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Article

The role of the school food environment in improving the healthiness of school canteens and readiness to reopen post COVID-19 pandemic: A study conducted in Indonesia

Hamam Hadi,[1,2] Resti K. Triastanti,[3] Devita Anggraeni,[3] Esti Nurwanti,[1,2] Emma C. Lewis,[4] Uriyoan Colon-Ramos,[5] Yunhee Kang,[4] Miwa Yamaguchi,[6] Joel Gittelsohn[4]

[1]Alma Ata Graduate School of Public Health, University of Alma Ata, Yogyakarta, Indonesia; [2]Alma Ata Center for Healthy Life and Foods (ACHEAF), University of Alma Ata, Yogyakarta, Indonesia; [3]Department of Nutrition, Faculty of Health Sciences, University of Alma Ata, Yogyakarta, Indonesia; [4]Center for Human Nutrition, Department of International Health, Bloomberg School of Public Health, The Johns Hopkins University, Baltimore, USA; [5]Department of Global Health, Milken Institute School of Public Health, George Washington University, Washington DC, USA; [6]International Center for Nutrition and Information, National Institute of Health and Nutrition National Institutes of Biomedical Innovation, Health and Nutrition, Tokyo, Japan

Abstract

Background: Indonesian school children spend one-third of their time in school, where they are exposed to a variety of foods in school canteens. However, the healthiness of school canteens is not yet well understood. This study was conducted to characterize the healthiness and quality of management of school canteens, and measure readiness of school canteens to reopen following COVID-19 closures.

Design and methods: Mixed methods were used to conduct a cross-sectional study. Data were collected from schools located in the Bantul District of Indonesia. Primary schools (n=152) were randomly selected, with a final sample size of 147. Data were collected using Google Forms, delivered via WhatsApp or e-mail. School canteens were classified as healthy if they had a Healthy Canteen Score (HCS) ≥10, or unhealthy if they had a HCS<10.

Results: Less than half (43.5%) of school canteens were deemed to be healthy. School canteens were more likely to be healthy if the canteen manager had a formal decision letter (OR=15.2; 95% CI=3.7-62.5); used print material messaging (OR=3.2 to 4.6 times); or received inspection by external officers periodically (OR=2.8; 95% CI=1.04-7.5). Readiness to reopen was 4.5 (OR=4.5; 95%CI: 1.1-17.9) times higher among schools that had their own canteen, and 4 (OR=3.9; 95% CI=1.1-13.8) times higher among schools located in rural areas, adjusting for the remaining variables.

Conclusions: School canteen healthiness can be improved by implementing national food policy and healthy school canteen standards accompanied by the existence of good management practices within schools, particularly following the COVID-19 pandemic.

Introduction

Childhood obesity is on the rise worldwide and is considered one of the most serious public health challenges of the 21st century.[1] Among both children and adults, obesity is associated with increased risk for non-communicable diseases,[2–6] such as diabetes mellitus, hypertension, and kidney failure.[7] Consequently, obesity has contributed to a significant increase in morbidity and mortality.[8-11]

In 2010, the prevalence of obesity among school children and adolescents in Indonesia was 10.4% in urban areas and 8.1% in rural areas.[12] Three years later, the prevalence increased significantly, with a prevalence of 17% in urban areas and 13.5% in rural areas.[13] Recent studies have shown that Indonesian school children are exposed to unhealthy food advertisements between 2 to 7 times more than their peers in other Asia-Pacific regions.[14] Obese children in Indonesia are characterized as being more sedentary, consuming less fruits and vegetables, and having higher intake of fast food and junk food compared to their non-obese peers.[15,16]

Indonesian school children spend 7 to 10 hours per day at school.[17] This long time spent away from home increases the likelihood of school children purchasing food and beverages at their school's canteen during the day. It is estimated that food and beverages purchased at school canteens contribute to 32.7% of total energy intake of schoolchildren's diets.[18] Foods sold in Indonesian schools are predominantly calorie-dense and nutrient-poor, and are typically consumed in excess,[19] and 50% of the snack foods sold contain harmful chemicals.[20]

