

Counseling on healthy snack and food for balanced nutrition achievement

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Article information:	ABSTRACT
Article history	Healthy food is an essential part of the process of growth and development of children, as well as the basis for maintaining health. In line with the times, more and more chemicals are used as additives and the misuse of harmful chemicals in food can cause disease. The purpose of this activity is to increase the knowledge of mothers in choosing healthy snacks and being able to provide healthy provisions for children at school. This community service activity was carried out in Pematang Kapau Village which was attended by 16 women. This community service is carried out using the <i>Focus Group Discussion</i> (FGD) method, pre-test, and post-test, counseling, the practice of identifying dyes with the acid-base concept, processing practices, practice evaluation, and advocacy. The results of this community service show that the knowledge of respondents before and after counseling is good, with an average of 73.75 % and after counseling, there is an increase in the average knowledge of respondents by 95.31 %. The attitude of the respondents before and after the counseling was of good value, the score before the counseling was 82.50 %, and after the counseling was 98.13 %. The behavior of the respondents before and after counseling was in the category of positive behavior, the behavioral score before counseling was 82.50%, and after counseling was 98.13%. Some of the respondents have prepared lunches or healthy snacks to take their children to school so that children do not snack randomly.
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Introduction

The success of a nation's development is determined by quality Human Resources (HR). The school-age period is part of the stages in the human life cycle that greatly determines the quality of human resources. To meet the energy and protein needs of school children, School Snack Food (PJAS) is needed for children who do not or do not have breakfast and do not bring lunch (1).

The habit of consuming street food is very popular among school children. Snacking habits are very difficult to break. Usually, the street food they like is food with attractive color, appearance, texture, aroma, and taste (2). School children's snacks are at risk of biological or chemical contamination which can interfere with health, both in the short and long term (3). Currently, it is known that many PJAS contain Food Additives (BTP) that do not meet the requirements (TMS) and use hazardous materials such as formalin, rhodamine, and borax (4).

School snacks are increasingly diverse, ranging from traditional snacks to modern snacks. Children will be more likely to buy snacks that are available closest to their existence. Therefore, healthy snacks should be available both at home and in the school environment so that children's access to healthy snacks is guaranteed.

The quality of snacks, especially nutritional quality, greatly affects the condition of food intake in children. The quantity and quality of food and beverages consumed will affect the level of individual and community health. For the body to stay healthy and avoid various

chronic diseases or non-communicable diseases (Non-communicable diseases) related to nutrition, the people's diet needs to be improved towards the consumption of balanced nutrition. (5). If the snacks consumed by children are healthy, it will affect the development and health of children. Vice versa, if the snacks consumed by children are not healthy, it will affect the development and health of children (6).

The results showed that in general, snacks for school students contained below standard energy (300 kcal/portion). The composition of the ingredients for snacks is less varied. Most snacks (71.4%) contain formalin, borax (23.5%), and rhodamine B (18.5%) (7). Extension and demonstration activities are quite effective in increasing knowledge and understanding of the material provided (8). Materials on the process of preparing and serving school snacks are needed and healthy behavior for school snack consumption. The program must involve parents as companion targets because parents play an important role in the development and health of children.

In this regard, the purpose of this community service activity is to find out the description of mothers' knowledge, attitudes, and behavior towards balanced nutrition and healthy food as well as increase parental awareness to bring children healthy lunches or snacks to school so that children do not snack randomly.

Method

This service activity was carried out through counseling activities and healthy snack processing practices which were attended by 16 Family Welfare Development (*PKK*) mothers, Pematang Kapau Village, Pekanbaru City. This activity is carried out in several stages as follows:

1. FGD (Focus Group Discussion)
The purpose of this FGD was to gather information about the routine activities carried out by mothers in preparing provisions for their children.
2. Pre-test
The pre-test aims to obtain initial information in the form of a mother's knowledge about balanced nutrition and the selection of healthy snacks by using a knowledge questionnaire.
3. Extension and identification of dyes with the concept of acids and bases. This counseling aims to provide information related to balanced nutrition messages for school children, selection of healthy snacks, types of hazards in food, and the use of food additives as well as the practice of identifying dyes with the concept of acid and base.
4. Snack processing practice
The women participating in this training practice processing healthy and nutritious snacks that refer to the community service module.
5. Posttest
This activity is a form of evaluation of a mother's knowledge about balanced nutrition and healthy snacks.
6. Evaluation
The evaluation was also carried out on the application of the selection and preparation of healthy snacks for children. This evaluation was carried out for 1 month after the training using a snack list questionnaire prepared every week by the trainees. The data obtained is the type of lunch prepared by the mother every week.
7. Advocacy
The advocacy activity was addressed to the Chairperson of the team of *PKK* Pematang Kapau Village. It is hoped that with this advocacy, *PKK* mothers routinely carry out activities aimed at increasing knowledge and skills in preparing healthy snacks for children with the principle of balanced nutrition. This activity takes place during the period of community service activities.

