tp prevent and protect individuals and community from TB. TB case detection is a tracking on TB positive cases and recovery as curative services.

McShane and Glinow (2015) defined a team as a group of two people or more who interact and have the same goals as the organization's. McShane and Von also mentioned that all members should recognize their involvement as a part of the organization. Task is not organized individually, but all members should have common and clear goals and work together. A task is done by a group of individuals in a small system with a broader scale (Lukas, Mohr and Meterko, 2009). Nowaday's public organization management has changed to work from a hierarchical structure to team decentralization. Dividing a particular roles and responsibilities for team members will affect the organization's achievement and

goals (Kramer, Thayer and Salas, 2013).

A new information system can help achieve the annual target and support the evaluation of TB prevention programs. Without information system, health workers are difficult to determine the right actions in TB prevention program. In spite of information system, cooperation among health workers supports the achievement of targets in TB prevention program.

An organization's structure contributes to building cooperation and teamwork among health workers. However, targets can be achieved not only with a good organization's structure, but also clear and precise task characteristics. Similar task characteristics can make a team perform outstandingly. This study initially found that organization's structure and similar task characteristics which primary healthcare centers of Surabaya assigned resulted in ineffective performance. They still had an unclear division of tasks, such as double tasks that made their team not perform effectively. Meanwhile, the task characteristics were different for each member due to the complexity of the tasks. The Health Profile by East Java Provincial Health Office (2017) and Indonesian Ministry of Health (2017) showed the average CDR (Case Detection Rate) achievement rate of TB prevention program in Surabaya was 60.17% with MSS (Minimum Service Standard) of 77% in 2015, 74.88% with MMS of 85% in 2016, and 83.53% with MMS of 90% in 2017.

Team effectiveness is the condition to achieve goals, meet needs and objectives of team members, and maintain their relationship. It can be assessed from outputs produced by the team in completing a task. McShane and Glinow (2018) mentioned three factors including organizational environment, team design and team process can influence team effectiveness. Organizational environment consists of appreciation, communication, organization's structure, organizational leadership, and physical space. Team design consists of task characteristics, team size and team composition. While, team process consists of team development, team norms, team cohesion and team trust. All of these indicators affect team effectiveness. If team effectiveness is not achieved, the team will have difficulty in achieving their target and the emergence of dissatisfaction among team members (Diagram 1).

Even though similar task characteristics and organization's structure were found, the team members did not have the same perception. Therefore, this study identified the effect of organization's structure and task characteristics on team effectiveness for TB prevention program in all primary healthcare centers of Surabaya.

METHOD

This study was observational research using a cross-sectional design. The population in this study were all tuberculosis prevention groups in primary healthcare centers. The sample was obtained using a proportional stratified random sampling based on the target success rate of the primary healthcare centers in Surabaya. Forty-three groups were obtained from sample calculations using a reference to achieving the 2018 target success rate that showed the final results of TB control and the quality of TB treatment given. With the success rate achieved at > 90.01%, 29 TB control teams were involved. For primary healthcare centers with the unachieved success rate at <90.00%, 14 prevention teams were still included. Thus, there were 43 groups participating in this study. This empirical study distributed questionnaires which validity and reliability have been tested with the Pearson test.

The researchers and enumerators disseminated questionnaires to 43 groups of health workers assigned to handle the TB prevention program in all primary

healthcare centers of Surabaya. This study obtained an informed consent during the data collection, which was done voluntary and confidentiality. After getting permission from the primary healthcare centers, the researchers and enumerators conducted forum group discussion with health workers to TB prevention program. The data were collected twice from doctors, nurses, and health analysts who worked closely with patients in needs of TB treatment. In the first meeting, questionnaires about organization's structure and task characteristics were disseminated. Then, the researchers gave questionnaires about team effectiveness in the second meeting. Both questionnaires were spread to 345 health workers, but only 318 health workers completely answered. For organization's structure variable, members' perceptions of the team structure were assessed from three indicators, such as span of control, centralization and formalization. While, a task characteristic variable was formed by following work design questionnaire which consisted of autonomous tasks, task variety, task identity, task significance, task feedback and task interdependence. The questionnaires had four scales; strongly disagree, disagree, agree, and strongly agree. The team score was calculated from the average scores of all members (Ehrhardt *et al.*, 2018). The average score of each team was obtained from a linear multivariable regression test. If the P-value was less than α-value (0.05), it could give significance. A backward model was applied in the test to find out the most significant model for the dependent variable. The multivariable analysis could seek for the prevalence risk or prevalence ratio, which showed the significance of tested variables. Thus, it could help determine the effect on each variable.

Organization's structure as the independent variable was measured from 3 dimensions; span of control, centralization, and formalization. For example, the questionnaire regarding span of control stated "To me, one or more health workers were assigned to TB prevention program to give a direct report to the managers of primary healthcare centers or to Surabaya District Health Office." The centralisation dimension questionnaire stated "I think the health workers assigned to prevent TB have the authority to make an official decision on TB prevention program." Regarding formalization dimension, the questionnaire stated "I guess, the health workers assigned have SOPs in the implementation of TB prevention program." The final assessment of organization's structure was scaled from very ineffective, ineffective, effective, and very effective. Task characteristics variable consisted of some dimensions; task autonomy, task variety, task identity, task significance, task feedback, and task interdependence. Task characteristics questionnaire was modified using the work design questionnaire of Morgeson, Frederick and Humphrey (2006) with 20 questions. This variable was categorized into very low, low, high, and very high.

On the other hand, team effectiveness as the dependent variable was measured from satisfaction with member's needs and team maintenance as initiated by McShane and Glinow (2015). Team effectiveness questionnaire consisted of 11 questions for asking the success rate in each indicator. Team effectiveness was categorized into highly ineffective, ineffective, effective, and very effective. The overall team score was obtained from the average score of all members. Data were then descriptively analyzed to calculate the mean of each variable's dimension with the Pareto principle. This principle explained that 80% effects would occur because of 20% causes. The mean of variable and its

dimension was considered problematic if the accumulation of score from the lowest two categories was less than 20%. The cutting point of mean was considered unacceptable if 80% effects multiplied with a maximum score of 4 for each answer was 3.20. This study has obtained an ethical clearance approved by the Health Research Ethics Committee, Faculty of Nursing, Universitas Airlangga (No.: 1316-KEPK).

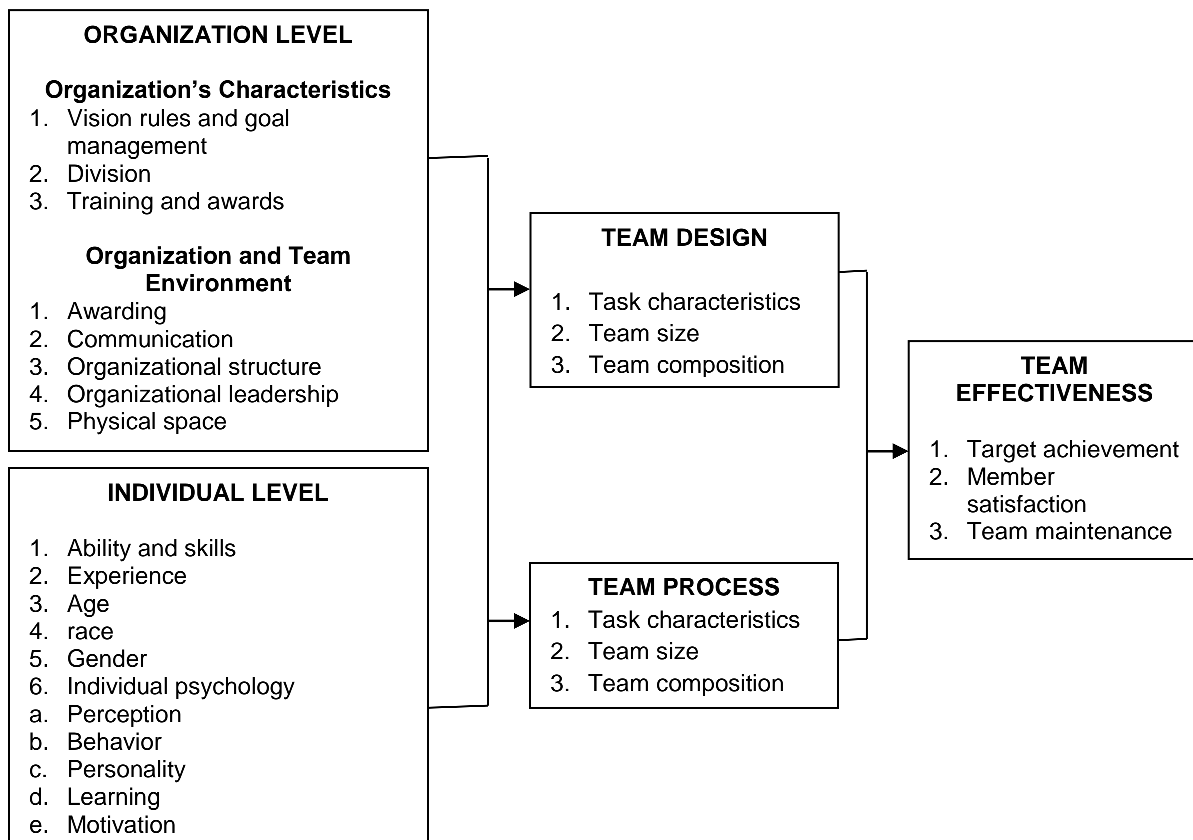

Diagram 1. Theoretical Framework of Team Effectiveness

Source: Team Effectiveness Model (McShane and Glinow, 2018)

RESULTS AND DISCUSSION

This study aimed to analyze the effect of organization's structure and task characteristics on team effectiveness for TB prevention program. Diagram 2 illustrates how team effectiveness as the dependent variable was affected by organization's structure and task characteristics as the independent variables. From the analysis, this study found out the analysis results of each dimension of the independent variables in Table 1.

Table 1 showed most of the teams perceived that the organization's structure was effective. Whereas, 37.2% of the teams had a very effective formalization. The centralization dimension had a mean value of <3.20, meaning the teams perceived not having an authority to make an official decision on the program. While, the other dimensions, i.e., span of control and formalization, obtained the mean of >3.20. This indicates that the teams had already appointed one or more people to report directly to the managers of the primary healthcare centers. They also had SOPs in implementing the program.

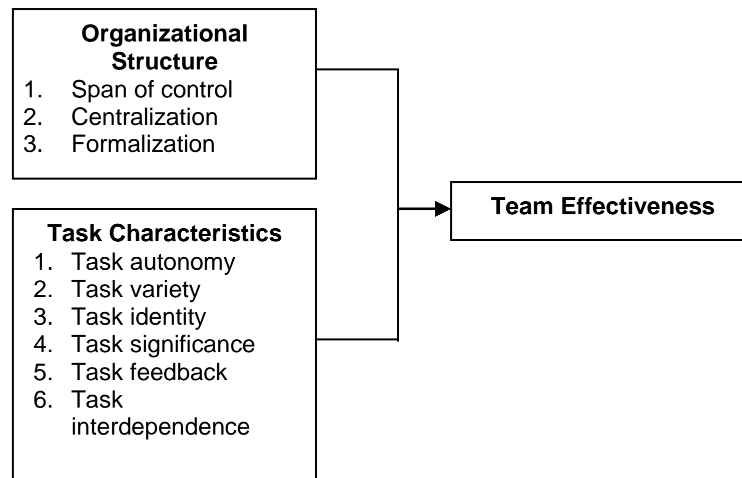

Diagram 2. Research Framework

Table 1. Perceptions of Conditions per Indicator of the Organizational Structure of TB Control Teams in Primary Health Cares in Surabaya City in 2019.

Dimension	Very ineffective		Ineffective		Effective		Very Effective		Total	
	n	%	n	%	n	%	n	%	n	%
Organization's structure										
Span of Control										
Designating a person to report about TB cases	0	0.0	0	0.0	31	72.1	12	27.9	43	100.00
									Mean	3.28
Centralization										
Authority for taking an official decision	0	0.0	0	0.0	37	86.0	6	14.0	43	100.00
									Mean	3.14
Formalization										
SOPs in the implementation of TB prevention program	0	0.0	0	0.0	27	62.8	16	37.2	43	100.00
									Mean	3.37

Furthermore, 79.1% of the teams perceived that they had an effective organization's structure. The centralization dimension had the lowest mean of 3.14. It refers to the decision-making process which can be both authority hierarchy and participation. Decision-making on task division and activity implementation is centralized when the authority hierarchy is applied. Independent decision-making indicates low authority hierarchy (Hage, Jerald, and Aiken, 1967; Jones, 2013). Whereas, a decision made by the organization leads to employee's participation (Hage and Aiken, 1967). The teams had low participation in decision-making since higher stakeholders, such as District Health Office, Provincial Health Office, or Ministry of Health took control over this process. According to Lambert, Iii, and Lynne (2006), the centralisation dimension could affect employee satisfaction. For instance, employees with less contribution in decision-making and

less authority will feel unsatisfied about their work. Even though the authority hierarchy and participation affect team satisfaction, these do not impact on organization's public services (Rhys *et al.*, 2009).

Table 2 shows the mean of all the task characteristics dimensions was at <3.20 except for task significance which the mean was at 3.33. That the mean of task significance was >3.20 showed the teams' high task significance. However, the teams still had low task autonomy, task variation, task identity, task reciprocity, and task engagement which the mean was <3.20.