In line with the rapid increase in childhood obesity seen in Indonesia over recent years, access to foods have significantly increased in type and availability. Snack food choices made by consumers are influenced by various factors: (1) food-related; (2)

Significance for public health

Indonesian school children spend one-third of their time in school, where they are exposed to a variety of foods at school canteens. The school food environment, therefore, plays a major role in determining children's eating habits and may contribute to increased risk for childhood obesity. Due to the COVID-19 pandemic, most schools in Indonesia remain closed. Readiness to reopen school canteens post COVID-19 closures might vary between schools and may be associated with certain characteristics of the schools and how the school canteens are managed. Understanding determinants of school canteen healthiness, the importance of the quality of canteen management, and the readiness to reopen school canteens post COVID-19 closure can inform policymakers to help schools prepare to reopen and improve healthiness following the COVID-19 pandemic, as well as to aid in combating childhood obesity in this population.

personal; and (3) socio-economic. One example of a personal factor is knowledge, which encompasses knowledge of nutrition, intelligence, perception, emotions, and extrinsic motivation. Education and knowledge are indirect factors that influence one's behavior, and in the context of food, knowledge has the power to directly influence food purchasing and consumption choices.[21]

The home food environment and the school food environment are the two most influential food environments for children's eating behaviors.[22] Children tend to consume foods that are easily accessible; therefore, it is important for healthy snacks to be available in both the home and at school. In addition to the availability of healthy snacks, pocket money is also an influential factor in children's snack choices. In Indonesia, it is typical for school children to receive an allowance of pocket money from their parents. The allowance is used to meet various needs, one of which includes buying snacks. One study conducted in West Java found that 81.5% of children's allowances ranged from Rp. 1000.00-5000.00, 13.3% of children's allowances ranged from Rp. 5500.00-10,000.00, 2% of children's allowances ranged from Rp. 11,000.00-20,000.00, and 1.8% of children's allowances were more than Rp. 21,000.00.[19] Therefore, children's purchasing power is quite high.

Currently, the majority of foods sold at school canteens are fried, and the cleanliness of these food sources is typically poor. Based on a survey conducted in 640 primary schools across 20 Indonesian provinces, 60% of schools have their own canteen, and among those, more than 84% of the canteens do not meet hygiene and sanitation requirements.[23] As the end of the COVID-19 pandemic is still unpredictable, and daily new cases in Indonesia remain the highest among all member countries of The Association of Southeast Asian Nations (ASEAN), primary schools are currently closed and school canteens are not in operation. The readiness to reopen their canteen post COVID-19 may vary between schools, and this should be a great concern of Indonesian government to guide and help the schools. Currently, there is a gap in the understanding of how school canteens vary across urban and rural geographies in Indonesia, how school canteens are managed, and how the school food environment is associated with healthiness of foods purchased by Indonesian school children. The overall goal of the present study was to close this gap in the literature with the following aims: (1) to describe the characteristics of school canteens in Indonesia, including availability of healthy options; (2) to understand the general management of school canteens and how the quality of management is associated with canteen healthiness; and (3) to measure the readiness to reopen school canteens post COVID-19 pandemic.

Design and methods

The present study utilized a mixed-methods approach. First, we conducted a cross-sectional survey to assess the status of school canteens, policies related to the canteens, and additional factors. Second, in-depth interviews were conducted with several heads of primary schools to explore information on schools' readiness to reopen their canteens following the COVID-19 pandemic. In-depth interviews were ended when obtained information was saturated.