Result and Discussion

Community service activities began with conducting *Focus Group Discussions* (FGD). The results of the FGD that have been carried out have obtained an overview of information on balanced nutrition, principles of balanced nutrition, the contents of my plate, the safety of school snacks, health problems due to consuming snacks that have been purchased, and routine activities carried out by mothers in preparing provisions for children. The role of parents is needed for the development of children in providing knowledge and supervision in the selection of snacks (9).

Respondent's knowledge is the average value of correct answers assessed by a knowledge questionnaire. The results of the respondents' knowledge scores can be seen in Figure 1.

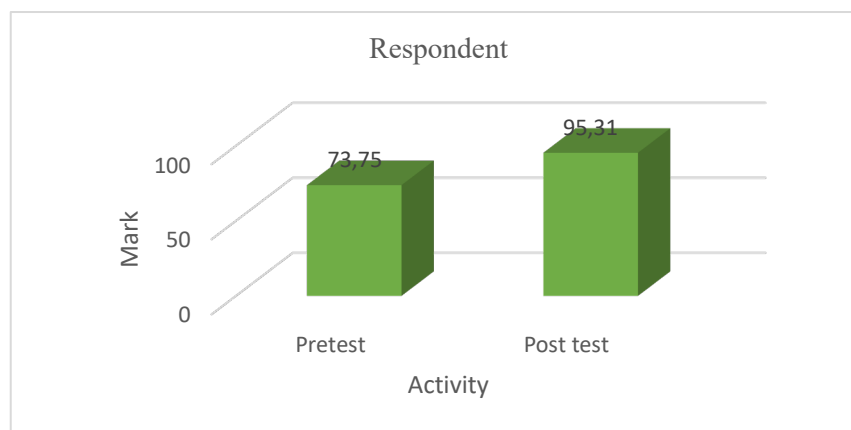


Figure 1. Respondents' Knowledge Score

The average score of respondents' knowledge at the time of the *pretest* was 73.75. The knowledge of the respondents before the counseling activities was carried out was in a good category, this was because several respondents were health cadres who had been exposed to balanced nutrition and healthy snacks. After the counseling was carried out there was an increase in the respondents' knowledge scores. The average post-test *knowledge score* was 95.31. Respondents who previously did not know the principle of balanced nutrition after counseling the respondents were able to state the principles and messages of balanced nutrition and be able to identify snacks and food additives used in food processing. Counseling can increase mothers' knowledge of balanced nutrition through lectures, question and answer sessions, video screenings, and modules distributed during activities. The provision of balanced nutrition counseling to toddlers can increase mothers' knowledge with an average value of 75% (10).

A person's nutritional knowledge will affect attitudes and behavior in food selection. The higher the knowledge, the better the nutritional state of the individual (11) ; (12). Factors that affect a person's knowledge include education, information obtained, environment, experience, age, and socio-cultural and economic. Increased knowledge can be done by providing information, even though the mother's level of education is low obtaining a lot of information, for example from health counseling, television, radio, and newspapers will increase the mother's knowledge to be good. (13).

Attitude measurement was carried out to find out what the respondent's attitude regarding balanced nutrition and the selection of snacks was. The attitude of the respondent is the average value of the correct answer which is assessed by an attitude questionnaire. The results of the respondents' attitude scores can be seen in Figure 2.

