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### Analysis of User Needs in Organizing a Healthy Canteen at School Sri Kadaryati\*, Yunita Indah Prasetyaningrum, Sukismanto, Yuniarti Sisca Anggraeni

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#### ABSTRACT

The existence of healthy canteen in the school environment will support the consumption of safe and healthy food by school residents, especially for students. The organization of healthy canteen must also pay attention to the economic side of organizing a canteen. The canteen is a meeting place for sellers who have economic interests from the sale of food, and students as consumers who utilize the services of sellers in the canteen. The successful implementation of a healthy canteen in schools requires support from service users, including sellers in the canteen as tenants of outlets and students as the main consumers in the canteen. This study explores the needs of users in organizing healthy canteens in schools. This research was a qualitative study with case study approach, conducted from June to August 2024, involving resource persons from SMA N 1 Depok and SMP N 4 Depok, which are located in the Babarsari area, Depok, Sleman, Yogyakarta. Data collection used the Focus Group Discussion method with 12 resource persons from each representative of the two schools involved in the research. Sellers in the canteen have concerns that their product will not sold because the provision of healthy food is not in accordance with consumer preferences. User needs in the implementation of healthy canteen include socialization to food managers or food handlers in the canteen and education on developing a healthy food menu. Schools should be able to facilitate these needs, so as to maximize the implementation of healthy canteens in schools.

**Keywords:** school canteen, healthy food, food safety, waste management

#### INTRODUCTION

The school age group is still experiencing a period of growth and development that requires adequate food consumption with balanced nutrition<sup>1</sup>. Eating habits and nutritious and safe food intake determine the nutritional status of school-age children and adolescents. Eating habits acquired during adolescence will have an impact on adulthood and old age<sup>2</sup>.

The incidence of overweight and obesity in adolescent groups has increased<sup>3</sup>. The increase in the incidence of overweight and obesity is supported by obesogenic environments, one of which is the food environment that contributes to the incidence of obesity<sup>4</sup>. School is where children spend more time daily than at home. Consumption of snacks in children or adolescents is expected to contribute energy and other nutrients that are useful to support growth and development<sup>5</sup>. Therefore, the provision of food in schools is one thing that needs attention. Schools as a place of education are an opportunity to develop programs to tackle obesity<sup>6</sup>. The existence of a healthy canteen in the school environment will support the consumption of safe and healthy food by school residents, especially for students.

The provision of healthy food in schools raises new issues regarding waste management. Organic waste from food also dominates 20.4-26.99% of waste in schools, depending on the school level<sup>7</sup>. Waste is also a problem in Yogyakarta. This is also supported by the closure of the Piyungan Regional Landfill as one of the landfills in Yogyakarta. Several related regulations were issued including the Sleman Regent Circular

Letter Number 660/01047 of 2019 concerning the reduction of plastic waste and the Head of the Sleman Regency Education Office Number 658/7223 of 2023 instructing the reduction and handling of waste in the school environment.

The previous education and Focus Group Discussion resulted in several agreements regarding the need for assistance, monitoring, and evaluation of the healthy canteen program. Strengthening the healthy canteen program is done with programs that encourage students to be aware of balanced nutrition, integration of learning materials in the classroom, and the use of social media as educational media<sup>8</sup>. Efforts to reduce waste from the canteen can be done by cultivating the purchase of food / drinks using containers brought by students, so that the use of disposable containers can be reduced<sup>9</sup>. The results also showed a commitment from school management to realize the implementation of healthy canteens in schools, with an agreement between sellers and schools related to waste restrictions and restrictions on unhealthy food.

The implementation of a healthy canteen must also pay attention to the economic side of organizing a canteen. The canteen is a meeting place for sellers who have economic interests from sales. Research shows the economic interests of sellers to make a profit by providing services to consumers<sup>10</sup>.

The successful implementation of a healthy canteen in schools requires support from service users, including sellers in the canteen as tenants of outlets and students as the main consumers in the canteen. Sellers try to provide products according to the needs or desires of consumers, as a form of realization of their economic interests. Adolescent consumption patterns that favor certain types of food can also be an influential factor in the products sold by canteen staff. This is interrelated with the aspect of food availability that affects the consumption of students as consumers in school canteens. Therefore, school management needs to bridge this issue by observing the needs of canteen users, so that they can be aligned with the provision of healthy food through the organization of school canteens. This study aims to explore the needs of users in organizing healthy canteens in schools.