Design and setting

This cross-sectional study was conducted within the Bantul district in central Java, Indonesia including 17 subdistricts, from January 2020 to May 2020. The 17 subdistricts were chosen to represent urban and rural areas within the overall district. There are a total of 395 primary schools located in the Bantul district, including both public and private schools, and both full-day and non-full-day schools. Ethical clearance was obtained from the Ethics Committee of Alma Ata University and informed consent was obtained from parents and teachers before data collection began.

Sample size

In order to measure the proportion of schools with a healthy canteen, we conducted a cross-sectional survey. Based on the Education and Cultural Regional Office of Bantul and using a power of 95%, the estimated proportion of elementary schools with healthy canteen of 20%, the confidence limit of 5%, and design effect of 1, we obtained a minimum sample size of 152 needed using a sample size calculator.[24]

Sampling

We used a random number generator to conduct simple random sampling.[24] One hundred and fifty-two primary schools were randomly chosen out of 395 possible primary schools in the Bantul district. The list of primary schools was obtained from the Bantul district education office, and included 363 private and public primary schools, as well as 32 primary schools under the ministry of religion and ministry of education and culture.

Participants

Permission to collect data from the primary schools was obtained from the local government (District Ministry of Education Office) and each school principal. Informed consent was obtained from the principal of every school selected for this study prior to data collection.

Data collection

Informed consent was obtained in January 2020. Due to the COVID-19 pandemic, data were collected using Google Forms by trained students of the University of Alma Ata School of Nutrition. The Google Form was developed to consist of 52 structured questions. These electronic forms were sent and returned back using WhatsApp or e-mail to school principals or those who represented schools as respondents in this survey. Data were downloaded to an Excel spreadsheet before being analyzed. Out of 152 schools sampled for this survey, 147 (97%) schools responded and returned the completed form. The Google Form of this survey was included in this manuscript.

The in-depth interview was conducted by researchers by inviting several heads of elementary schools to attend a Zoom meeting. The results were then transformed into multiple transcripts for further analysis.

Variables

In order to measure the healthiness of school canteens, we developed a "Healthy Canteen Score" or HCS. The HCS is comprised of (1) existence of a school canteen + (2) availability of a nutrition curriculum for students + (3) school regulation on how foods are stored + (4) school regulation to ensure that foods are considered healthy + (5) school restrictions on sweetened, sugary, and salty foods + (6) school restrictions on sweetened or colored foods + (7) school regulations to ensure no unhealthy foods are being sold + (8) school regulations to restrict students from buying food outside of the school during the school day + (9) school decree on school canteen management + (10) school canteen supervision by the school supervisor + (11) outside school food canteen supervision. The scores ranged from 0 (zero) to 11 (eleven), with a mean of 8.9±1.6 (SD). We classified as healthy

school canteens if HCS≥10 or unhealthy school canteens if HCS<10.

The HCS of 10 represents the 75th percentile of the HCS.

Data analysis

We conducted descriptive analyses, both aggregated and stratified by public *vs* private, and urban *vs* rural location. We stratified school as rural-urban based on the Indonesian Statistic Agency classification. To examine the role of the quality of school canteen management on the school canteen healthiness, we treated the school healthiness variable as a dichotomous variable (healthy, not healthy), while all other independent variables were treated as categorical variables. Chi Square or Fisher Exact test (when expected values less than 5) was then used to see association between school canteen healthiness and each of all independent variables. To identify key factors contributing to school canteen healthiness, we ran multiple logistic regression models. All independent variables associated (P<0.05) with school canteen healthiness in bivariate analysis were included in the models. A backward approach was used to analyze different models and to see the goodness of fit of each model. A similar approach was used when we analyzed the school readiness to reopen canteens post COVID-19. We performed all data analyses using STATA v.15 MP (Stata Corp LLC, Texas, USA) with statistical significance acceptance at P<0.05 for all tests.

Table 1. Primary school characteristics (n=147).

