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CADRES PERFORMANCES AND POSYANDU ACTIVITIES DURING COVID-19 PANDEMIC

RW. Wisnuwardani, W. Rahman and MJ. Datu

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CADRES PERFORMANCE AND POSYANDU ACTIVITY DURING COVID-19 PANDEMIC

RW. Wisnuwardani^{*1}, W. Rahman¹ and MJ. Datu¹

¹ Public Health Faculty, Mulawarman University, Samarinda, INDONESIA.
(E-mail: ratih@fkm.unmul.ac.id, wahnaditarahman@gmail.com,
mitha8799@gmail.com)

ABSTRACT

The COVID-19 pandemic could increase sharply maternal and child undernutrition in low- and middle-income countries. Stunting is still one of the biggest nutrition problem in Indonesia as the prevalence of child stunting is 29.9%. Growth monitoring program is an essential component that may influence stunting among children under-five. Posyandu is a community based preventive and promotive care for monitoring nutrition status of children under five years. However, Posyandu cadres have a role in empowering the community as motivators, educators and health care. Cadre drop out influences the development of Posyandu, while lack of incentives might also influence the performance of cadres. During the COVID-19 pandemic, Posyandu has changed its activities depend on the developments in the COVID-19 case. The incentive of cadre during the COVID-19 pandemic to increase the performance of cadres and Posyandu activities is little explored. This study aimed to evaluate the association between incentives with cadres performance and Posyandu activities. This study was a cross-sectional study among 116 Posyandu active cadres (19-67 years-old) in East Kalimantan, Indonesia. Logistic regression examined the associations of cadres incentives with Posyandu activities and cadres performance. Opening Posyandu activities were higher in 36-45 years, house wife, higher education, very good performance; got incentives (transportation cost refund, training, and training transportation cost); and availability of hand washing facilities. After adjusting for all potential confounders (socio-demographic and prevention of COVID-19 facilities), incentives (transportation cost refund ($p=0.001$) and training transportation cost ($p=0.001$) were associated with cadres performance. Prevention of COVID-19 facilities (hand washing facilities and thermos gun, both $p<0.001$) were associated with cadres performance. The current study provided for the first time evidence on incentives cadre during the pandemic of COVID-19. The discussed determinants and Posyandu activities already point to some important incentives and facilities that need to be provided in future public health initiatives.

Keywords: Incentives, Money, Training, COVID-19, Cost

INTRODUCTION

The COVID-19 crisis could increase sharply maternal and child undernutrition in low- and middle-income countries, including Indonesia. The prevalence of stunting in Indonesia was 29.9%, while the prevalence of overweight and obesity were 8% (1). However, the reduction of stunting, overweight and obesity prevalence has been slowly progressing in the last ten years in Indonesia (1). Growth monitoring program is one of programs to prevent malnutrition, but the coverage is low (2). Indonesia government extends the access to health care through Posyandu (*pos pelayanan terpadu* or health and nutrition

integrated service center), which has role to provide mother and children basic health services, such as family planning, growth monitoring, supplemental feeding, vitamin, mineral supplementation and nutrition education, immunization and disease control (diarrhea prevention) (3). Posyandu has an important role to prevent malnutrition (4). However, promoting mothers' participation to Posyandu is needed by improving the quality of Posyandu services and providing qualified resources, including cadres (5).

During the COVID-19 pandemic, Indonesian government takes an action to reduce, control and mitigate the spread of SARS-CoV-2 infection such as promoting physical distancing, wearing a mask, keeping rooms well ventilated, avoiding crowds, washing hand and vaccination. The government of Indonesia is also imposing the large-scale social and community activities restriction (*Pembatasan Sosial Berskala Besar/PSBB and Pemberlakuan Pembatasan Kegiatan Masyarakat/PPKM*) that affects Posyandu activities. However, some Posyandu are still open during the COVID-19 pandemic.

Posyandu activity might depend on cadres performance. Over the last 10 years, there has been great interest to improve the cadres performance through cadres incentives, such as training, transportation cost refund, training transportation cost, salary/cash incentive, reward, encouragement by local leaders, and infrastructure in Posyandu (6-8). A qualitative study has shown that incentive improves cadres performance (8), and a positive association with cadres performance (9). Some incentives might drive these associations: cash incentive/salary was significantly associated with higher cadres performance (9). However, such studies during the pandemic of COVID-19 have not been undertaken in Indonesia. Therefore, this study aimed to evaluate the association of incentives, cadres performance and Posyandu activity during the pandemic of COVID-19.

MATERIALS AND METHODS

Study population

This cross-sectional study was in eight Kalimantan cities: Balikpapan, Bontang, Kutai Kartanegara, Bulungan, Kutai Timur, Penajam Paser Utara, Samarinda, dan Sebatik Utara. The survey was conducted from February to May 2021, in 116 active cadres aged 19-67 years. The participants provided written informed consent. Data were collected by face to face interview using online questionnaire.