## **MATERIAL AND METHOD**

This research was a qualitative research with a case study approach. The purpose of extracting data in this study was so that the resource person can convey the needs of the user side regarding the implementation of a healthy canteen at school. The study is part of the development of observation instruments for food safety and healthy food provision in schools. The study has received Ethical Clearance from the Fikes Unriyo Health Research Ethics Commission with number 080.3/FIKES/PL/VI/2024.

The research was conducted from June to August 2024, involving resource persons from SMA N 1 Depok and SMP N 4 Depok, which are located in the Babarsari area, Depok, Sleman, Yogyakarta. Data collection used the Focus Group Discussion method with 12 resource persons from each representative of the two schools involved in the research. Data collection used the Focus Group Discussion method with 12 resource persons from each representative of the two schools involved in the study. The resource persons consisted of representatives of each school including teachers (P1, P2, P3, P4), canteen workers (P5, P6, P7, P8) and students (P9, P10, P11, P12). The resource persons consisted of teachers, canteen workers, and students. The selection of research sources by purposive sampling. The instruments used in this study included an unstructured in-depth interview guide, a recording device, a camera, and field notes. Researchers also provided informed consent to complete the approval of the research sources. The FGD lasted 60 minutes and was guided by a facilitator. Prior to the FGD, the resource persons were briefed on food safety and healthy food provision as prerequisites for organizing a healthy canteen.

Data analysis began by transcribing the data from the interviews with the interviewees, which were complemented by field notes and recordings. The researcher then read the entire data transcript from each interviewee and understood the contents of the transcript compared to the notes in the field. The final step was to draw conclusions in the form of narratives and compare them with theory.

## RESULTS AND DISCUSSION

SMA N 1 Depok and SMP N 4 Depok are two favorite of public high school dan public junior high schools in Sleman Regency. Both schools are located in the Babarsari area, which is an urban area with various culinary facilities around the school. The Babarsari area has developed with the presence of several schools and higher education in the area. Physical changes in the Babarsari area from 2003-2017 were changes in agricultural land use to built-up land of 0.61% per year. The development of the campus encourages the development of culinary areas in the Babarsari area. Observations in the field show a variety of culinary, ranging from street food, food stalls, to cafes and restaurants. The menus served also vary, but foods high in GGL (sugar, salt and fat) are quite easy and widely found. Easy access to food is supported by the location factor with close proximity, in addition to the development of food ordering and delivery applications. These conditions support the emergence of an obesogenic environment.

School is an effective place for learning and awareness of school citizens as an effort to cultivate a sense of environmental love<sup>11</sup>. In this case, the government also seeks to improve quality through health coaching education and environmental conservation education through school community. School as an educational institution plays an important role in health promotion efforts. An important component in implementing school health efforts is through healthy canteen services.

A healthy canteen must be able to provide healthy main or snack foods, with nutritious, hygienic, and safe criteria for consumption for students and other school residents<sup>12,13</sup>. In order to ensure the implementation of healthy canteens and snacks in schools, the following components need to be considered, namely school commitment and management, human resources, facilities and infrastructure, and food quality<sup>14</sup>. Some basic policies that need to be implemented in the guidelines for healthy canteen management include general requirements for food handlers, personal hygiene, use of PPE, provision of sanitation facilities, operational management of food delivery, cleanliness of consumer areas, food delivery systems, and menu management<sup>15</sup>.

The food quality component means that food served in healthy canteens must be safe from physical hazards, biological hazards, and chemical hazards and not contain harmful substances. In addition, the food served must be healthy and nutritionally balanced. Balanced nutrition in the form of increasing food fiber (from vegetables and fruit), reducing sugar-sweetened, ready-to-eat, oily and overly salty drinks<sup>14</sup>. In addition, the place/container/wrapper is not made of plastic, melamine, styrofoam, and or aluminum foil (for food and drinks using ceramic bowls/plates and glass cups, with stainlees spoons/forks, while for cakes using leaves as a base or wrapper<sup>13</sup>.