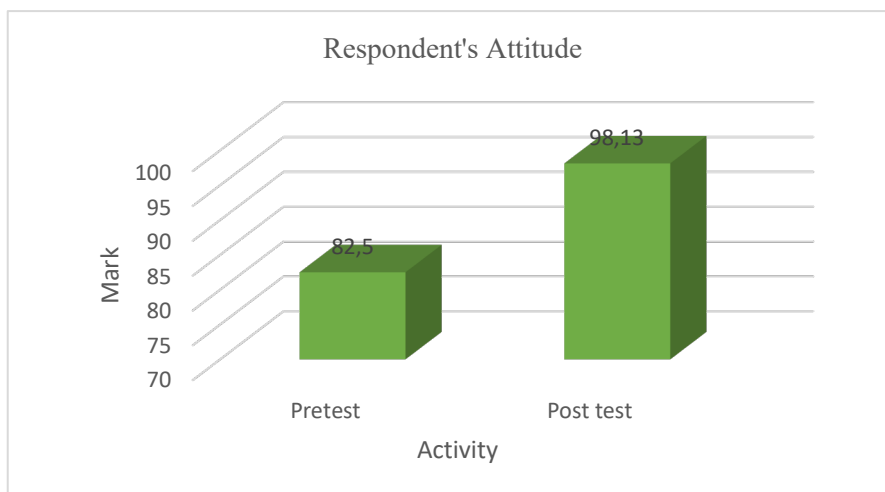


Figure 2. Respondents' Attitude Score

The average score of respondents' attitudes before counseling was 82,5 0. After counseling, the average attitude score of the respondents increased by 98.13. The results of the attitude scores before counseling on average respondents' attitudes towards balanced nutrition and the selection of healthy snacks were in a good category. This is because before the counseling the respondents also knew a good category.

Counseling activities for mothers of children under five can increase knowledge and attitudes about balanced nutrition for children under five (14). The existence of counseling can affect the increase in the mother's attitude towards something (15). This is also to research that counseling about breakfast 3 times can increase the value of student attitudes (16).

Information obtained during counseling with messages on balanced nutrition and food safety delivered through lectures and questions and answers as well as video screenings can form a positive attitude. Counseling can foster changes in the knowledge and attitudes of mothers participating in community service.

The respondent's behavior is the average value of the correct answers assessed by a behavioral questionnaire. The results of the respondents' behavior scores can be seen in Figure 3.

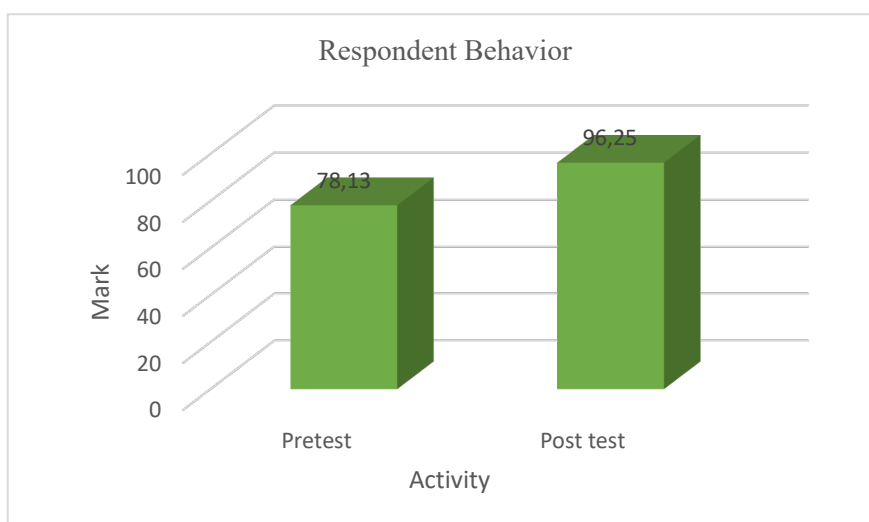


Figure 3. Respondent Behavior Score

The behavioral score obtained is the average *pretest behavior score* is 78.13. The average post-test behavior score was 96.25. The respondent's behavior scores both before and after the counseling were in the category of positive behavior. This is due to the knowledge and attitudes of respondents who are also in the good category. The information conveyed about

balanced nutrition and food safety through outreach activities can be received and applied directly by the participants so that they can change behavior for the better. The more information or knowledge about balanced nutrition received by the mother, the better the mother's behavior regarding the practice of feeding children under five guided by balanced nutrition (17). This community service activity can be seen in Figure 4



Figure 4. Community Service Activities

In this community service activity, a simple practice is carried out in identifying food coloring qualitatively with the acid-base concept. The alkaline solution used is a soap solution (detergent) and can also use a caustic soda solution and an acid solution used is vinegar. The samples used in this identification are natural dyes, synthetic dyes, and dyes that are prohibited from being used in food. Natural dyes include curcumin derived from turmeric extract, anthocyanin derived from dragon fruit extract, and chlorophyll derived from pandan leaf extract. Examples of synthetic dyes used in this identification are food colorings approved by the government dyes, namely green, red and yellow dyes while the dyes that are prohibited from being used in food are textile dyes which are green, red, and yellow. The purpose of this practical activity is for respondents to know and be skilled in identifying the dyes used in providing food /snacks for the family, using materials that are easily obtained and can be done in their own homes. The dye identification activity can be seen in Figure 5.