Demographic and lifestyle measurements

Data on sex, age, city, occupation, and education were recorded by online questionnaire. The education of cadres was defined as one of four levels (lower education, secondary education, higher education and university degree). The occupation of cadres was reported as student, house wife, government employers, non-government employer, and entrepreneurs. During the pandemic of COVID-19, the prevention of COVID-19 virus transmission is needed, so hand washing facilities and thermos-gun were asked in this study.

Incentives, cadres performance and Posyandu activities

The performance of cadre, which was previously validated (7), was used as the indicator of cadre performance. It was based on information about the activity of cadre before Posyandu

(preparation, announcement to the community and data collection pregnant and breastfeeding mothers), during Posyandu (registration, weight/growth monitoring, recording, counseling, health services/vitamin A supplementation, family planning and immunization) and after the opening day of Posyandu (recording to register book, evaluating the current activity and planning the next Posyandu activity, home visiting as the follow-up). Low cadre performance had a score range from 0 to 5; good cadre performance had a score range from 5 to 10, and very good cadre performance had a score range 10 to 15.

The incentives of cadres were measured using online questionnaire data and based on the incentives that have been received by cadres during the pandemic of COVID-19. It was reported as transportation cost, operational fund assistance, community cash incentive, health benefits, certificate, training, and training transportation cost. Posyandu activities were defined as close or open operational services of Posyandu every month during the pandemic of COVID-19.

Statistical analyses

The statistical analyses were conducted with software package IBM SPSS statistics version 25 (IBM, New York, USA), and the level of significance was set at two-sided $p < 0.05$. To evaluate the differences in demographic parameters, cadres performance and cadres incentives between Posyandu activities, the Chi-square test was used for categorical variables.

Multilevel regression were chosen to adjust for clustering within cities. Confounder choice was based on significant associations with either Posyandu activities or cadres performance. Model 1 was adjusted for sex, cities, education and occupation of cadres. Model 2 was additionally adjusted for cadres incentives and washing hand facilities. A multilevel logistic regression analysis was reported to examine the associations of cadres incentives with Posyandu activities and cadres performance.

RESULTS

General characteristics of the subjects

More than half of Posyandu in Kalimantan were open every month (56%) during the pandemic of COVID-19 and the majority of cadres had very good performance (86%). Opening Posyandu activities were higher in 36-45 years, house wife, higher education, very good performance; got incentives (transportation cost refund, training, and training transportation cost); and availability of hand washing facilities (**Table 1**). Very good cadres performance were higher in Kutai Kartanegara, close Posyandu activities, had received transportation cost and training transportation cost incentives, and availability of prevention COVID-19 facilities (hand washing and thermos-gun) (**Table 1**).

Table 1. General characteristics, cadres performance and cadres incentives according to Posyandu activities and cadres performance during the pandemic of COVID-19

			Posyandu activities			Cadres performance			
			Close	Open	p^*	Low	Good	Very Good	p^*
Age					0.002				0.199
	17-25		8	1		0	1	8	

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	26-35	3	16		0	1	18	
	36-45	24	37		1	8	52	
	46-55	11	9		1	1	18	
	56-65	5	1		0	2	4	
	65-70	0	1		0	1	0	
City				<0.001				0.001
	Samarinda	20	9		0	11	18	
	Balikpapan	8	2		0	0	10	
	Bontang	1	9		0	0	10	
	Bulungan	0	10		0	0	10	
	Kutai Kartanegara	12	18		1	1	28	
	Kutai Timur	0	7		1	2	4	
	Penajam Paser Utara	0	10		0	0	10	
	Sebatik Utara	10	0		0	0	10	
Education of cadres				0.036				0.652
	Lower education	1	6		0	1	6	
	Secondary education	2	11		1	1	11	
	Higher education	39	41		1	11	68	
	University degree	9	7		0	1	15	
Occupation of cadres				0.049				0.133
	Student	1	0		0	1	0	
	House wife	35	54		2	8	79	
	Government employers	3	5		0	1	7	
	Non-government employers	4	5		0	1	8	
	Entrepreneur	8	1		0	3	6	
Cadres performance				0.020				
	Low performance	1	1					
	Good performance	11	3					
	Very good performance	39	31					
Posyandu activities during pandemic of COVID-19								0.001
	Close				1	11	58	
	Open				1	3	42	
Cadres incentives								
	Transportation cost			0.001				0.001
	Yes	21	47		2	1	58	
	No	30	18		0	13	42	
Operational fund assistance				0.295				0.537
	Yes	34	50		2	9	73	
	No	17	15		0	5	27	
Community funding				0.423				0.106
	Yes	18	18		1	1	34	
	No	33	47		1	13	66	
Health benefits				0.132				0.420
	Yes	9	20		0	2	27	
	No	42	45		2	12	73	
Certificates				0.001				0.118