This study revealed most of each task characteristics were in a high scale. The Regulation of Indonesian Ministry of Health No.67 of 2016 about TB treatment states the means of team authority, task variety, task identity, task feedback, and task significance are commonly less than 3.20. The teams' perception of task characteristics was low since not all team members were involved in dividing tasks based on their competency. Task characteristics could evaluate a task model focused on task characteristics to sound more interesting and motivating for employees (Folami and Jacobs, 2005). Hackman, Richard, Oldham and Greg (1976) stated that task characteristics have five dimensions; task variety, task identity, task significance, task autonomy, and task feedback. Meanwhile, McShane and Glinow (2015) mentioned task interdependence despite those five dimensions.

The results showed 86.0% of the teams perceived they performed the program effectively. Indicated satisfaction with their needs and team maintenance hadof the means of less than 3.20, this study found the team effectiveness was still low. Only 9.3% of the teams were satisfied with the fulfillment of their needs. It means the majority of primary healthcare centers formed a team by force. Since they had different facilities and targets, they could not ensure the fulfillment of their members' needs.

Table 2. Perceptions of Conditions per Task Characteristics Indicator of TB Control Teams in Primary Health Cares in Surabaya City in 2019.

Dimension	Very Low		Low		High		Very High		Total	
	n	%	n	%	n	%	n	%	n	%
Task Characteristics										
Task Autonomy	0	0.0	0	0.0	40	93.0	3	7.0	43	100.00
									Mean	3.07
Task Variety	0	0.0	0	0.0	37	86.0	6	14.0	43	100.00
									Mean	3.14
Task Identity	0	0.0	0	0.0	40	93.0	3	7.0	43	100.00
									Mean	3.07
Task Significance	0	0.0	0	0.0	29	67.4	14	32.6	43	100.00
									Mean	3.33
Task Feedback	0	0.0	0	0.0	37	86.0	6	14.0	43	100.00
									Mean	3.19
Task Interdependence	0	0.0	0	0.0	39	90.7	4	9.3	43	100.00
									Mean	3.14

Table 3. The Effect of Organization's Structure on Task Characteristics.

Dimensions of Organization's Structure	Sig.	Standardized Coefficients Beta
Span of Control	0.000**	0.538
Centralisation	0.017**	0.315
Formalization	0.128	0.194

Dependent Variable: Task Characteristics
**) = significance < 0.05

Table 4. The Effect of Task Characteristics on Team Effectiveness in TB Prevention Program.

Dimensions of Organization's Structure	Sig.	Standardized Coefficients Beta
Task Autonomy	0.459	0.067
Task Variety	0.723	-0.032
Task Identity	0.088	0.211
Task Significance	0.035**	0.230
Task Feedback	0.035**	0.286
Task Interdependence	0.005**	0.319

Dependent Variable: Team Effectiveness
**) = Significance < 0.05

This study also discovered that the mean of team maintenance was categorized low at 3.14. As the Regulation of Indonesian Ministry of Health No. 67 of 2016 about TB prevention on the workload of team depends on the working area of primary healthcare centers. Primary healthcare centers that have less than four members but work in a broader scope will face more difficulties when they are given more workload to achieve their target. Performance, patients with TB, team workload may affect the low perception of team maintenance

An organization had their strategy to organize team and their work to be well-distributed according to the organization's needs (Mintzberg, 2007). The organization applies a structure as a technique to differentiate and integrate its task framework with the authority (Lawrence and Lorsch, 1967). The results of this study found an organization could design its structure when members' tasks had been decided to support cultural values and norms which shape the team's behaviors and goals (Musibau, Oluyinka and Long, 2011).

Table 3 illustrates the results of multivariable dimension test between organization's structure and task characteristics in the implementation of TB prevention program in all primary healthcare centers of Surabaya. This study found a significant effect of the span of control on task characteristics with a P-value of 0.000, which was less than α (0.05). The beta value of span of control was 0.538, meaning perceiving the span of control as effective gives 53.8% possibilities to have high task characteristics. Primary healthcare centers of Surabaya apply a hierarchical structure defined by McShane and Glinow (2018) as a flat and team-based structure. Such hierarchical team-based structure has a wide span of control because the primary healthcare centers supervise the team infrequently. The team appointed one or more people as a span of control to report to the managers of the primary healthcare

centers and Surabaya District Health Office.

The number of people assigned as a span of control significantly affects perception of task characteristics as the span of control corresponds with perception of given workloads. Some studies found similar findings that a span of control significantly affected perception of members' roles (Wong *et al.*, 2015). Each task determines members' roles in a team. Some empirical studies further discovered that for giving a full-time job to a span of control in TB prevention program was an old system due to incompatibility of tasks (Omery *et al.*, 2019). Health workers usually have a narrow span of control, in which only one person is appointed to report others' tasks to the leader. Using this span of control system, members will have good perception of task characteristics and focus on particular tasks.

Moreover, Table 3 presents the centralization dimension affected task characteristics significantly with the P-value of 0.017, it was less than α value (0.05). Centralization is the way an organization make their decision (McShane and Glinow, 2018). On behalf of an organization, a team also needs the authority to decide unpredictable agenda and predetermined ones. For the implementation of TB prevention program, centralization is vital to support team work. The centralisation dimension had a beta value of 0.315, meaning that effective centralization could result in 31.5% of good perception of task characteristics.

Moreover, an organization could apply centralization to solve coordination issues (Veetil, 2017). It showed a positive effect of centralization on task characteristics. However, Borman, Ilgen and Klimoski (2003) mentioned that centralization had a negative effect on perception of task characteristics. However, the results of this study explained due to the hierarchical structure and system, the centralization system made the teams follow the leader's decision. According to McShane and Glinow (2018), many organizations adopt the centralization system in which leaders hold power to make decision and vision. As a result, members could perceive the leaders' decision to pursue common vision and mission which help them to understand task characteristics.

Table 3 also shows formalization dimension had no significant effect on task characteristics with the P-value of 0.128 which made its beta value was meaningless. Contrarily, the formalization dimension had implicit effects on work performance (Mutafa *et al.*, 2019) . The Regulation of Indonesian Ministry of Health No. 67 of 2016 about TB prevention states formalization for health workers to TB prevention program can operate as long as the policy does not change. Standard Operating Procedures (SOPs) on task descriptions had been applied by those who had a low or good perception of task characteristics. Even though perception of task characteristics is low, doctors, nurses, and healthy analysis will still check and give treatments to patients or TB suspects. As a result, it seems that formalization dimension did not affect perception of task characteristics.

Table 4 demonstrates task characteristics affected task significance, task feedback, and task interdependence significantly. This result was relevant with some other studies which state that team effectiveness was correlated with task characteristics (Pai *et al.*, 2018). Task characteristics reflect employees' behavior, attitude, and feeling about their job (Fraccaroli, Zaniboni and Truxillo, 2017). Task characteristics stimulate strategies used by each member (Janssen and Brumby, 2015).

In the primary healthcare centers, the teams had similar task characteristics.

Different task characteristics among team members are crucial for team performance. Due to the high annual target of TB detection and success rate, task characteristics will affect team performance.

Furthermore, this study found task significance dimension affected task effectiveness with the P-value of 0.035 which was less than α value (0.05). This dimension had the beta value of 0.230, indicating that good perception of task significance contributed 23.0% to good perception of team effectiveness. Even though task significance did not directly affect performance, it still affected task engagement and performance significantly (Grobelna, 2019). Task significance is a team responsibility, which exerts meaningful experience (McShane and Glinow, 2018). However, some other studies showed task significance dimension had a significant relationship with task performance (Zawawi, Nasurdin and Mohd, 2017). These studies clarified that task significance became a stimulus and gave direct or indirect effects on team effectiveness.

The teams in TB prevention program worked closely with TB patients, and thus their task significance was relatively high. For instance, a doctor is responsible for a medical check, diagnosis, and drug prescription for each patient or tuberculosis suspect. Nurses take care of and ensure TB patients complete treatments. Health analysists, for example, check patient's sputum in supporting doctor's diagnosis.

The next dimension is task feedback, which also affected team effectiveness significantly with the P-value of 0.035 which was less than α value (0.05). The beta value was 0.286 indicating good perception of task feedback possibly contributed to 28.6% of good team effectiveness. Johari and Yahya (2016) found similar findings which task feedback had a significant effect on task performance. Veleme (2015) mentioned that positive or negative feedback was important to make the team effective. Moreover, positive feedbacks had a strong relationship with ask performance (Evans, 2019). Employees who had good task feedback had a greater chance to perform effectively as they were motivated to achieve targets (Gagnon-Dolbec, McKelvie, and Eastwood, 2017). Task feedback could evaluate team performance so that employees could improve themselves later on.

Despite its impact on task performance, Brown *et al.* (2019) discovered that team feedback would be effective if it was regularly done. Conversely, individuals and teams without regular feedback could face failures. Moreover, team feedback is supported by organization's culture (Evans, 2019).

Task feedback needs both coordination and communication among the teams in the implementation ofTB prevention program. Task feedback given to more number of employees will be less effective and irregular.

Regarding task interdependence, this study found the P-value of 0.005 was smaller than α value (0.05). It indicates this dimension affected team effectiveness significantly. The beta value of 0.319 showed a meaningful result in which good task interdependence could contribute to 31.9% good perception of team effectiveness. Task interdependence can improve psychological state of each member (Tuuli, 2018). As a result, employees could performance tasks effectively. A team with good perception of task interdependence would encourage teamwork in achieving targets (Cooke, Hilton, and Sciences, 2015). Supporting this fact, Lee *et al.* (2015) also found that task interdependence had a positive effect on performance. Task interdependence in the implementation of TB prevention

program interconnects doctors, nurses, and health analysts who have non-interchangeable roles.

Overall, this study only focused on organization's structure and task characteristics in the primary healthcare centers, but it did not include other factors, i.e., individual factors which perhaps affect team effectiveness.

CONCLUSION

Organization's structure (span of control and centralization) had a significant effect on task characteristics. In the same way, task characteristics (task significance, task feedback, and task interdependence) affected team effectiveness significantly. Good perception of task characteristics exists when leaders and members build good communication. This study also concluded task characteristics became an intervening variable of organization's structure and team effectiveness. To recommend, a psychological training on communication could be a way of improving relationship among the team members.

CONFLICT OF INTEREST

Authors declared that there was no conflict of interest in this study.

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ORIGINAL RESEARCH

THE DETERMINANTS OF ACCESS TO ADOLESCENT-FRIENDLY HEALTH SERVICE: A CASE CONTROL STUDY

Determinan Akses Pelayanan Kesehatan Peduli Remaja: Sebuah Studi Kasus Kontrol

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ABSTRACT

Background: Adolescents need to access Adolescent-Friendly Health Service (AFHS) to get it's benefit in order to improve adolescent health. However, the current adolescent access to that service remains low with the access prevalence under 50%).
Aim: This study determined factors that affected adolescents' access to AFHS.
Methods: This school-based case control study was conducted in 9 junior and senior high schools in the area of Sangkrah and Kratonan in Surakarta District. There were 162 cases (who accessed the AFHS by guidance from health professionals and peer educators) and 162 controls (those who did not) who were chosen using total sampling and proportionate random sampling technique, respectively. A multiple logistic regression analysis was used to assess the determinant factors of AFHS access.
Results: Access to AFHS was significantly determined by knowledge of the program and perceived demand. A probability of finding adolescents who had knowledge of the program was 6 times higher in the case group than in control group with the OR value of 6.1 (95% CI 3.3-11.1).
Conclusion: Overall, the low adolescents' access was mostly caused because of insufficient knowledge. Broadening information about the program and adolescents' access to the program through electronic media and peer educators is required.

Keywords: access, adolescent, Adolescent-Friendly Health service, AFHS.

ABSTRAK

Latar Belakang: *Remaja perlu mengakses program Pelayanan Kesehatan Ramah Remaja (PKPR) untuk mendapat manfaat program PKPR guna meningkatkan kesehatan remaja. Namun hingga kini akses remaja pada PKPR masih rendah dengan prevalensi kurang dari 50%.*
Tujuan: *Penelitian ini menganalisis faktor determinan akses remaja pada PKPR.*
Metode: *Penelitian kasus control berbasis sekolah diselengggarakan oada 9 Sekolah (SMP dan SMA) di wilayah Sangkrah dan Kratonan Kota Surakarta.Terdapat 162 kasus (mengakses pelayanan PKPR melalui tenaga kesehatan dan atau konselor sebaya) dan 162 kontrol (tidak mengakses pelayanan PKPR) dipilih dengan teknik total sampling dan proportionate random sampling. Analisis multivariat dilakukan dengan uji multiple logistic regression.*
Hasil: *PKPR dipengaruhi oleh pengetahuan tentang layanan dan persepsi kebutuhan pada layanan PKPR. Peluang untuk menemukan remaja yang memiliki pengetahuan tentang layanan PKPR 6 kali lebih tinggi pada kelompok yang mengakses dibanding yang tidak dengan OR 6.1 (95% CI 3.3-11.1).*
Kesimpulan: *Rendahnya akses remaja pada layanan PKPR utamanya dipengaruhi oleh kurangnya pengetahuan tentang layanan. Perluasan informasi layanan dan kebutuhan remaja untuk mengakses layanan PKPR melalui media elektronik dan konselor sebaya diperlukan.*

Kata kunci*: akses, remaja, pelayanan kesehatan ramah remaja, PKPR.*

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INTRODUCTION

The World Health Organization recommended each country to organize Adolescent-Friendly Health Service (AFHS) in meeting the special needs of adolescents for education and reproductive health care. This program

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was aimed to implement one of the International Conference for Population and Development (ICPD) Program of Action in 1994 (Sawyer *et al.*, 2012; World Health Organization, 2012). The equitable and quality AFHS then became one of the priority agendas, especially in developing countries including Indonesia. The Indonesian Ministry of Health launched a Adolescent-Friendly Health Service program (AFHS) in primary healthcare centers. Within a decade and a half of the program were running, the number of primary healthcare centers conducting the AFHS has increased and spread fairly in various provinces. The data showed that 81.69% of the total districts in Indonesia had at least 4 primary healthcare centers with AFHS in 2014. This percentage represented about 31% of the total primary healthcare centers in Indonesia (Centre for Data and Information of Indonesian Ministry of Health, 2018).