The development of healthy canteens in schools refers to the aspects of organizing healthy food and implementing food safety. Healthy food is defined as nutritious food in accordance with general guidelines for balanced nutrition. One of them is by providing a fruit and vegetable menu, as well as limiting high-sugar-salt-fat products<sup>16</sup>. Balanced nutrition guidelines are implemented by the government in order to improve the quality of human resources through efforts to improve community nutrition<sup>17</sup>. Fulfillment of food safety requirements in the canteen includes the outside area of the food service area, consumer service area, building in general, food selection and storage, food preparation and processing, equipment, presentation and packaging of cooked food<sup>18</sup>.

The concept of healthy food is also needed, in addition to the importance of food safety in school canteens. This is related to people's unhealthy consumption patterns, which have the potential to increase obesity and other non-communicable diseases. Analysis of individual food consumption surveys showed that 29.7 percent of the Indonesian population consumed sugar, salt and fat in excess of WHO recommendations<sup>19</sup>. The results showed that the intake of sugar, salt, and fat in elementary school students exceeded the daily consumption limit. There are differences in the intake of sugar, salt, and fat from children attending public and private elementary schools<sup>20</sup>. The results of the study in South Jakarta City also showed high consumption of sugar, salt and fat in school-age children. The consumption of added sugar in individuals was 34.9 - 45.9 grams/day, with the highest value

in school-age males. The source of added sugar consumed by individuals came from food and soft drinks. Daily salt intake ranged from 5.46-7.43 grams/day, while fat intake reached 49-65.1 grams/day. The contribution of salt and fat intake consumed came from food streets, restaurants, or fast food. Research shows that men consume more salt and fat than women<sup>21</sup>. These various studies imply the consumption patterns of children and adolescents who tend to favor unhealthy snacks. This raises problems from canteen users, if they are required to provide healthier snack food. Sellers have concerns if their merchandise does not sell. This is as stated by the following person.

*“So I don't understand there, what needs to be prepared from the canteen handler for food safety readiness? Do we have to really process fresh food, while the children sometimes have carried the situation from home so - not all food has to be healthy, right? later our canteen will not sell if we only process healthy food. Meanwhile, the children already have their favorite food.”*

Source: P5

Food consumption behavior depends on the availability of food in the surrounding environment. Likewise, in students, food consumption depends on the availability of food in the school environment<sup>22</sup>. Consumption behavior is also related to food selection behavior which is influenced by preference for sensory characteristics (taste)<sup>23</sup>. This is supported by the results of research on adolescents, who like sweet and salty foods, such as french fries, fried noodles, soy sauce fried chicken, grilled chicken, crispy flour fried chicken, and brown bread<sup>24</sup>. The level of fruit and vegetable consumption in adolescents is still relatively low<sup>25</sup>. Apart from environmental factors, knowledge also influences consumption behavior. There is a relationship between knowledge and fruit and vegetable consumption behavior<sup>26</sup> and attitudes with fruit and vegetable consumption<sup>27</sup>. Thus, efforts to increase knowledge and attitudes can be made to support better consumption behavior. Nutrition education on healthy food consumption behavior can be carried out in schools.

In meeting the needs of providing healthy food and fulfilling food safety in the canteen, a written policy on healthy canteen management is needed to ensure the sustainability of economic activities in the canteen<sup>12</sup>. Based on research in 2023 at one of the schools involved in this study, school management already has an agreement between the school and sellers in the canteen regarding the obligation to sell healthy and nutritious food<sup>8</sup>. This regulation can be made more specific about what foods are allowed and need to be limited for health reasons. School management also needs to provide socialization related to the rules imposed on school canteens. Nutrition education on low sugar, salt, fat consumption patterns can increase knowledge in adolescents<sup>28</sup>. This is in accordance with the user needs presented below.

*“For me personally, all of this might be added to the socialization to the canteen mothers, because from earlier I saw that the canteen mothers were worried about what I would sell,,,, later it wouldn't sell,,, later we can add related instruments such as seminars on making healthy but delicious food so that later they don't get stuck, this doesn't sell, so that we develop this instrument in two directions, not just one direction.”*

Source: P9

*“For myself, it's not far from what the lady said earlier, just give more to the canteen mother suggestions on what to sell, if everything can't be sold, I'm confused about what to sell. Yes, we educate and give advice on what to sell.”*

Source: P11

Healthy menu choices will affect the increase in sales of the menu. Food delivery systems also contribute to better dietary compliance. Research shows that vegetarian menu sales increase with the availability of an increased proportion of these menus<sup>29</sup>. In addition,

food variety is one of the factors that influence student satisfaction as canteen consumers (many food variants, healthy food, hygienic food)<sup>30</sup>. Therefore, food sellers also need to be equipped with capacity building to be able to provide a healthy menu in the canteen. This is as stated by research respondents regarding the need for education on organizing a healthy menu for food vendors in the canteen.