Variables	N	%
School status		
Public	99	67.4
Private	48	32.6
School location		
Rural	75	51.0
Urban	72	49.0
Canteen open during COVID-19		
No	144	98.0
Yes	3	2.0
Canteen owned by school		
No	20	13.6
Yes	127	86.4
Canteen managed by school		
No	93	63.3
Yes	54	36.7
School canteen category		
Healthy	64	43.5
Unhealthy	83	56.5
School has a nutrition curriculum		
No	31	21.1
Yes	116	78.9

Table 2. Factors associated with healthiness of school canteens in Indonesia (n=147).

Variable	Healthy canteen		Unhealthy canteen		Chi^2	P-value
	n	%	n	%		
School status						
Public	45	45.4	54	54.6	1.27	0.501^
Private	19	39.6	29	60.4		
School residency						
Rural	29	38.7	46	61.3	0.67	0.224^
Urban	35	48.6	37	51.4		
School canteen ownership						
Yes	63	49.6	64	50.4	18.7	0.005#
No	1	5	19	95		
School has health nutrition curriculum						
Yes	64	55.2	52	44.8	30.29	0.000#
No	1	0	31	100		
School canteen open during the COVID-19 pandemic						
No	62	43.1	82	56.9	0.67	0.414#
Yes	2	66.7	1	33.3		
Food is provided by the school team						
Yes	27	50	27	50	1.51	0.229^
No	37	39.8	56	60.2		
Regulations for food to be safely stored and prepared						
Yes	63	50.4	62	49.6	21.3	0.003#
No	1	4.6	21	95.4		
Regulations to make sure school canteen only sells healthy food and beverages						
Yes	64	46.0	75	54.0	6.52	0.011#
No	0	0	8	100		
Regulations for restrictions on food and beverages containing high sugar, salt and fat in school canteen						
Yes	63	48.1	68	51.9	13.89	0.001#
No	1	6.2	15	93.8		
Regulations for restrictions on food and beverages containing food colorings, sweeteners or preservatives in school canteen						
Yes	64	44.4	80	55.6	2.26	0.124#
No	0	0	3	100		

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Results

Characteristics of the selected elementary schools and their canteens

Of the 147 primary schools that were enrolled and completed the survey, about two-thirds (67.4%) were public and about one-third (32.6%) were private. Slightly more schools were located in rural areas (51%) than in urban areas (49%). Most (86.4%) schools had their own canteens, but only 36.7% of the school canteens were managed by the school itself, and 56.5% of school canteens offered no healthy foods. The majority (78.9%) of schools had a healthy nutrition curriculum available to students. More importantly, during the COVID-19 pandemic, most school canteens (98%) were closed (Table 1).

Role of the quality of management of school canteens

The healthiness of school canteens did not differ by school status (public or private), school location (rural or urban), or opening status (open or closed) during the COVID-19 pandemic (Table 2). However, HCS differed by management quality of school canteen (Table 2). School canteens that were owned by the school, managed by trained managers, or were regularly supervised by the school or a government officer, had higher HCS scores. School canteens were also more likely to be healthy when regulations on preparation, storing, procurement, and restrictions on food and beverages, existed in the school (Table 2). Whether foods and beverages were provided by the school or supplier was not important to determine healthiness of the school canteen (Table 2).

Key factors contributing to school canteen healthiness

When a multivariable analysis was performed, we found that school canteen healthiness was positively associated with greater numbers of vendors. Canteen healthiness was inversely associated with the number of canteen vendors located ouside the school, such that the more vendors located outside the school, the less likely that the school canteen was healthy, adjusting for the remaining variables (Table 3). School canteens whose manager had a formal decision letter as a canteen manager were 15 times (OR=15.2;95% CI=3.7-62.5) more likely to be healthy canteen than those who did not. School canteens were more likely to be healthy when schools (1) had restrictions on students buying foods outside of the school and (2) used messaging (*i.e.,* pamphlet, banner, circular letter) to promote awareness of the restriction on buying foods outside the school. Schools that used print materials messaging were 3.2 to 4.6 times more likely to have healthy school canteens than those who used oral messaging, adjusting for the remaining variables. The availability of canteen management by external officers (Primary Health Services/ Health Office / Indonesian FDA) was also associated with canteen healthiness; those supervised by external officers were 2.8 (OR=2.8; 95% CI= 1.04-7.5) times more likely to have healthy a canteen than those who were not supervised by external officers (Table 3). Canteen healthiness was not associated with school location (i.e., rural vs. urban) nor did it differ between public versus private schools.