Many other developing countries have provided AFHS in parimary healthcare centers as well, but the access to the program is still limited. Research on the quality assessment of AFHS in Southern Africa showed that there were no health facilities that met the minimum friendly adolescent health facility standards in two provinces studied (James *et al.*, 2018). Another study on adolescents' access to AFHS in India showed that the program was limited to only a small proportion of female adolescents (Dixit *et al.*, 2017). Meanwhile, studies in sub-country areas in Kenya and Ethiopia found only 38.5% and 36% of adolescents had respectively utilized AFHS even though improvements in adolescents' access to the program have been made, such as training peer educators from schools and organizing school-based reproductive health education programs (Motuma *et al.*, 2016; Luvai *et al.*, 2017).

The same issue occurred in Indonesia. The AFHS was designed to increase adolescent's access through school activities, youth activities in the community and other activities, and to form peer counsellors at schools (Situmorang, 2016). However, adolescents' access to the AFHS remains small. There was no national data available showing the number of adolescents who has accessed the program. Previous research in several districts and provinces showed that access to the AFHS was low. A study about the access to AFHS in South Kuta, Bali Province had only 5 visits per month in average (Winangsih, Kurniati and Duarsa, 2015). Several other studies found adolescents' access to the AFHSs ranged from 9.7% to 33.1% of the total adolescents in other Indonesian regions (Amieratunnisa and Indarjo, 2018; Handayani, 2016; Violita and Hadi, 2019; Sari *et al.*, 2017). A pilot study in Surakarta City, Central Java Province showed the same result. There were only two regions which had fully implemented AFHS in Sangkrah and Kratonan Primary Healthcare Centers. However, the number of adolescents who have accessed to the AFHS was less than 5% of the total in the regions (Surakarta District Health Office, 2016).

Yet to improve adolescent health, the availability of AFHS alone is not enough. Adolescents need to access a reproductive health care centre (Chandra-Mouli, Lane and Wong, 2015). They may know references of sources of information and reproductive health care, promote safe sexual behaviour and have higher satisfaction and self-esteem regarding sexual health. With this expected behavior, they may reduce the burden of disease due to teenage pregnancy and childbirth throughout the world (Patton *et al.*, 2009). In other cases, such access to the AFHS can prevent unsafe abortion and new HIV AIDS infections in adolescents. About 11% of teenage births were experienced by women aged 15-19 years per year; about 15% and 26% of unsafe abortion occurred to women aged 15-19 years and 20-24 years respectively (World Health Organization, 2018). Around 41%

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of the total new HIV infections were found in adolescents aged 15 years and more often aged 15-24 years (UNICEF, 2011).

The availability of AFHS does not guarantee to decrease adolescents' reproductive health problems since adolescents might have troubles in accessing this program. Factors influencing adolescents' access to AFHS can be explained using demand and supply factors, as well as four dimensions of access namely physical accessibility, availability, affordability and acceptability (Jacobs *et al.*, 2012). Various studies on the utilization of health services pointed out physical accessibility (distance and means of transportation to the health facilities that provide AFHS) was one of the determinants. A slight deviation in the research in Surakarta showed that this variable was difficult to measure because of rare direct access to the AFHS. Most of adolescents accessed AFHS when a health officer or peer educators visited their schools. Besides, affordability aspect was difficult to measure as well because the program did not charge all adolescents. Only few studies assessed factors influencing access to AFHS in Indonesia (Violita and Hadi, 2019). A qualitative approach to measure the access of AFHS is commonly in use because the prevalence of access to the program in Indonesia is small (Handayani, 2016; Friskarini and Manalu, 2016). In addition, this study was conducted in Surakarta district because it was declared as one of the child-friendly cities. Providing and implementing Adolescent-Friendly Health Service becomes the indicator of the city's success. Moreover, the AFHS in Surakarta have routinely been carried out through peer educator training in the target schools. Nevertheless, the prevalence of access was 5% of total adolescents in Surakarta district in 2015 (Surakarta District Health Office, 2016). Therefore, the researchers were interested in investigating the determinants of access to AFHS in Surakarta City using quantitative approach.

METHOD

A school-based case control study was conducted in 9 junior and senior high schools in total in the area of Sangkrah and Kratonan Primary Healthcare Centers in Surakarta District, Indonesia from January to May 2019. This study had an ethical approval from the Health Research Ethics Committee, Faculty of Medicine, Muhammadiyah Surakarta University (No.: 2105/B.1/KEPK-FKUMS/V/2019). A case control approach was chosen since the actual access to AFHS was limited at 5% of total adolescents in Surakarta district. This study obtained permits from the principles of 12 target junior and senior high schools in the working areas of Sangkrah and Kratonan Primary Healthcare Centers. Out of 2095 students in that schools who filled screening questionnaires, there were 15.8% students who utilized AFHS for receiving health information and health consultation from health professionals and peer educators at each school. A case group was those students who accessed the AFHS in 2017 and 2018 by guidance from either health professionals or peer educators and were confirmed by health professionals or peer educators. There were 174 identified cases, which of being confirmed were were included in this study. Finally, only 162 students signed a informed consent form. Consideration was not made based on adolescent's reproductive health in choosing the case group. A control group consisted of students who did not utilize AFHS to receive health information and health consultation from either health professionals or peer educators at the schools. The sampling technique for the control group were performed using proportionate random sampling. The ratio of case and control group was n = 1:1.

Eventually, the study obtained 162 students as the case group and 162 as the control group who then filled out a questionnaire about individual characteristics, knowledge of reproductive health, opportunity to access, knowledge, social perception, and perceived need for the AFHS. Independent variables included a combination of demand and supply factors, such as sex, knowledge, perceived needs, social perceptions of AFHS access, opportunity to access and

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knowledge of AFHS. Knowledge instrument consisted of 19 questions of basic reproductive health information. Respondents who were scored above the average of the total respondents' score were categorized as high knowledge. Leaving schools to access AFHS during school hours and not perceived time meant no opportunity access barrier. Respondents who regarded others' opinion and perceived that accessing AFHS was embarrassing and taboo, were categorized to have negative social perception. Knowledge of AFHS in this study was measured from whether the respondents knew, ever heard and got exposed to promotion agenda of AFHS. Additionally, perceived needs for AFHS were measured from 11 questions regarding needs and significance of reproductive health information and service and consultation session with health officers in 1 to 4 Likert scale. Respondents would be categorized based on the needs of AFHS if they had a total score of perceived needs above the average score of all respondents. All these instruments were self-designed and tested for validity and reliability. A multivariate analysis was deployed using multiple logistic regression with 95% confident interval.

In the case group, the respondents accessed the AFHS more from school's peer educators (77%) than health professionals (23%). Table 1 displays the respondent characteristics based on age, sex and level of education. Most of the respondents were senior high school students, which dominated the case group.

This study also found there was a difference in mean age, about 0.6 years higher in the case group than in the control one. The majority of the respondents were girl, but the proportion was slightly smaller in the control group. Overall, the respondents had slightly different characteristics probably due to the incompatible selection technique of the control group, which did not considered schools and grade.

Based on the independent variables, there were no significant differences in the proportion of knowledge about reproductive health in both groups. The number of respondents who had opportunity barrier was slightly greater than that who did not. Similarly, perceived demand on the service was experienced

RESULTS AND DISCUSSION

Table 1. Respondent Characteristics

Respondent Characteristics	Case		Control		P-Value
	(n=162)	(%)	(n=162)	(%)	
Education level					
Junior High School	50	30.9	78	48.1	0.001
Senior High School	112	69.1	84	51.9	
Sex					
Male	33	20.4	50	30.9	0.03
Female	129	79.6	112	69.1	
Age					
12	0	0	3	1.8	0.006
13	20	12.3	38	23.5	
14	26	16.1	33	20.4	
15	24	14.8	26	16	
16	58	35.8	40	24.7	
17	30	18.5	22	13.6	
18	4	2.5	0	0	
Mean ±SD	15.4±1.35		14.79±1.43		

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by a slight above half of the total respondents. Only about three quarter of the total respondents had negative social perception and knowledge of AFHS.

Bivariable analysis is explained in Table 2. Opportunity to access, perceived demand and sex were variables affecting the access to AFHS. The Odd Ratio (OR) for each variable was almost double to the female respondents who did not have opportunity barrier and perceived demand. The absence of social barrier signified from knowledge of the service had the highest OR value of 5.8, 95% CI (3.23-10.34).

The selection of variables in the final model for multivariable analysis was associated with the theory/literature review and multicollinearity between a group of independent variables. There was a significant association between sex and knowledge, in which girls knew the AFHS more than boys. Therefore, sex was excluded from the model because it could confound the variable of knowledge of AFHS with access to AFHS. The effect of sex on the access to the AFHS was explained from the relation of knowledge of AFHS with access to AFHS. The selection of the final model was based on the value of AIC and Pseudo R2.

The final model in Table 3 was chosen because the AIC (Akaike Information Criterion) value was the smallest, and Pseudo R2 value was the highest. The probability to find respondents who knew AFHS was 6 times higher in the respondents with access with OR 6.2 95% CI (3.40- 11.34). Perceived need and opportunity to access affected the access with OR 1.9 (95% CI 1.2-3.3) and 1.7 (95% CI 1.06-2.8), respectively. It means the probability to find the respondents who perceived demand on the service and had an opportunity to access was double in the case group. The quality of the model in predicting AFHS access was seen from the pseudo R2 value of 0.124. About 12.3% variation in

Table 2. Bivariable Analysis of AFHS Access in Surakarta District based on Independent Variables.

Variable	AFHS Access				P-value	OR	OR 95% CI
	Case		Control				
	n=162	%	n=162	%			
RH Knowledge					0.266	1.28	0.82-1.98
High	87	53.7	77	47.5			
Low[ref]	75	46.3	85	52.5			
Social perception of AFHS access					0.684	0.89	0.52-1.52
Positive	33	20.4	36	22,2			
Negative[ref]	129	79.6	126	77.8			
Knowledge of AFHS					<0.001	5.78	3.23- 10.34
Know	68	42.0	18	11.1			
Not know[ref]	94	58.0	144	88.9			
Opportunity to access					0.01	1.78	1.14-2.78
No barrier	83	51.2	60	37.0			
Had barrier[ref]	79	48.8	102	63.0			
Perceived need					0.01	1.77	1.14-2.75
Need	97	59.9	74	45.7			
Not need[ref]	65	40.1	88	54.3			
Total	162	100.0	162	100.0			

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AFHS access was explained by this model. The rest proportion was explained by another factor outside the study's variables. However, based on goodness analysis of fits test with p-value 0.576 (>0.05) concluded that this model had a good calibration and gave the right prediction about AFHS access.

Table 3. Multivariable Model Using Logistic Regression Analysis of AFHS Access as the Determinant.

Variables	OR	OR 95% CI
Social perception of accessing AFHS	0.59	
Positive		0.32-1.09
Negative[ref]		1
Knowledge of AFHS	6.20**	
Know		3.40- 11.34
Not know[ref]		1
Opportunity to access	1.73*	
No barrier		1.06-2.80
Had barrier[ref]		1
Percieved need	1.88*	
Need		1.17-3.06
Not need[ref]		1
AIC: 403.544 BIC :422.44, Pseudo R2 : 12.38%		

*Note: *p-value < 0.001, **p-value<0.05*

More importantly, this study reported low proportion of students who accessed AFHS from health professionals or peer educators at each school (15.8%). Some previous studies in some Indonesian regions showed the prevalence of adolescents' access to AFHS ranged from 9.7% to 33.1% (Amieratunnisa and Indarjo, 2018; Handayani, 2016; Violita and Hadi, 2019; Sari *et al.*, 2017). A previous study in Makassar district found 24.3% of students utilized adolescent reproductive health services, such as the AFHS and center for adolescent information and concelling (Violita and Hadi, 2019). Another study about access to AFHS in Miroto Primary Healthcare Center in Semarang district, Central Java found that the percentage of adolescents who accessed the service was only 12% of total respondents (Handayani and Rimawati, 2016).

In this present study, the number of students who accessed AFHS through peer educators was higher than through health professionals, meaning that the actual adolescents' access to the AFHS was low. The same problem also occurred in Other Low Middle Income Countries (LMIC), including India. In India, only a small proportion of adolescents could access the AFHS, and they were mostly girls (Dixit *et al.*, 2017). Meanwhile, Kenya and Ethiopia had the higher proportion of adolescents' access which was 38.5% and 36%, respectively (Motuma *et al.*, 2016; Luvai *et al.*, 2017). These studies brought up a critical issue of adolescent health service management that needs to be improved.

The determinant factors of AFHS access involved the absence of social barrier, such as knowledge of the AFHS, the absence of opportunity barrier and perceived demands. . This suggests that both demand factor and supply factor affected adolescents' access to AFHS (Jacobs *et al.*, 2012). Knowledge of AFHS was the strongest determinant of AFHS utilization. Previous study in Indonesia also found knowledge of reproductive health and available service could increase 74% of the adolescents' access to the service (Violita and Hadi, 2019). In Southeast Ethiopia, a group of respondents who had heard about the service from health workers were 2.5 times more likely to utilize AFHS (Jarssa, Lodebo and Suloro, 2017). Similarly, a study in Kenya found that adolescent who heard of the Youth Friendly Reproductive Health Service (YFRHS) and knew where the service were most likely to utilized the YFRHS (Luvai, Kipmerewo and Onyango, 2017).