Informants suggested that there are facilities that meet the needs of food organization with good ventilation. This is in line with the prerequisites for facilities and infrastructure in the four pillars of a healthy canteen. If there is cooking in the canteen, ventilation should be provided to ensure proper air exchange. In addition, gauze should be added to prevent insects or other animals from entering<sup>12</sup>. In addition, good air ventilation is also one of the environmental health prerequisites that need to be met in the environmental health inspection form of the canteen as a food processing place<sup>18</sup>.

*“regarding ventilation, ventilation must be sufficient but if it is excessive that animals can pass through, it is not good”*  
Source: Informant 1

The kitchen where food is organized is proportional to the amount of food produced. If necessary, smoke exhaust can be provided to maintain air circulation in the canteen area<sup>12</sup>. The location of the canteen is a location that is free from odor / smoke / dust / dirt pollution<sup>18</sup>. In line with this, the interviewee also added about the need for sufficient space for cooking and storing food ingredients.

*“If the cooking area is too narrow, our activities to move quickly to serve and cook will also interfere. Then for storage - storage of food ingredients that will be processed must also be covered, usually it is provided by the canteen, but if the area is not sufficient, it is also not free.”*  
Source: P5

Schools can collaborate with related sectors in organizing healthy canteens, such as local governments or health centers. Coaching and improving the quality of snacks sold in healthy canteens in schools can be done gradually<sup>11</sup>. This is as stated by the following interviewee.

*“Then this may not eliminate but rather reduce. The problem is that if you eliminate it, there will be nothing to sell, so later we will also be confused about what to eat. That's all.”*  
Source: P11

Waste management is also important in organizing food in the canteen. Waste management can be done through making biogas from organic waste and managing inorganic waste through recycle<sup>31</sup>. Previous activities at SMP N 4 Depok produced educational media posters to reduce waste from disposable materials in the canteen. The presentation of this media received good acceptance from teachers and canteen managers<sup>32</sup>. However, the practice of zerowaste from the canteen still requires cooperation from various parties, especially consumers in the canteen and food vendors as users of rental services for canteen outlets at school. This was conveyed by the following resource person.

*“The canteen strives for zerowaste, still providing plastic although a little. Some have obeyed the rules given by the school. But there are canteens that are worse, there are still foods served with hot water in plastic cups, such as glass noodles used in plastic cups.”*  
Source: P5

*“Sometimes we offer, just use a cup, then we'll wash it back, the children don't want to, they want to use plastic cups so they can take it to class. so there is still packaging of hot food in plastic.”*

Source: P6

*“Because the children cannot be invited to cooperate, while the canteen also wants to reduce waste immediately because we are also burdened if the children's waste is brought to us again, we are burdened because we have to take it home or we look for collectors to take our plastic. yes that,,, duh how is it? yes, the children should be invited to work together quickly.”*

Source: P5

The results of this study can provide an overview of the needs of users (sellers in the canteen and canteen consumers) in organizing healthy canteens in schools. Further data collection can be done through in-depth interviews, so that each respondent can freely express their opinions about the needs in organizing a healthy canteen. Various user needs regarding the implementation of a healthy canteen can be taken into consideration by school managers in developing a healthy canteen in their respective institutions. Fulfillment of needs can be done in stages according to the conditions of each school.

## CONCLUSION

User needs in the implementation of a healthy canteen include socialization to food managers or food handlers in the canteen and education on developing a healthy food menu. Schools should be able to facilitate these needs, so as to maximize the implementation of healthy canteens in schools. Socialization of healthy canteen activities should not only be given to sellers in the canteen, but also given to students as consumers. Parents can also be involved in socializing the implementation of healthy canteens in schools, in order to provide environmental support and motivation to their children to increase healthy food consumption. Education on healthy menu development can be done internally or involve external parties, such as community health centers or other health academic institution.

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