Table 2. Continued from previous page.

Variable	Healthy canteen n	Healthy canteen %	Unhealthy canteen n	Unhealthy canteen %	Chi²	P-value
Regulations for restrictions on unhealthy food and beverages in school canteen						
Yes	64	46.4	74	53.6	7.39	0.007#
No	0	0	9	100		
Regulations for restricting buying food and beverages from outside school canteen						
Yes	62	49.2	64	50.8	9.2	0.004^
No	2	9.5	19	90.5		
Who manages the school canteen						
Catering managed by the school (included as a school services)	18	39.1	28	60.9	1.35	0.408^
Commercial	46	46.5	53	53.5		
Who supplies the foods and beverages						
School catering	8	47.1	9	52.9	5.11	0.276^
Commercial catering (third party)	3	75	1	25		
Food and beverages distributor from outside school	4	23.5	13	76.5		
The local community/ village cadre/ parents	46	45.5	55	54.5		
Other	3	60	2	40		
Who enforces regulations						0.460#
Local Health Officer	2	66.7	1	33.3	1.55	
Headmaster	19	90.5	2	9.5		
Primary health services	1	100	0	0		
Is there healthy canteen management training						
Yes	40	54.8	33	45.2	2.52	0.007^
No	24	32.4	50	67.6		
The canteen is regularly supervised by school officer						
Yes	64	47.4	71	52.6	10.08	0.002#
No	0	0	12	100		
The canteen is regularly supervised by the government (Primary Health Services/ Health Office / BPOM) prior to COVID-19						
Yes	53	50.5	52	49.5	2.87	0.007^
No	11	26.2	31	73.8		

^Chi square test; #Fisher exact test.

Readiness to reopen school canteen post COVID-19 pandemic

As the end of the COVID-19 pandemic remains unpredictable and daily new cases in Indonesia remain high, almost all primary schools are closed and school canteens have not been operated since the mandated shutdown. When asked about readiness to reopen their school canteen, most schools felt they would be ready to reopen once provided with information on timing and government regulations. However, 18 (12.2%) were not ready to reopen. The readiness of the schools to reopen their school canteen was 4.5 (OR=4.5; 95%CI: 1.1-17.9) times higher among those that have their own canteen than among those that do not, and 4 (OR=3.9; 95% CI =1.1-13.8) times higher in rural areas than in urban areas, adjusting for other variables (Table 4).

Table 3. Key factors contributing to school canteen healthiness (n=147).

Independent variables	Healthy n (%)	Unhealthy n (%)	COR (95% CI)	AOR* (95% CI)
Number of food vendors inside the school				
0-1 vendors (reference)	19 (31.7)	41(68.3)	1	1
2 vendors	20 (54.1)	17(45.9)	4.7 (1.06-6.07)	4.2 (1.4-12.7)
3+ vendors	25(50.0)	25 (50.0)	3.8 (0.98-4.77)	4.5 (1.5-12.9)
Number of food vendors outside the school				
0-1 vendors (reference)	38(52.1)	35(47.9)	1	1
2-3 vendors	12(40.0)	18(60.0)	0.6 (0.26-1.47)	0.63 (0.22-1.85)
4+ vendors	14(31.8)	30(68.2)	0.4 (0.19-0.96)	0.21 (0.07-0.62)
Ownership of decision letter for canteen management				
No	42(34.4)	80(65.6)	1	1
Yes	22(88.0)	3 (12.0)	14 (3.5-55.9)	15.2 (3.7-62.5)
Type of restriction regulation for students to buy foods outside the school				
Oral information/others	27(38.6)	43(61.4)	1	1
Circular letter	31(63.3)	18(36.7)	3.7 (1.78-7.63)	3.2 (1.3-8.3)
Pamphlet/banner	4(57.1)	3(42.9)	2.9 (0.60-1.57)	4.6(0.8-28.5)
Availability of canteen management supervised by external officers (Primary Health Centers/Health Office/FDA) before the COVID 19 pandemic occurred				
No	11(26.2)	31(73.8)	1	1
Yes	53(50.5)	52(49.5)	2.9 (1.28-6.46)	2.8 (1.04-7.5)