In the LMIC, the AFHS was not yet popular for adolescents. In Makassar City, the students mostly did not know the service (Violita and Hadi, 2019). Knowledge of the services was a demand

to access the service (Kennedy *et al.*, 2013). Lack of knowledge about where and what services are provided indicated demand-side barriers for adolescents to access the services (Jacobs *et al.*, 2012). Lack of information could reduce the adolescent's awareness of maintaining health behaviour and utilizing the AFHS.

A qualitative study on adolescents' perspective of AFSH found activities initiated by the government raised awareness of what and where the service was provided (Godia *et al.*, 2014). A literature review showed that Information Education and Counselling (IEC) outreach activities conducted by health professionals had potentials in increasing the demand. Instead of using printed IEC, promotion in mass media could result change behaviour for its ability to reach large numbers of audience (Kesterton and Cabral De Mello, 2010). The target adolescents in IEC were mostly internet literate, and thus using Internet and social media became the most promising tool to spread information about AFHS and the service provided. A literature review on a potential intervention targeting Indonesian adolescents suggested that an intervention that can improve access to reproductive health service should be delivered in an intervention package through school-based platforms, adolescent youth centres/peer education and technology-based platforms (Oddo, Roshita and Rah, 2019). Promotion of AFHS through health providers, peer educators and electronic media have to be done to eliminate the knowledge of AFHS barrier.

Another demand factor that affected access to AFHS was perceived need for the service. In this study, the adolescents who perceived need for the services were likely to access AFHS, and the same thing happened in South Ethiopia(Cherie, Tura and Teklehaymanot, 2015). In Finland, adolescents who perceived need for school health nurses likely reported difficulties in accessing the service (Kivimäki *et al.*, 2019). Adolescents who need for support would seek for the service if the AFHS available in their community met their needs (Godia *et al.*, 2014). From the perceived need questionnaires data showed that many adolescents received health information by searching information through social media and the Internet, but many of them were not convinced after reading some health information and asked health professionals to confirm the validity of the information. Having good access to sexual and reproductive health rights through life skill (Sexual Reproductive Health (SRH) information, negotiation skill and literacy training) has always been associated with better SRH outcomes and access to health service (Svanemyr *et al.*, 2015).

In spite of available service and demands on the service, barriers from the supply-side factor may hinder the access. This present study revealed free access to the service did not make the respondents access the service because the service was only open during school hours. Students who perceived opportunity cost to leave the school outweighing the benefits of accessing the service would postpone to access the AFHS. The AFHS did not comply with the standards of WHO which said the service whould be open at convenient working hours (World Health Organization, 2012). Godia's research found a lot of adolescents suggested the service to be open until evening and in public holiday and weekend (Godia *et al.*, 2014).

Peer educators can reduce opportunity barriers of AFHS access since students probably met them during school break time at schools. Peer educators could only support peer counselling and information, but they were vital for providing more information and service from health professionals in a health care facility. They became outreach workers to reduce opportunity barriers. Redefining the role of peer educators was an effective way in optimizing peer educators' strategy (Chandra-Mouli, Lane and Wong, 2015). Further study is required to confirm the

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effectiveness of peer educators for bridging the school and the AFHS.

Moreover, this present study found the students could not identify the presence of peer educators at their schools. Information of the peer educators was only distributed to a small group of students. A qualitative study on the effectivity of peer education suggested that the selection of peer educators plays a significant role in the success of peer education program. Peer educators should come from popular groups chosen by their friends (Karaca, Akkus and Sener, 2018). Besides, peer educators also should have listening skills and communication skills to deliver health information. Furthermore, they have to have potential leadership characteristics for being role models, who have time, energy, and willingness to work voluntarily (Bilgiç and Günay, 2014). Such requirements should be taken into account in selecting students as peer educators. Moreover, the health officers could optimalize their roles in communicating health information to students through scheduled monitoring.

Besides, demographics factor that significantly influenced access to AFHS was sex. The research uncovered that girls mostly utilized the AFHS since most of the health officers were female. Respondents who asked health professional about reproductive health information were dominated by girls (Arifah and Sharfina, 2019). Another study found the health officers in the AFHS were mostly female (Afrianti and Tahlil, 2017). Girls were more comfortable to speak with female health officer. A qualitative study in Nepal discovered that male and female adolescents considered the gender of the health officers when accessing the program. In this case, male adolescents were more susceptible to have health problems for their reluctance to access health service. Whereas, some research found boys had higher tendencies to engage in some risky health behaviour, such as, risky sexual behaviour, smoking and drug and alcohol consumption (Sawyer *et al.*, 2012; Kreager *et al.*, 2016). The multicollinearity analysis showed that boys lacked knowledge probably because more girls became peer educators than boys. A study on communication model between boys showed that they did not communicate their health, especially sensitive reproductive health issue, with others. They chose to browse information online rather than speaking directly to their peers (Kurniasih, 2018). A specific approach to encourage and educate boys about the service should be developed to make sure the AFHS was accessible to all gender.

In contrast to other variables, knowledge of reproductive health was not proven to be a significant determinant of access. This finding was different from the previous study in Nepal, showing adolescents who had poor sexual and reproductive health literacy had the high likelihood of poor knowledge of the sexual and reproductive health service (Pandey, Seale and Razee, 2019). Nowadays, adolescents searched for information on the Internet, resulting in a good collection of information from various sources. However, literate adolescents in health information will not believe in the validity of information, and thus they will still ask professionals to confirm information they had.

Moreover, social perception of accessing the AFHS did not affect adolescents to access the AFHS as well. Adolescents who perceived others' opinion about accessing AFHS as an embarrassing action and taboo rarely accessed the AFHS. Similar result was found in Violita's and Hadi's research (2019), which found perceived barrier was not associated with the utilization of reproductive health service. Conversely, a study in Nepal found that perceived barrier determined adolescents' access to AFHS. Barriers to access AFHS involved lack of confidentiality of the service and distance to health facilities. Another factor that affect adolescents' decision to utilize the service was their peers, yet their social

environment and people's perception (Bam *et al.*, 2015).

All in all, this study had limitations in terms of the selection of case and control group samples. There was a significant difference in the respondents' characteristics, such as age, gender and education level between the case and control groups. The proportion of female respondents significantly affected the level of access to the AFHS by the control group and case group. Moreover, the sampling technique for the control group should be examined further in future research for collecting more compatible respondents.

CONCLUSION

Overall, adolescents had insufficient knowledge of AFHS. Some determinant factors of AFHS access included the absence of social barriers, such as knowledge of AFHS, absence of opportunity barrier and perceived need for the service. To improve the access to the service, promotion on social media, internet, and through peer educators should be done. By far, peer educators could increase the access to AFHS by reducing the opportunity barrier. School and primary healthcare centers should set an active referral system to improve the access.

CONFLICT OF INTEREST

Authors declared that there was no conflict of interest in this study.

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ORIGINAL RESEARCH

THE EFFECT OF HEAD'S LEADERSHIP AND NURSES' JOB MOTIVATION ON NURSING PERFORMANCE IN THE HOSPITAL INPATIENT ROOM

Efek Kepemimpinan dan Motivasi Kerja Terhadap Kinerja Perawat di Ruangan Rawat Inap Rumah Sakit

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ABSTRACT

Background: The fluctuated patient satisfaction level shows the need to improve nursing performance. Several factors that can improve nursing performance include leadership, job motivation, management, and environment**.** Leadership and job motivation become fundamental aspects of improving employee performance.
Aim: This study analyzed the role of the head's leadership and nurses' job motivation on nursing performance in the Indonesian Red Cross Hospital Bogor's inpatient room.
Methods: This study sampled 150 nurses in the inpatient room of the Indonesian Red Cross Hospital Bogor using the incidental random sampling technique. This study employed a path analysis with three variables: the head's leadership and job motivation as exogenous variables and nursing performance as an endogenous variable.
Results: Leadership of the heads of the inpatient room could increase job motivation and nursing performance.
Conclusion: Managers' leadership and job motivation could partially and simultaneously affect the level of nurses' performance. The Indonesian Red Cross Hospital Bogor could provide regular training to every head of the room to enhance their leadership and nurses' job motivation.

Keywords: leadership, job motivation, nurses' work performance.

ABSTRAK

Latar Belakang*: Tingkat kepuasan pasien yang fluktuatif menunjukkan kinerja perawat perlu ditingkatkan. Beberapa faktor yang dapat meningkatkan kinerja perawat adalah kepemimpinan, motivasi kerja, manajemen dan lingkungan. Kepemimpinan dan motivasi kerja merupakan aspek yang mendasar dalam meningkatkan kinerja karyawan.*
Tujuan*: Penelitian ini menganalisis peran kepemimpinan dan motivasi kerja terhadap kinerja perawat yang ada di ruangan rawat inap di Rumah Sakit Palang Merah Indonesia Bogor.*
Metode: *Penelitian ini memilih sampel semua perawat di ruangan rawat inap sejumlah 150 orang dengan menggunakan teknik pengambilan sampel acak insidentil. Analisis data menggunakan metode analisis jalur dengan tiga variable yaitu peran kepemimpinan dan motivasi kerja sebagai variabel eksogen dan kinerja perawat sebagai variabel endogen.*
Hasil*: Hasil pengujian hipotesis tersebut pada dasarnya berimplikasi bahwa peran kepemimpinan kepala ruangan dapat meningkatkan motivasi kerja perawat serta kinerja perawat dapat menjadi lebih baik.*
Kesimpulan*: Secara parsial maupun simultan, peran kepemimpinan kepala dan motivasi kerja dapat mempengaruhi tingkat kinerja dari para perawat. Rumah Sakit Palang Merah Indonesia Bogor dapat memberikan pelatihan rutin kepada setiap kepala ruangan untuk meningkatkan peran kepemimpinan dan motivasi kerja perawat.*

Kata kunci: *kepemimpinan, motivasi kerja, kinerja perawat.*

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INTRODUCTION

To provide effective and efficient services to the community, public service providers should have excellent performance. Government-owned or private-public service providers have to possess integrity, professionalism, neutrality, and freedom from any pressure and Corruption, Collusion, and Nepotism (KKN) (Hayat, 2014). Public health service providers specifically have to yield optimal performance to serve the community. Humans are the driving aspect and determine the success of an organization or institution. Notably, public health service providers must have proper assessment or evaluation and get attention from leaders. The Law of Republic of Indonesia No. 36 of 2014 concerning Health Workers stated that health workers have an essential role in health services. Employees, or particularly health workers, are essential for every organization to effectively and efficiently achieve their goals. An organization expects its members not only to be competent, skilled, or capable of carrying out a task but also to be willing to work hard and achieve optimal results for an organization or institution (Indriyati and Hayat, 2015).

The Law of Republic of Indonesia No.44 of 2009 defines hospitals as an integral part of the entire health care system. The Indonesian Ministry of Health outlines that public hospitals are in charge of efficiently and effectively carrying out health services by prioritizing healing and recovery in a harmoniously integrated manner to improve, prevent, and carry out referrals. It is expected that hospitals can carry out affordable quality health services and optimal results to satisfy the customers.

The on-going hospital service system has to be reviewed to anticipate global competition in this globalization era. It should meet the community needs due to changes in the epidemic, the development of science and technology, and the socio-economic structure. Public scrutiny and criticism, mainly dissatisfaction with health services, become one of the hospitals' problems. Therefore, health workers' performance is the key to serve patients more efficiently and effectively and with productive and excellent services (Gunawan, 2016).

If health workers do not provide excellent services, they will be detrimental to patients and other parties associated with various administrative matters (Rakhmawati, 2008). For example, slow and convoluted new patient registration will insecure patients' data. However, excellent public service will be challenging to achieve when health workers cannot improve their performance.

The success of public services at the Indonesian Red Cross Hospital Bogoris is inseparably related to health workers' productivity and performance. The percentages of hospital visitor satisfaction levels within 3 years were 84.66% (2013), 83.55% (2014), and 82.29% (2015). While, the Bed Occupancy Rates (BOR) was at 77.80% (2014) and 65.71% (2015). The data show that the hopsital's patient satisfaction level decreased due to decreased service performance levels. Gunawan (2016) states that health workers' performance strongly influences service performance.

The decrease in health workers' performance seems not to stand alone. It turns out to be correlated or influenced by various factors. Presumably, the role of head's leadership and employee job motivation can be considered as two dominant factors that possibly had a positive effect on the health workers' performance at the hospital. This assumption is based on some propositions.

First, how far the role of leadership between the leaders and staff influences achieving common goals. Leadership can

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also be seen in the process of cooperation between leaders and staff. It can respond to employee performance directly or indirectly. The 2011-2015 hospital visitor satisfaction level shows that leadership can certainly positively affect the health workers' performance at the hospital.

Second, job motivation is a driving force to improve health workers' performance. In a functional context, job motivation can also have a positive effect on health workers' performance. After being studied in-depth and considering various factors, this study assumes that head's leadership and nurses' job motivation may positively affect the health workers' performance. Organizations that succeed in achieving their goals and fulfilling their social responsibilities will significantly depend on managers or leaders. Leaders' quality becomes the most important factor in the success or failure of both business-oriented and public organizations.