	Yes	10	22		0	1	31	
	No	41	43		2	13	69	
	Training			<0.001				0.083
	Yes	25	60		2	7	76	
	No	26	5		0	7	24	
	Training transportation cost			0.001				0.001
	Yes	18	43		2	1	58	
	No	33	22		0	13	42	
Prevention of COVID-19 facilities								
	Hand washing facilities			0.013				<0.001
		37	59		0	4	92	
		14	6		2	10	8	
	Thermo-gun			0.256				<0.001
	Yes	26	41		0	2	65	
	No	25	24		2	12	35	

*X² test was used for all variables. Bold: statistical significance when $p < 0.05$.

Incentives, cadres performance and Posyandu activities

Cadres performance had significant association with Posyandu activities, but only in model 1 (**Table 2**), a higher cadres performance was reflected open Posyandu activity. Incentives cadres was significantly associated with Posyandu activities, independent from hand washing facilities (**Table 2**).

Table 2. Incentives and cadres performance according to Posyandu activities

		Posyandu activities				
		Close		Open		p
Cadres performance		Mean	se	Mean	se	
	Model 1	3.2	0.15	3.5	0.15	0.016
	Model 2	3.4	0.20	3.4	0.20	0.557
Incentives						
	Model 1	1.7	0.36	3.08	0.37	<0.001
	Model 2	1.4	0.63	2.70	0.67	<0.001

Model 1, adjusted for age, cities, education and occupation of cadres. Model 2 was additionally adjusted for cadres incentives and washing hand facilities.

Data were presented as means \pm standard error. Bold values indicate statistical significance when $p < 0.005$.

Differences between posyandu activities were observed using multiple logistic regression.

DISCUSSION

To our knowledge, this is the first observational study that examined the associations between incentives, cadres performance and Posyandu activities in Kalimantan during the pandemic of COVID-19. We cannot exclude the possibility of reverse causation as this study was a cross-sectional study design. The most consistent findings were significant associations between incentives cadres, hand wash facilities and Posyandu activities. In addition, cadres performance was significantly associated with Posyandu activities, but only in model 1 (without adjusted for hand washing facilities).

Incentives, cadres performance and Posyandu activities

A significant association was found between incentives and Posyandu activities. The

provision of incentives will improve the performance of cadres in Posyandu activities. Our study is in line with the previous study, that incentives can improve the performance of Posyandu cadres (7, 8). Cadres performance was related to the transportation cost refund, charters, and training (7). In contrary with our study, the provision of operational assistance and health benefits were positively associated with cadres performance in Samarinda, East Kalimantan (7). Nevertheless, these findings were in pandemic of COVID-19 that effects economic crisis (10).

Higher incentives and training were associated with cadres performance. In agreement, the same findings were found in Bogor and Lampung, Indonesia (6, 11, 12). Low provision of incentives in the form of providing inadequate training has a major effect on the low progress of worker performance in the organization (13, 14). Therefore, it is important to provide good quality of cadres training.

Incentives and cadre performance are closely related to Posyandu activities. The better the incentives provided will affect the performance of better cadres. The availability of incentives will be able to motivate cadres to complete their tasks compared to if cadres do not receive incentives (15). A study conducted in Banjar, Indonesia, found that cadres who had never received training, lack of infrastructure in Posyandu, lack of awards and irregular incentives received by cadres would affect cadres activity in providing services at Posyandu (16). Indeed, incentives are very significantly related to the performance of Posyandu cadres (9). Incentives greatly affect the activity of cadres in Posyandu activities in Lampung, such as the majority of active cadres due to incentives in the form of salaries (9).

In this study, higher incentives and cadre performance were significantly associated open services of Posyandu. This association was also influenced by the location of Posyandu. Posyandu which were located in small cities had higher opportunity for open services. The most cases of COVID-19 occurred in big cities such as Balikpapan City, Samarinda, and Kutai Kartanegara Regency (17). Furthermore, many Posyandu did not open services during the pandemic. In addition, Posyandu activities can also be seen from the health facility variable in preventing COVID-19. Our study showed that hand washing facilities and the availability of a thermo gun at the Posyandu affect the incentives and performance of the Posyandu so that they were related to Posyandu activities during the pandemic. Posyandu that had the availability of hand washing facilities and a thermo gun could open service activities at the Posyandu.

CONCLUSION

In conclusion, incentives may help improve the cadres performance as they were consistently related to cadres performance and Posyandu activities. Nevertheless, hand washing facility is related with cadres performance and Posyandu activities. These findings suggest the importance of hand washing facilities in Posyandu, and incentives (money and non-money) for cadres during the pandemic of COVID-19. Future studies using longitudinal data and using incentives are needed to determine incentives cadres effects in more detail.

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