^Adjusted Odds Ratios were generated from a multiple logistic regression model adjusting for school status, school healthiness, and all other remaining variables.

Table 4. Readiness to reopen school canteens post COVID-19 pandemic (n=147).

Variables	Ready to reopen		COR (95% CI)	AOR* (95% CI)
	Ready N (%)	Not ready N (%)		
School canteen ownership				
No	13 (65.0)	7 (35.0)	1	1
Yes	116 (91.3)	11 (8.7)	5.7 (1.9-17.2)	4.5 (1.1-17.9)
School location				
Urban	60(83.3)	12(16.7)	1	1
Rural	69(92.0)	6 (8.0)	2.3 (0.8-6.5)	3.9 (1.1-13.8)
Certainty of COVID-19 information				
Uncertain	22 (75.9)	7 (24.1)	1	1
Certain	106(90.6)	11(9.4)	3.1 (1.1-8.8)	2.1 (0.6-7.3)
Certainty of government regulation				
Uncertain	16 (72.7)	6(27.3)	1	1
Certain	111 (90.2)	12(9.8)	3.5 (1.1-10.5)	2.8 (0.8-10.0)
School types				
Private	39 (81.3)	9(18.7)	1	
Public	90(90.9)	9(9.1)	2.3 (0.9-6.3)	
School canteen healthiness				
Unhealthy	70 (84.3)	13(15.7)	1	
Healthy	59 (92.2)	5(7.8)	2.2 (0.7-6.5)	

*Adjusted Odds Ratios were generated from a multiple logistic regression model adjusting for school status, school healthiness, and all other remaining variables.

A select few quotes referring to the readiness of schools to reopen their canteens are as follows:

> "We *are ready to open the canteen if the school is allowed to reopen, but there is no order from the government".*
> *"Yes, we are ready at school, the canteen will be adjusted to the situation and we must add the handwashing facilities".*

Some schools said that they are not ready yet to open the canteen when the school reopens:

> *"....if school will reopen it takes a lot of adjustments, it takes rules for goverment on how to open a school, kids are a lot. I think it takes training first for the officers and the facilities are also added. Sometimes controlling children is difficult"*

Discussion

This is one of the first studies to describe school canteen healthiness and the readiness to reopen post COVID-19 in Indonesia. The results of this study may be important for improving the healthiness of school canteens when schools are reopened post-pandemic.

We found that canteen healthiness was positively associated with the number of vendors inside the school, and interestingly it was inversely associated with the number of vendors outside the school. We also found that school canteens were more likely to be healthy when there was an official school canteen manager who was responsible for enforcing proper regulations, and when supervision of canteens occurred regularly by school officers or government officials. Readiness to reopen post COVID-19 was higher among schools that have their own school canteens and are located in rural areas.