This study lay upon the assumption that the hospital administration focuses on improving health workers' performance to serve better services. It is unclear whether or not problems in resources apparatus caused a decrease in patient satisfaction level. It is important to identify means of providing excellent services from the perspective of leadership and job motivation.

Leadership style is a method used by a leader to influence the behavior of others. A leader should have specific characteristics, understand leadership characteristics, and have three leadership components, such as leader, followers, and situation. Paramita (2011) mention several effective leadership styles in an organization: charismatic, authoritarian, democratic, and moral. While work ethic contributes relatively small but is still significantly used as a dimension that may affect an organization's performance. However, leadership and work ethic should simultaneously give a relatively large and significant contribution to improving employee performance and organizational development. The research conducted by Paramita (2011) used a quantitative approach, as this present study did. Their study involved leadership style and work ethic that presumably affect performance, while this present study researched leadership and job motivation. The differences as mentioned above and similarities became references in this present study to understand how they structured the research variables and how leadership influences performance.

Warella, Rachmawati and Hidayat (2006) found a mutual relationship between employee job motivation and performance. The higher the job motivation, the higher the employee performance level. While they also discovered the same results in leadership and employee performance variables. Moreover, they found a significant relationship between job motivation, workability, leadership styles, and employee performance. Another study conducted by Tri Sasongko (2016) found that leadership style negatively influences employee performance (t-value = 2.756), but job motivation does not affect it. Referring to other previous iesstudies, this study brought the importance of analyzing the effect of leaders' leadership and employee job satisfaction on their performance. The fluctuated patient satisfaction level at the Indonesian Red Cross Hospital Bogor shows inoptimal nursing performance. According to the Head of the Medical Records Division, a decrease in inpatient visits and poor services by inpatient nurses indicate a lack of performance. The outpatient satisfaction level in 2014 and 2015 decreased compared to 2013. Moreover, a decrease in BOR occurred in the same year.

Based on the background of the issue, this study only discussed factors that might affect employee performance at the

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Indonesian Red Cross Hospital Bogor. More comprehensive findings might come from identifying all possibly affecting factors, but it is the limitation of this study that cannot research all at the same time. This study only picked leadership and job motivation, which effect on employee performance was in question.

METHODS

This study used a quantitative method and path analysis, which is mainly used for (1) explaining the study's phenomenon or problem (Kuncoro, 2007). This study analyzed the effect of leadership and job motivation (X1 and X2) on nurse's performance (Y); (2) predicting the value of the dependent variable (Y) based on the value of the independent variables (X); (3) determining factors that identify the effect of the independent variable (X) on the dependent variable (Y); (4) exploring the mechanism (pathways) of the effect of the independent variable (X) on the dependent variable (Y).

According to Covey (2005), leadership is a proactive effort to strengthen primary value and potency from people around us through four dimensions. These dimensions were developed into 12 indicators in the questionnaire. First, the role model was defined from (1) attitude, (2) nature, and (3) behavior. Second, pioneer was assessed from (4) organizational strategy, (1) organizational goals, and (2) organizational vision. Third, the coordinator was reviewed from (1) work systems development, (2) work systems management, and (3) work systems directives. Lastly, the advocator was broken down into (1) work focus, (2) work methods, and (3) teamwork.

This study also adopted the hierarchy of needs by Maslow (2013). The job motivation variable had five dimensions: physiological needs, security needs, social needs, appreciation needs, and self-actualization needs. These dimensions were then developed into twelve indicators in the questionnaire items. Physiological needs were measured from (1) life needs, (2) service, and (3) entertainment. Security needs were broken down into (1) internal situation and (2) external situation. In addition, social needs were seen from (1) togetherness and (2) teamwork. Appreciation needs were defined based on (1) leader appreciation to staff, (2) staff appreciation to leaders, and (3) appreciation among staff. Self-actualization needs were described from (1) self-image and (2) work performance.

There were twenty-one dimensions for staff performance variable, such as clarity, assistance, incentive, evaluation, accuracy, and social life. These dimensions consisted of 14 indicators. Clarity was viewed from (1) understanding about tasks, (2) perception, (3) regulation, and (4) information. The assistance dimension consisted of (1) individual support, (2) group support, and (3) organization support. Incentive dimension was viewed from (1) salary, (2) incentive, (3) compensation, and (4) bonus. The evaluation dimension consisted of (1) assessment, (2) training, (3) supervision, and (4) counseling. Accuracy dimension included (1) individual task, (2) group task, and (3) organization task. Last but not least, the social life dimension was assessed from (1) benefit, (2) teamwork, and (3) loss.

The questionnaires showed 0.159 validity, and the reliability scores on leadership, motivation, and performance variables were 0.912, 0.785, and 0.897, respectively. The results concluded that the questionnaires used were valid and reliable. Data collection was conducted through self-administered questionnaires from May to June 2016 and then analyzed using SPSS software.

This study's unit of analysis was inpatient rooms at the Indonesian Red

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Cross Hospital Bogor, located at Jl. Raya Pajajaran No. 80 Bogor. The population was 241 nurses in 12 inpatient rooms. The researchers first obtained permission from respondents during the data collection by distributing informed consent, anonymity, confidentiality, and freedom sheet. According to Sugiyono (2011), samples taken from the population must be truly representative. This study calculated the exact number of samples using the Slovin formula (Bungin and Burhan, 2005). The final samples obtained were 150 nurses. It lay upon the selected confidence level of 95%, the alpha significance level of 5%, and the r table of 0.159.

The random sampling was used when the researchers selected the respondents they met during the data collection (Sugiyono, 2016). To be considered the samples, the respondents should be permanent inpatient nurses willing to be respondents. Meanwhile, inpatient nurses who were on leave or sick and worked for less than one year were not selected. The total amount of the sample fraction was adjusted with the number of units, while the fi value was calculated through a random sampling method.

There were nineteen respondents in Dahlia Room, nine in VK Room, fourteen in Orchid Room, sixteen in Rose Pavilion, twelve in Jasmine Pavilion, and eleven in Flamboyant Pavilion. Additionally, there were ten respondents in Allamanda Pavilion, eleven in Aster Room, twelve in Magnolia Room, fourteen in Gardenia Room, eleven in Chrysanthemum Room, and eleven in Ixora Room.

RESULTS AND DISCUSSION

Respondents'Characteristics

Respondents' characteristics include age, gender, latest education, work period, and social status. Table 1 shows that the majority of respondents were female (72%) and had Associate Degrees (Diploma III) (91.3%). Most of the respondents were married (67.3%). Some of them were aged around 31 to 40 years (30.7%). Nearly half have worked for more than ten years (45.3%).

Distribution of Respondents' Response

As many as 63.5% of respondents agreed and strongly disagreed with the role model's function to improve staff performance. Covey (2005) asserts the role model is a characteristic that drives someone to be a leader. This study also obtains 44% in total disagreed with the role of pioneer in improving staff performance. Moreover, 89.3% agreed that the coordinator dimension might improve staff performance.

A total of 77.3% of respondents agreed that the advocator dimension also may increase staff performance as Covey (2005) states that empowering a leader's skill is an internal potential that can be inherited to each staff. Table 2 shows that 54.9% in total did not agree that the dimension of the physiological need may improve staff performance. However, 73.2% of the respondents agreed that security needs may be the one that may improve staff performance.

There were 65.5% of respondents agreed that appreciation needs may make employees perform well. Besides, 77% of the respondents positively responded towards the function of self-actualization in improving their performance. It is also relevant to the hierarchy theory by Maslow (2013). In terms of staff performance itself, 65.2% agreed that tasks' clarity may encourage staff to perform better at work.

Moreover, 67.1% of the respondents agreed that the assistance dimension was thought to improve task performance. Improvement in task performance also has something to do with the incentive, as 78.2% have said in the questionnaire. As many as 70.5% of the respondents also agreed that the evaluation dimension may

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encourage staff to perform well. The table also shows that 77.7% agreed that the validity dimension may also enhance staff performance, and 74.4% of the respondents thought employee social life is possible to improve their performance.

Table 1. Distribution of Respondents' Characteristics.

Confounding Variables	Frequency	Percentage	Validity Score	Cumulative Frequency
Gender				
Male	42	28	2.8	2.8
Female	108	72	7.2	100.00
Total	150	100		
Education				
Senior High School	2	1.3	1.3	1.3
Diploma III/Associate	137	91.3	91.3	92.7
Degrees III	11	7.3	7.3	100.00
Bachelors	150	100		
Total				
Work Period				
<1 year	19	12.7	12.7	12.7
1-3 years	27	18.0	18.0	30.7
3-6years	23	15.3	15.3	46.0
6-10 years	13	8.7	8.7	54.7
>10 years	68	45.3	45.3	100.00
Total	150	100		
Marital Status				
Married	101	67.3	67.3	67.3
Single	49	32.7	32.7	100.00
Total	150	100		
Age				
21-25years	42	28	28	28
26-30years	38	25.3	25.3	53.3
31-40years	46	30.7	30.7	84
41-50years	21	14	14	98
>50 years	3	2	2	100.00
Total	150	100		

Source: Primary Data

Calculation of Path Analysis

This study's path analysis model uses two independent variables as exogenous variables and one dependent variable as an endogenous variable. The exogenous variables are leadership (X_1) and job motivation (X_2), while the endogenous variable is nursing performance (Y).

The equation structure of the path diagram model ($Y = \rho yx_1X_1 + \rho yx_2X_2 + \varepsilon$) could identify the causal relationship between these variables. Overall, there are three path coefficients, including 1) path coefficient on the effect of leadership on nursing performance (ρyx_1X_1); 2) path coefficient on the effect of job motivation on nursing performance (ρyx_2X_2); and 3) path coefficient on the effect of other variables on nursing performance ($\rho y\varepsilon$). Furthermore, the effect of exogenous variables on endogenous variables and the significance test of structural equation models were calculated simultaneously

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Table 2. Distribution of Respondents' Response.

Variable	Dimension	Strongly disagree (1)	Disagree (2)	Quite Disagree (3)	Agree (4)	Strongly Agree (5)	Total
Leadership role	Role model	13.9% (125)	14% (126)	8.6% (77)	28.1% (253)	35.4% (319)	100%
	Pioneer	14.8% (111)	19.2% (144)	10% (75)	34% (255)	22% (165)	100%
	Coordinator	2.1% (16)	3.1% (23)	5.5% (41)	44.1% (331)	45.2% (339)	100%
	Advocator	5.6% (50)	10.1% (91)	7.7% (69)	42.7% (384)	34% (306)	100%
Job motivation	Physiological Needs	20.4% (92)	22.9% (103)	11.6% (52)	19.1% (86)	26% (117)	100%
	Security Needs	5% (30)	11% (66)	10.8% (65)	38.5% (231)	34.7% (208)	100%
	Appreciation Needs	6.2% (28)	16.9% (76)	11.3% (51)	42.4% (191)	23.1% (104)	100%
	Self-actualization Needs	2% (6)	6.3% (19)	14.7% (44)	55.3% (166)	21.7% (65)	100%
Staff Performance	Clarity	6% (36)	14.5% (87)	14.3% (86)	42.5% (255)	22.7% (136)	100%
	Assistance	4.7% (21)	13.3% (60)	12.9% (58)	36% (162)	33.1% (149)	100%
	Incentive	2.7% (16)	9.3% (56)	9.8% (59)	43.5% (261)	34.7% (208)	100%
	Evaluation	2.7% (16)	10.3% (62)	16.5% (99)	47.8% (28.7)	22.7% (136)	100%
	Accuracy	9% (4)	7.9% (35)	13.6% (61)	60.4% (272)	17.3% (79)	100%
	Social life	2.9% (13)	9.8% (44)	12.9% (58)	44.4% (200)	30% (135)	100%

Based on Table 3, the correlation coefficient between the effect of leadership and job motivation on nursing performance was 0.748. It shows that the effect of leadership and job motivation on nursing performance was strong.

The determination coefficient of R square or R^2_{yx2x1} equals to 0.559 or 55.9%. It means that a 55.9% variation in nursing performance could be further defined by variations in the effect of leadership and job motivation. In other words, the effect of leadership and job motivation on nursing performance was 55.9%. Meanwhile, the effect of other variables that this study did not examine was 44.1%.

Table 3. Path Analysis of the Effect of Head's leadership and Nurses' Job Motivation on Nursing Performance.

Model	R	R Square	Adjust R Square	Std Error
1	.748	.559	.553	6.576

Source: Primary data

The results indicate that the path coefficient of non-examined variables on nursing performance ($\rho_{Y\varepsilon}$) was 0.664. Based on the regression equation, the coefficient of the effect of leadership on nursing performance (ρyx_1X_1) was at 0.473. While, the coefficient of the effect of job motivation on nursing performance (ρyx_2X_2) was at 0.745. Overall, the structural equation model would be$\acute{Y}$=

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$9.157 + 0,473X_1 + 0,745X_2 + 0,664\varepsilon$.

Based on the F test (ANOVA), the path coefficient shows two independent variables that affected the dependent variable. Thus, the path analysis results could be made into structural equations as in the path diagram model.