The more vendors inside the school, the more likely the school canteen was to be healthy. A previous study found that student's food purchasing was positively and significantly associated with food availability in school canteens.[25–28] Thus, if school canteens provided only healthy foods, the probability of students purchasing unhealthy foods may be significantly reduced.[26] Having canteens inside the school also allows for easier management of the selection, preparation and cooking of the foods, and of the school standards of food quality and safety. The opposite is true when canteen vendors are located outside the school. A previous study demonstrated that overweight and obesity were more prevalent in non-compliant schools than in fully compliant schools in regards to obeying food regulations among school canteens.[29]

Good management practice is an important aspect to school canteen healthiness.[29] At least three pilars of management should be fulfilled in order to ensure adequate governance for healthy school canteens. First, there should be a legal organization in which a school canteen manager has legal authority to independently govern and manage the school canteen according to existing regulations and standards for quality management. In the present study, we found that school canteens whose manager owned a decision letter for canteen management were 15 times more likely to be deemed healthy than those who did not. By owning a decision letter for canteen management, a manager could use their authority to independently and maximally improve school canteen healthiness.

Second, there should be rigorous regulations that fit the local standards for healthy school canteen management and that are continuously and properly relayed to all school stakeholders and especially to students. We found that the likelihood for having a healthy school canteen was 3 times to 4.6 times higher when restriction on students buy foods outside of the school was relayed using a circular letter or pamphlet/banner, as opposed to orally. A previous study in Brazil showed that more than two-thirds of canteens sold prohibited foods, such as sweetened beverages and candies, industrialized popcorn and salty snacks, even though most of the school canteen administrators reported knowing the Canteen Law.[30]

Lastly, there should be frequent inspection or supervision especially from an independent party (external to the school) in order to ensure that school canteen managers comply with canteen regulations, laws, and other standards of health. Our study demonstrates that school canteens are 3 times more likely to be healthy if there is regular inspection or supervision by local external officers such as from the primary health center or FDA. Previous studies have found that many schools fail to provide guidance on what must be served to improve the nutritional value of meals or foods in school canteens despite the country having clear school food policies[31] that most school canteen managers report having knowledge of.[30]

Until the end of February 2021, almost all primary schools in Indonesia were still closed and education programs were being delivered to children online. Accordingly, almost all school canteens were also still closed. The readiness of schools to reopen school canteens post COVID-19 was 4.5 times higher among those who regulate their own canteens compared to those with externally regulated canteens. This may be due to the fact that those with their own canteens have more authority and flexibility in management. Furthermore, readiness to reopen was dependent on receiving information from the government regarding regulations for reopening. However, there has been no certain information about the end of COVID-19 pandemic and the government of Indonesia has not yet prepared regulations or guidelines for reopening school canteens following the COVID-19 pandemic.

It is interesting to note that readiness to reopen school canteens was 4 times higher among primary schools located in rural areas than those located in urban areas. This may be due to the evidence that the incidence of and mortality rates due to COVID-19 were significantly lower in rural areas than in urban areas.[32-34]

The cross-sectional design is a limitation of this study as it restricts our ability to assign causation. A preferable design would be an experimental study such as a Randomized Cluster Controlled Trial to test the implementation of different policies to improve school canteen healthiness by taking culture, geographical and environmental factors into account. Findings could be enhanced by the inclusion of qualitative and observational studies of school canteens. There are plans for further qualitative data collection following the pandemic.

Conclusions

More than half of school canteens in this population were considered to be unhealthy, and we identified ways in which these school canteens could be improved, such as by enforcing national food policy and national healthy school canteen standards as well as good management practices. It is imperative that school canteens be adequately prepared to reopen following the pandemic, and considerations should be made to ensure canteens open with healthy options for school children to choose from. Future studies need to be conducted to formulate healthy school canteen standards and to examine the effect of certain management techniques on the healthiness of school canteens. Government regulations and guidelines should be designed especially targeting the post-COVID-19 reopening of school canteens in Indonesia.

Correspondence: Hamam Hadi, Graduate School of Public Health, the University of Alma Ata, Jl. Brawijaya 99, Tamantirto, Yogyakarta 55183, Indonesia.
Tel.: +62.2744342288 - Fax: +62.2744342269.
E-mail: hhadi@almaata.ac.id

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