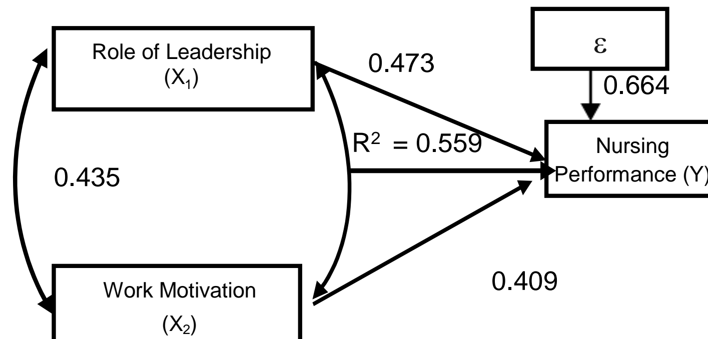

Figure 1.
Results of Structure Diagram Model

Direct, Indirect, and Total Effect of Leadership on Nursing Performance

The score of the direct effect of leadership (X_1) on nursing performance (Y) was 0.473 x 0.473, which equals to 22.4%. Meanwhile, the score of the indirect effect of leadership (X_1) on nursing performance (Y) through job motivation (X_2) was 0.473 x 0.435 x 0.409, which equals to 8.4%. Thus, the total score of the effect of leadership (X_1) on nursing performance (Y) was at 30.8%. In conclusion, leadership could determine nursing performance as much as 30.8%.

Effect of Job Motivation on Nursing Performance

The score of the direct effect of job motivation (X_2) on nursing performance (Y) was 0.409 x 0.409, which equals to 16.7%. Meanwhile, the score of the indirect effect of job motivation (X_2) on nursing performance (Y) through leadership (X_1) was0.409 x 0.435 x 0.473, which equals to 8.4%. Thus, the total score of the effect of job motivation (X_2) on nursing performance (Y) was at 25.1%. In other words, job motivation could contribute to nursing performance by 25.1%.

This study's discussion is based on the causality relationship of leadership and job motivation as antecedent variables (a cause) and nursing performance as a consequent variable (a phenomenon or consequence). With this idea, the discussion only includes analyzing both the partial and joint effects of leadership and job motivation on nursing performance.

The results of this study indicate that leadership affected nursing performance as much as 42.4%. This study found a meaningful causal relationship (cause-effect) of leadership and nursing performance. In other words, if leadership is improved, nursing performance will simultaneously increase too.

The theoretical approach by Covey (2005) explains that leadership is a proactive effort to strengthen actual values and potencies of people reflected on four leadership roles, namely role model, pioneer, coordinator, and advocator. The results show that leaders as a pioneer had a dominant response from the respondents. Leadership is expected to help give stimulus on carrying, planning, and explaining tasks. It also aims to give employees the same view of the hospital's

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vision and mission and carry out every mandated task (Covey, 2005).

The respondents argued leadership could provide self-reflection on a good leader's attitudes and behaviors in performing and completing tasks. As leadership is considered as a pioneer, every leader can be the one who initiates to give an example of behaving or acting following the norms, ethics, and SOPs at the Indonesian Red Cross Hospital Bogor.

Table 4. Summary of Direct, Indirect, Total, and Joint Effects.

Effect of Variable	Path Coefficient	Causal Effect (%)				
		Direct	Indirect		Total	Joint Effect
			Through X_1	Through X_2		
$X_1 \rightarrow Y$	0.473	22.4%	-	8.4%	30.8%	-
$X_2 \rightarrow Y$	0.409	16.7%	8.4%	-	25.1%	-
$\varepsilon \rightarrow Y$	0.664	44.1%	-	-	-	55.9%

Source: Primary data.

This study's results are in line with the results of the research conducted by Putra (2013). He found that leadership affected employees' performance, as indicated by the value of β = 0.388. If leadership increases, employees' performance will increase positively (Putra, 2013). The same thing is found in the research conducted by Wiranata (2011). The correlation value of leadership and employees' performance was at 0.73, meaning a strong relationship between leadership and employees' performance.

Similarly to this study's findings, Isneini (2017) found that an instructional leadership style could complete nursing documentation at 79.8%, while a consultative leadership style had complete documentation at 81.8%. Moreover, the participative leadership style could document complete nursing care at 85.3%. The delegation leadership style could complete documentation at 83.7% (Halimatussakdiah, Ampera and Isneini, 2015).

In line with this study's results, Sari (2019) discovered no significant relationship of head's leadership style and nursing performance in the inpatient room of the GMIM Pancaran Kasih Manado Hospital. It can be said that the leadership style cannot be ascertained because each head of the room had a different way to organize and direct his subordinates. Further analysis of leadership style's effect can be done when the heads use a democratic, participatory, or autocratic leadership style (Gannika and Buanasasi, 2019).

This present study pointed out that leadership had the lowest value among the other dimensions. The head's leadership could be seen from their initiative, characteristics, and competencies that the nurses could emulate. Leaders can also give nurses trust to perform their tasks.

The partial effect of job motivation on nursing performance at the hospital was 37.80%. The significant effect indicates a meaningful causal relationship (cause-effect) between job motivation and nursing performance. In other words, job motivation will improve, so will nursing performance. A safe and conducive working environment and friendly colleagues inside or outside the hospital can improve job motivation (Finarti, Bachri and Arifin, 2016).

With similar findings, Putra (2013) found that motivation affected employees' performance as indicated by the value of β = 0.168, meaning that motivation and employees' performance will increase

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simultaneously. Motivation could be seen from employees' needs for achievement, patience, and honesty in facing workplace problems, unyielding attitude, and resilience towards failure (Putra, 2013).

The most desired dimension of job motivation was motivation to achieve good performance. The dimension of physiological needs has the lowest value among the other dimensions, including daily recreation needs. When nurses feel bored, recreational activities might refresh and encourage them to perform better at work. Physiological needs may improve employees' productivity, efficiency, and effectiveness to achieve organizational goals. It avoids failure in work reporting an unexpected absence and substituting employees by the organization or voluntarily. When employees resign, organizations must spend resources recruiting, training, and developing replacements (Jason *et al.*, 2011).

Fulfilled physiological needs can provide good job motivation. Fulfilling the recreation needs can eliminate boredom and improve job motivation, resulting in better performance (Wirawan, 2015). Considering physiological needs is undoubtedly much more complicated than the quality of health services that focuses on patient safety (Iqbal, Syed-abdul and Li, 2015). The quality of health services is a multidimensional concept, in which patient safety also needs to be improved to achieve better performance (Ghahramanian *et al.*, 2017). The effect of leadership and job motivation on nursing performance was 55.9%. The double hypothesis tests found a direct effect of leadership, and nursing performance (22.4%) was greater than that of job motivation, which only reached 16.7%. As four dimensions in leadership, such as role model, pioneer, coordinator, and advocator, could support leaders to be a good role model, nurses can get motivated to perform better.

Additionally, there was a partial effect of job motivation on nursing performance by 16.7%. It indicates a meaningful causal relationship (cause-effect) between job motivation and nursing performance. The results also prove that motivation was one factor that affects the level of nursing performance at the Indonesian Red Cross Hospital Bogor.

Leaders' perceptions of organizational risks are primarily based on technological solutions to protect organizational assets and their belief that staffs usually adhere to the established organizational security policies (Phipps, Prieto and Verma, 2012). This indicates that leadership plays a role as a leveraging factor for the organization.

Leaders who perform themselves as pioneers will be able to strengthen employees' understanding of vision and mission. Staff with a high level of knowledge about the organization's vision and mission will affect motivation and inspiration to perform well at work (Darbi, 2012). A high level of knowledge about the organization's vision and mission will make staff think critically and pursue better work positions with increased enthusiasm and innovation (Orhan, Erdoğan and Durmaz, 2014). Leadership could construct values that will undoubtedly help form an organizational culture to give a more significant contribution to staff and patient satisfaction (Barrow, 2019). Moreover, it also could increase staff involvement in their work. Strong hierarchical orientation and results-based options from organizational culture as good leadership outputs can improve hospital performance (Sopoh *et al.*, 2018).

Apart from the results of analysis, this study still had some shortcomings. It suggests further research to reach more units of analysis at the hospital.

CONCLUSION

Leadership and job motivation could affect the level of nursing performance. Leadership and job motivation could lead to a high nursing performance level at the Indonesian Red Cross Hospital Bogor. It is recommended that hospitals have to improve leadership by giving rewards to each head of the room and nurses to provide the best services to patients. It is important for the Indonesian Red Cross Hospital Bogor to always simultaneously improve the head's leadership by providing an in-depth leadership program to strengthen understanding of vision and mission and evaluating their performance every year to improve their performance.

CONFLICT OF INTEREST

The authors declared that there was no conflict of interest in this study.

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ORIGINAL RESEARCH

THE PREPAREDNESS FOR THE COVID-19 PANDEMIC MANAGEMENT IN INDONESIA

Kesiapsiagaan Penanganan Pandemi COVID-19 di Indonesia

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ABSTRACT

Background: The increasing number of COVID-19 cases requires health worker preparedness on the frontline of providing healthcare services to people infected with COVID-19. As many health workers have been infected with COVID-19, this worsens the COVID-19 management. In Indonesia, until 27 April 2020, at least 47 nurses were positive COVID-19, and the number of nurses under supervision and treatment were 546 and 44 people, respectively.
Aims: This study analyzed health workers' preparedness in managing the pandemic to reduce the risk of infection through medical services provided.
Methods: This study used a descriptive qualitative method with a non-systematic literature review approach. Secondary data were collected from other previous studies and public documents related to COVID-19 disaster management in Indonesia. They were then analyzed using a thematic analysis to identify patterns and understand data information better.
Results: The results show that the ratio of health workers who have managed COVID-19 patients was not ideal. In Indonesia, the ratios of doctors and nurses involved in the COVID-19 management were 0.4 and 2.1, respectively. It was far beyond the ration in developed countries which pose the ratio of doctors and nurses were 2.5 and 5.5, respectively. Besides, most a number of adequate medical devices have been distributed to referral hospitals in almost every province. They have received 1,997,684 pieces of surgical masks 1,659,955 units of Personal Protective Equipment (PPE), and 1,011,130 units of Rapid Test kits distributed to various regions, provinces, and districts, as well as hospitals across Indonesia.
Conclusion: The number of human resources, operational standards, and health care facilities affect preparedness for providing healthcare services to manage the pandemic disaster.

Keywords: health workers, medical services, pandemic disaster management, COVID-19.

ABSTRAK

Latar Belakang: *Peningkatan kasus COVID-19 menuntut kesiapsiagaan dari tenaga kesehatan sebagai garda terdepan untuk memberikan pelayanan medis dalam penanganan korban terinfeksi COVID-19. Banyaknya petugas medis yang telah terinfeksi COVID-19 menjadikan penangan COVID-19 semakin sulit. Di Indonesia, sampai tanggal 27 April 2020, setidaknya telah ada 47 perawat dinyatakan positif dengan jumlah perawat berstatus ODP dan PDP masing-masing berjumlah 546 orang dan 44 orang.*
Tujuan: *Penelitian ini mengidentifikasi kesiapsiagaan penanganan pandemi dalam menekan potensi resiko akibat wabah COVID-19 melalui layanan medis yang diberikan.*
Metode: *Penelitian menggunakan kualitatif deskriptif dengan pendekatan studi pustaka non sistematis. Data sekunder yang dikumpulkan berupa referensi terdahulu serta dokumen publik terkait dengan penanganan bencana COVID-19 di Indonesia. Teknik analisa data menggunakan tematik analisis untuk identifikasi pola dan memahami data informasi.*
Hasil: *Rasio tenaga kesehatan yang menangani pasien COVID-19 belum ideal. Rasio jumlah tenaga dokter dan tenaga perawat masing-masing 0,4 dan 2,1. Rasio ini masih jauh tertinggal dari negara maju dimana rasio tenaga kesehatannya sudah diatas angka 2,5 tenaga dokter dan 5,5 untuk tenaga perawat. Kemudian, secara umum rumah sakit rujukan penanganan COVID-19 hampir di setiap provinsi yang telah didukung dengan distribusi alat material kesehatan ke berbagai daerah, provinsi dan kabupaten, serta rumah-rumah sakit yang membutuhkan di seluruh wilayah Indonesia berupa masker bedah (1.997.684 buah), APD sebanyak 1.659.955 unit, ditambah dengan alat rapid test sebanyak 1.011.130 unit.*
Kesimpulan: *Kesiapsiagaan dalam memberikan layanan medis terhadap penanganan bencana pandemi dipengaruhi oleh jumlah SDM, standar operational dan sarana-prasarana fasilitias kesehatan.*

Kata kunci*: Tenaga Kesehatan; Pelayanan Medis; Penanganan Bencana Pandemi; COVID-19*

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INTRODUCTION

Coronavirus is a virus transmitted through a pathogenic infection of the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) that has firstly appeared in Wuhan, China, and spread throughout the world (Adnan *et al*., 2020). This virus is now known as Coronavirus Disease 2019 (COVID-19) affecting the lives of global society (Arshad *et al*., 2020). In Indonesia, COVID-19 firstly emerged at the beginning of March 2020 when the government claimed that two Indonesian citizens got infected. Due to its rapid spread, several regions in Indonesia have been vulnerable, such as Jakarta, Surakarta, Depok, and several others (Nanggala, 2020). Two months later, the National COVID-19 Handling Task Force reported the trend of positive COVID-19 cases in Indonesia has continued increasing every day. The number of cases reached 1,528 with an average of 100 new cases every day from 18 - 30 March 2020. Then, on April 30, 2020, the total cases increased to 10,118 cases, which reached 300 new cases from 3-11 April 2020, and an average increase of new cases reached 400 cases per day on 15-27 April 2020. On May 31, 2020, the total cases in Indonesia rose to 26,473, with daily average cases of 500 per day from 1- 13 May 2020 and increased again to 600 cases per day from 17-29 May 2020, with the highest increase of 900 cases on May 21, 2020. However, what is even more depressing is the increasing number of health workers infected with COVID-19, until 27 April 2020, at least 47 infected nurses, 546 people under supervision, and 44 patients under treatment (Amindoni, 2020).

Health workers as the front liners in healthcare services, who have significant roles and responsibilities for taking care victims during worse disasters, need to be more prepared (Septiana and Fatih, 2019). One of the strategies is to take responsive actions in controlling people infected to prevent human-to-human transmission (Lai *et al*., 2020). Thus, effective disaster management can be done by increasing the intensity of coordination and communication, eliminating ego-sectoral attitudes, and having competent human resources (Ariyanto, 2018).

Non-natural disaster events may result in the mortality rate of 1.5 times higher than natural disasters (Pane *et al*., 2018). Thus, effective, significant, and impactful disaster management is required by meticulously planning disaster mapping, the placement of health workers, and clear division of works (Faradilla, 2018). Regarding these plans, the health sector already has regulations and service standards for health workers supported by public participation in disaster management (Hutagaol, 2019). Nevertheless, the lack of institutional preparedness for the occurrence of disasters leads to poor disaster preparedness (Huriah and Farida, 2010). Considering a high gap of knowledge about COVID-19 management, community organizations need to contribute to create a database related to COVID-19 at the local, regional, and international levels (Ling *et al*., 2020).

Many studies have investigated COVID-19 since the outbreak has widely spread to all countries worldwide and posed a risk of disasters on global public health. A study conducted by Ling *et al.* (2020), for instance, has suggested that to prevent the widespread of COVID-19 from infected patients to uninfected people, the community should maintain hand hygiene, put on standard N-95 masks and personal protective equipment (PPE). Furthermore, the government needs to establish a clear set of protocols and prevention procedures, as well as communication and cooperation

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with all stakeholders (Ling *et al.*, 2020). Research by Jiang *et al.* (2020) shows that the COVID-19 are quickly transmitted through interaction and close contact between humans (Jiang *et al.*, 2020). Research by Lai *et al.* (2020) has stated that the emergence of SARS-CoV-2 and novel coronavirus (2019-nCoV) in China has posed a serious threat of global community health (Lai *et al.*, 2020).

Since COVID-19 has caused abundant problems and negative impacts on global public health, the preparedness of health workers in providing available and urgent healthcare services is crucial. Hence, this study aimed to analyze the preparedness of health workers in providing healthcare services to reduce the potential risk of transmission between humans. This study looked at various literature studies, previous research, documents, and many articles related to the COVID-19 pandemic management in Indonesia. Since a good system of pandemic management is expected to prevent the widespread of COVID-19, this study reviewed the data sources in terms of standard management procedures, human resources, and health facilities.

METHOD

This study used a descriptive-qualitative method with a literature study approach to obtain data and information. A descriptive-qualitative study could provide in-depth descriptions using qualitative research data of health workers' preparedness in providing healthcare services during the pandemic (Bandur, 2019). Meanwhile, the literature study approach obtained research information from books, the internet, and previous relevant research (Farida, 2019).

A non-systematic literature review was employed to collect secondary data, such as documents of health protocols on COVID-19 management released by the COVID-19 Handling Taskforce of Indonesia and WHO. Additionally, this study used data on the Kompas Research and Development Center website which released the ratio of health workers for managing COVID-19 in various countries, as well as data from the Indonesian Ministry of Health regarding the number of infrastructure and health facilities in the COVID-19 management. The data were retrieved from the Task Force for the Acceleration of Handling COVID-19 (covid-19.go.id), the Indonesian Ministry of Health (kemenkes.go.id), and Kompas Research and Development Center (kompas.com) from March 1 to May 31, 2020, when positive cases continued to increase significantly.

The data analysis technique used was a thematic analysis to identify patterns of data or the literacy of information (Heriyanto, 2018). The analysis was carried out by understanding information from the data sources and then codifying data for classification according to the themes (SOP, Health Human Resources, and Health Facilities). Finally, the step of data analysis was drawing out conclusions or verification of qualitative research data by interpreting meaning through the data reflection.

RESULTS AND DISCUSSION

Indonesia has categorized the COVID-19 pandemic as a non-natural disaster or a disease outbreak. It has obliged a systemic effort to overcome, suppress the spread, and decline the number of the cases. Non-natural disaster events may result in a higher mortality rate than natural disasters (Pane, *et. al.*, 2018). Therefore, it becomes a joint authority and responsibility between the central and local governments to establish public health protection from the threats of COVID-19 or potential health risks that can lead to public health emergencies. Though the health

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sector already has regulatory standards related to health services, the disaster management needs to be strengthened through community participation (Hutagaol, 2019). In the COVID-19 disaster management, the government needs to pay attention to some steps that have been carried out, especially in implementing the management policy. To quickly deal with COVID-19, it requires disaster management planning; this planning is expected to reduce the disease transmission and mortality rate. One of the mitigation measures undertaken by the government was providing medical services to health workers in handling positive confirmed patients.

Standard Operating Procedures in COVID-19 Management

The rapid COVID-19 transmission through human interaction has resulted in a risk of death threatening the whole community health (Jiang *et al*., 2020; Lupia *et al*., 2020). Since it gives negative consequences, appropriate standard procedures in handling medical services for infected patients are necessary. The medical service standard is used as a guide to provide treatment measures that are useful to prevent the transmission from one patient to another or to health workers who make close contact with them. Thus, the standard procedure can support safe medical services, both for COVID-19 patients and health workers. Standard Operating Procedures (SOPs) for emergency treatment have been proved to affect the preparedness of health workers

Table 1. Medical Service Standard Procedures for Handling COVID-19 Patients.

Medical Services	Standard Procedures
Placement Management	- Performing immediate isolation to suspected and confirmed patients. - Explaining every action that will be given to patients to reduce stress and anxiety. - Placing patients in separate rooms if conditions permit. - Separating each suspected and confirmed case. - Setting the distance between patients at least 1 meter. - Not placing more than one patient in one bed.
Environmental Management	- Limiting the movement of patients to reduce the possibility of infection in health care facilities. - Planning patient transfer if necessary. Instructing health workers and visitors to wear personal protective equipment (PPE). - Conducting periodic cleaning and disinfection around the environment. - In carrying out medical service procedures in the COVID-19 disaster management, each health worker has put on appropriate personal protective equipment (PPE) when screening patients at the triage point.
Visitor Management	- Limiting the number of visitors per patient. - Wearing personal protective equipment and recording each visit to healthcare facilities.

Source: World Health Organization, 2020

in facing disasters (Gultom, 2012). Thus, internal regulations regarding safety in handling disaster victims need to be formulated by hospitals (Berliana and Widowati, 2019).

In carrying out medical service procedures in the COVID-19 disaster management, each health worker has put on appropriate personal protective equipment (PPE) when screening patients at the triage point. Besides, health workers have to provide medical masks to all patients who show flu-like symptoms or report possible COVID-19 infections. Furthermore, they need to always remind all patients to practice good respiratory and hand hygiene.

Based on Table 1, the procedures for handling COVID-19 patients must be done through the management of patient placement, environmental management, and visitors management. Confirmed positive patients should be placed in at least one meter from other patients to minimize physical contact. Then, the standards of environmental management could be conducted by limiting the movement of patients to minimize the infection transmission in health care facilities. It is a strategic step in controlling people who are temporarily infected to prevent transmission between humans (Lai *et al.*, 2020). Furthermore, the visitor management should enforce limiting the number of COVID-19 visitors and obliging them to wear PPE. To prevent transmission from infected patients, visitors wear standard PPE and a clear set of protocols and procedures (Ling *et al.*, 2020). Less or no institutional preparation for a disaster will cause weak preparedness in dealing with emergencies (Huriah and Farida, 2010). Although the health sector already has regulations and service standards for health workers, public participation is another important aspect in disaster management (Hutagaol, 2019).

The rapid COVID-19 transmission and the increasing number of victims have become a concern for the community and the Indonesian government. To respond to the threats, it is necessary to take strategic steps by preparing and strengthening the capacity of health workers at hospitals, laboratories, and other health care facilities. Therefore, good clinical governance is vital to provide guidance for health workers and the public about prevention measures and actions to deal with the COVID-19 disaster. Good clinical governance aims to reduce and stop the virus transmission and the level of severity and mortality due to the pandemic. The COVID-19 pandemic requires a comprehensive study on the implementation of good clinical governance and consistent application (Djasr, 2020). Clinical governance in the COVID-19 disaster management includes indirect public communication, information, and education (CEI); management and organization of patients and recommendation of prospective patients; governance of rapid tests and other laboratory examinations; patient management at hospitals; quarantine and isolation governance; and death management All need to be executed with good governance, and thus the stakeholders are ready to face disasters, such as casualties, property losses, and psychological disorders that can be reduced significantly (Hadi, Agustina, and Subhani, 2019). Table 2 shows the clinical management of COVID-19 pandemic in Indonesia.

The COVID-19 transmission through close contact and droplets makes health workers vulnerable to infection. In reducing this risk, good clinical governance in medical services for the prevention and mitigation of the pandemic disaster is essential in health care facilities. Clinical management focuses on handling the COVID-19 pandemic disaster with standard precautions that must be implemented in the entire health care facilities.

Table 2. Good Clinical Governance: COVID-19 Pandemic Disaster Management.

Good Clinical Governance	Evidence
Indirect Communication, Information, and Education (CIE) to the community	The public can contact the National Disaster Management Agency call center (117), the Indonesian Ministry of Health (119 ext. 9), and other information channels, such as DKI 112, Gojek-Halodoc telemedicine, and the National Disaster Management Agency website on https://www.covid19.go.id/ and the Indonesian Ministry of Health website on https://covid19.kemkes.go.id
Governance of Rapid Tests and Laboratory Inspections	Rapid Test (RT) antibodies or antigens are performed to people who have direct contact with positive patients. Besides, rapid test is used to detect ODP and PDP cases in areas that do not have RT-PCR inspection facilities. Examination uses rapid test to People without symptoms (OTG), People in Oversight (ODP), and Patients in Oversight (PDP).
Patient Management at Hospitals	- Treatment of COVID-19 patients - Indications of patients who need a mechanical ventilator - Conditions of discharged COVID-19 patients
Quarantine Management	- Home Quarantine - Self-Isolation - Quarantine Special Facilities - Hospital Quarantine - Regional Quarantine
Management of Dead Patients	The management of dead COVID-19 patients is carried out by prioritizing continuously the safety of health workers and the environment according to the COVID-19 corpse scouring procedures. - First, officers must use the PPE when handling the patient who died during the transmission. - Second, the patient's body must be completely wrapped in a body bag that is not easily penetrated. - Third, the body wrapped should not be opened again, then delivered in a special hearse, and buried no more than four hours. - Fourth, officials must provide an explanation to the family about the special management of dead patients due to infectious diseases as this management procedure brings the sensitivity towards religion, customs, and culture.

Source: Task Force for the Acceleration of Handling COVID-19, 2020

Therefore, it can provide safe medical services for all patients and reduce the risk of continuous infection. Besides, improving the quality of public services needs to be supported by increasing the competence of human resources, the availability of complaint services, the completeness of information media, and the guarantee of service facilities and infrastructure (Gani,

2019; Purnamasari and Kushandajani, 2019).

Standard precautions in handling COVID-19 patients include performing hand and breathing hygiene, using personal protective equipment (PPE) according to risk, prevention of injuries caused by sharp objects and syringes, and setting safe management of medical waste according to procedural routines and cleaning environment, linen sterilization and patient care. To prevent the COVID-19 transmission from infected patients, the government do some protocols such as maintaining hand hygiene, ensuring the availability of N-95 masks and personal protective equipment (PPE) according to standards, formulating a clear set of protocols and prevention procedures, as well as building communication and cooperation among stakeholders (Ling *et al.*, 2020). Furthermore, the pandemic handling procedure includes ensuring early identification and control of sources using clinical triage in health care facilities. It aims to prevent the transmission of pathogens to medical personnel and other patients. Additionally, administrative control needs to be carried out as a top priority in the infection prevention and control (PPI) which includes the provision of infrastructure policies and procedures for preventing, detecting, and controlling infections during medical treatment. This step will be useful if it starts from anticipating the movement of patients from the time they first arrive until they leave healthcare facilities. Thus, internal regulations regarding facility management and safety and staff competency improvement through training need to be prepared by hospitals (Berliana and Widowati, 2019).

Moreover, environmental control and engineering can be performed as well to ensure adequate environmental ventilation in all areas. For example, hospitals can set a physical distancing seat in at least 1 meter between one patient and another including health workers (if they are not using PPE). These environmental engineering control activities can reduce the spread of several pathogens during the delivery of health services. The rate of disaster events requires the preparedness of health workers as the front-liners to provide health services to victims during disasters (Septiana and Fatih, 2019).

Human Resources in the COVID-19 Pandemic Management

An established health system that is supported by strong state finance will provide the government readiness to respond to a pandemic disaster. Country responsiveness in facing a pandemic is determined by their ability to suppress the spread rate, level of health facilities, the ability to deal with infected patients, and the capacity to manage and mobilize resources quickly in dealing with the crisis effects. The state's inability to deal with a pandemic disaster will fail to put a halt to the spread of a pandemic, and thus it leads to a human tragedy (Mas'udi and Winanti, 2020). The Indonesian government still faces a fundamental problem in implementing a fair and equitable medical service concerning the unfair number and distribution of health workers at the primary level (Djasr, 2020). Besides, the number of health workers in Indonesia is still lacking to support the smooth running of health services for emergencies that require human resources, facilities, and infrastructure (Musyarofah *et al.*, 2019).

To respond to the COVID-19 pandemic, the government requires readiness and responsive action to set optimal health personnel and medical service governance with information, procedures, and protective equipment for safe and effective work. Health workers play an essential role in the implementation of emergency responses to COVID-19 outbreaks. They also become the

backbone of the country's defence to limit and control the spread of diseases. To improve the effectiveness of disaster management, it needs to focus on improving coordination and communication, reducing ego-sectoral, and strengthening human resource competency in implementing the disaster management (Ariyanto, 2018). At the forefront, health workers provide COVID-19 services, which are usually carried out in high-risk situations. Health workers are at higher risk of being infected with COVID-19 while protecting public health. They are at risk of exposure to hazards such as psychological stress, fatigue, mental fatigue, or stigma. Therefore, it takes careful planning to allocating medical personnel and clear division of work that demands their readiness in providing medical services to victims in a disaster (Faradilla, 2018; Septiana and Fatih, 2019). The pandemic disaster management requires a large number of doctors and nurses to stay in 24 hours at hospitals. Their struggle in handling the COVID-19 pandemic disaster deserves a high appreciation since they fully dedicate their time and energy (Tosepu *et al*., 2020). Dedication is the consistency of one's commitment to the success of specific tasks or goals. It has noble values and involves powerful beliefs. Health worker dedication is vital to deal with performing duties during the pandemic. Thus, the central government and the regional one needs an optimal policy to protect health workers (Nasution, 2020)

Figure 1 shows that the ratio of Indonesian health workers involved in the management of the COVID-19 pandemic is 0.4 for doctors and 2.1 for nurses. It means that only four doctors exist to provide services per 10,000 residents. In other words, each doctor must take care of 2,500 residents. As for nurses, a ratio of 2.1 means that 21 nurses serve at an average population of 10,000. It indicates that each nurse must handle as many as 476 people. This condition is very different from the United States and several other European countries (Spain, Italy, Germany, France, and the United Kingdom) which have the high number of COVID-19 pandemic victims, but the ratio of health workers is above 2.5 for physicians and 5.5 for nurses. It means that per at least 10,000 inhabitants, they prepare 25 doctors and 55 nurses with an average number of one doctor handling 400 people and one nurse treating 181 people. In short, the ratio between the number of health workers and the number of infected people in Indonesia are still not ideal compared to some developed countries with the higher number of cases. To provide clear data, Table 3 illustrates a comparison among some neighbouring countries like Malaysia and Singapore.

.

Country	Doctor	Nurse
USA	2.5	8.6
Spain	4.1	5.5
Italy	4.1	5.9
Germany	4.2	13.2
France	3.2	9.7
England	2.8	8.3
China	1.8	2.3
Iran	1.1	1.9
Turkey	1.8	2.6
Belgium	3.3	11.1
Indonesia	0.4	2.1

Source: Kompas Research and Development Data, 2020

Figure 1. The Ratio of Health Workers to COVID-19 Affected Countries (Per 1,000 Population)

Table 3. Ratio of Health Workers and Positive COVID-19.

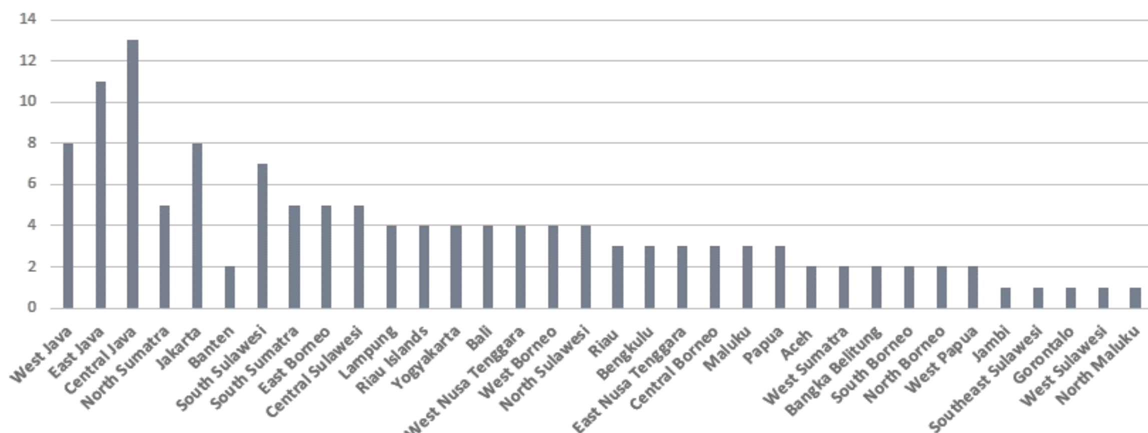
Country	Ratio of Doctors		Positive Covid-19		
			March 31th	April 29th	May 31th
Indonesia	0.4	4:10.000	1.528	10.118	25.773
Malaysia	0.1	10:10.000	2.626	5.945	7.762
Singapore	0.1	10:10.000	879	14.951	34.366

Source: Processed Research Data from Indonesia online.co.id and covid19.who.it, 2020

Hence, it is essential to pay attention to developing the capacity of health workers in responding to disaster management (Septiana and Fatih, 2019). Management of health workers in dealing with disaster events should be focused on the aspects of age, professional and field experience to facilitate the allocation of medical personnel, distribution of work, as well as appropriate mobilization at the disaster sites (Faradilla, 2018; Ruslam *et al.*, 2019). While, the public health authorities must continue to monitor changes in situations and conditions to build preventive measures to Coronavirus and its related outbreaks (Lai *et al.*, 2020). As the occurrence of disaster events requires preparedness from health workers, an important aspect to improve this skill is educating them about knowledge, attitudes, and practices of disaster service management (Septiana and Fatih, 2019; Susilawati, 2019).

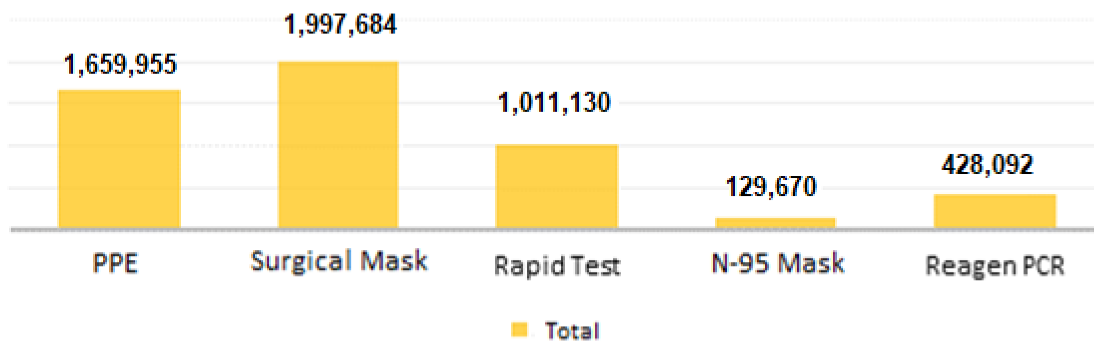
Health Facilities to Support in Handling COVID-19 Pandemic

Figure 2 explains the level of distribution of COVID-19 referral hospitals in Indonesia, especially the provinces in Java which becomes the epicenter point for the spread of COVID-19. As a preventive measure in tackling the spread of this pandemic, the government has set the number of COVID-19 referral hospitals in every province including in Java. Furthermore, it has also determined referral hospitals for COVID-19 handling in almost every area in Indonesia. It is a strategic step in identifying conditions of infected patients every day. The existence of referral hospitals in each province will increase affordability to access health facilities and encourage the acceleration of the COVID-19 patient management in each region. Disaster management will run optimally if supported by the adequate



Source: Indonesian Ministry of Health, 2020

Figure 2. COVID-19 Referral Hospitals in Indonesia (Per March 10, 2020)



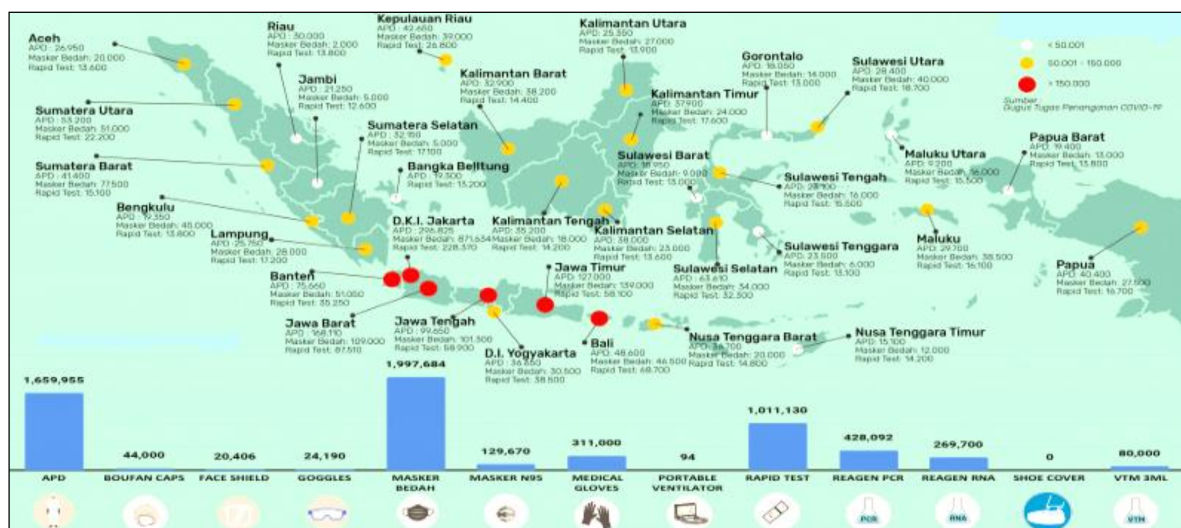
Source: COVID-19 Handling Task Force, 2020

Figure 3. Total Distribution of Medical Devices for COVID-19 Management (Per May 3, 2020)

number of health service infrastructure and the sufficient number of human resources in emergency services (Musyarofah *et al.*, 2019; Silmi *et al.*, 2019).

Figure 3 shows the most distributed medical equipment is the surgical masks (1,997,684 units), PPE of 1,659,955 units, and rapid test equipment of 1,011,130 units. Surgical masks and PPE are indeed a priority to be immediately distributed to every referral health facility to provide safety for health workers. On the other hand, the availability of standard N-95 masks and PPE must be supported with clear prevention standards and communication and cooperation among stakeholders (Ling *et al.*, 2020). Many positive cases require the full support from medical service facilities with large numbers of health workers. The availability of adequate medical equipment will facilitate health workers to perform medical services to COVID-19 patients. The increasing number of medical devices distributed appropriately to the regional level can reduce the high risk of the pandemic.

From the map in Figure 4, Java Island has a high level of medical device distribution compared to other main islands in Indonesia. As the epicenter of COVID-19 transmission in Indonesia, Java is prioritized to obtain medical devices (West Java, Central Java, East Java, Banten, and DKI Jakarta).



Source: COVID-19 Handling Task Force, 2020

Figure 4. Distribution of Medical Devices in Handling COVID-19 (Per May 3, 2020)

There have been 150,000 units of medical devices, such as PPE, surgical masks, and rapid tests distributed to the Java-Bali region such as DKI Jakarta, Banten, West Java, Central Java, and East Java is over. Then to other islands such as Sumatra, Kalimantan, Sulawesi, Maluku, West Nusa Tenggara, and Papua, a total of 60,000-150,000 units have been distributed. Meanwhile, Bangka Belitung, North Maluku, East Nusa Tenggara, and West Papua have received less than 50,000 units [figure 4]. In terms of logistics, the COVID-19 Task Force has also cooperated with other relevant parties in delivering, escorting, and distributing the medical equipment via land, air, and sea transportation to various regions, provinces, districts, and hospitals in Indonesia, from Sabang to Merauke. Effectiveness of disaster management can be achieved by increasing the intensity of coordination and communication (Ariyanto, 2018). Besides, it needs to be supported by more responsive disaster mitigation to the gender-based needs to equip all with an equal capacity of reducing disaster impacts (Nuriana *et al.*, 2017).

This study is among early studies that look at medical service readiness for handling COVID-19 from the policy perspective of patient handling procedures, human health resources, and health facilities. Mandatory operational standard readiness is necessary to guide human health resources to respond cases with appropriate treatment according to correct procedures. Accuracy of disaster management is carried out procedurally by supporting of the complete availability of health facilities since people infected with COVID-19 should obtain rapid and precise health service.

This study provides an overview of public services provided by the government in dealing with the pandemic as a non-natural disaster. However, this study has some limitations as it only uses secondary data in the analysis. Future research on this topic needs to use primary data and triangulation to increase the validity of the results.

CONCLUSION

As a disaster, COVID-19 that has posed a threat to public health requires health service preparedness seen from readiness in various health aspects, including proper handling procedures. The procedures in handling COVID-19 patients are done through the management of patient placement, environmental management, and visitor management. These are strategic steps in controlling the movement of infected people to prevent the COVID-19 transmission between humans. Medical devices have been distributed to various regions, as well as hospitals in Indonesia, such as 1,997,684 pieces of surgical masks, 1,659,955 units of PPE, and 1,011,130 units of rapid test kits. After having standard procedures and readiness of health facilities, as well as the equal distribution of medical devices, the government needs to pay attention to the readiness of the human resources. The success of implementing health services during the pandemic depends on the human resources at hospitals as the front liners in dealing with COVID-19. Besides, it is also affected by the availability of operational standards and health facilities. Despite an adequate number of human health resources, the availability of health services, information systems, patient handling procedures, and health service governance (good clinical governance) is essential in responding to the pandemic.

CONFLICT OF INTEREST

This article does not have any conflict with anyone's interest.

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