Figure 5. Identification of Dyes

Evaluation of food processing practices is carried out using an assessment checklist based on indicators including the preparation process material selection and cleanliness. The second indicator is the processing process, including the use of BTP, the accuracy of

processing steps, and cleanliness during processing. The third indicator is the process of serving food, namely, the product served is attractive in terms of color, texture accuracy, attractive in terms of aroma, and taste. The results of the assessment of snack processing practices can be seen in Figure 6.

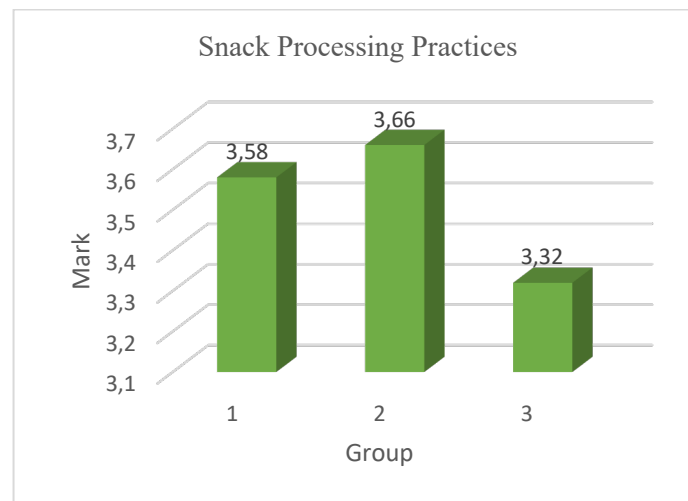


Figure 6. Snack Processing Practices

The average value of each group is above 3, with the lowest average value of 3.32 and the highest of 3.58 and in the good category. The practice of processing healthy snacks carried out after counseling can increase the value of a mother's behavior in choosing healthy and nutritious snacks. An increase in the handler's behavior score in fried onion IRT occurred after counseling and processing practices were carried out (18). Respondents who practice processing already understand the selection of good food ingredients. The processing steps are also by the guidelines/modules provided. The selected food ingredients are still fresh, undamaged, odorless, and undamaged. The cleanliness of raw materials and processing processes has been considered by the training participants. Some groups innovate by modifying the recipes in the module.

Evaluation of the preparation of healthy snacks for achieving balanced nutrition is done by filling out the lunch list form that has been prepared by the mother every day. Filling out this form is done by filling out the food record menu every week. Based on the results of the food record menu, it was found that most of the mothers prepared provisions for their children to go to school every day. Some types of snacks that have been made by respondents include green bean porridge, caramelized bananas, vegetable spring rolls, purple sweet potato salak seed compote, purple sweet potato *klepon*, vegetable *bakwan*, *pastels*, vegetable stuffed tofu, banana compote, corn compote, sticky rice porridge black, *nagasari*, *wajik*, grilled *lemper*, vegetable *martabak*, *onde-onde*, *gemplong*, brown sugar jelly, *empek-empek*, pudding, egg sausage, marrow porridge, soursop juice, and mango juice. However, there are still some respondents who cannot prepare food for their children every day. Some respondents admitted that they were so busy that they could not prepare their food, so they bought food from outside.

Conclusion

There was an increase in the score of knowledge, attitudes, and behavior of respondents after being given counseling about balanced nutrition and healthy snack processing practices.

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Reference

1. BPOM RI B. Pedoman Pangan Jajanan Anak Sekolah Untuk Pencapaian Gizi Seimbang. Jakarta; 2013.
2. Iklima N. Gambaran Pemilihan Makanan Jajanan Pada Anak Usia Sekolah Dasar. 2017;5(1):8–17.
3. Nurbiyati T, Wibowo AH. Pentingnya Memilih Jajanan Sehat Demi Kesehatan Anak. J Inov Dan Kewirausahaan. 2014;3(3):192–6.
4. Wariyah C, Dewi SHC. Penggunaan Pengawet dan Pemanis Buatan pada Pangan Jajanan Anak Sekolah (PJAS) di Wilayah Kabupaten Kulon Progo -DIY. Agritech. 2013;33(2):146–53.
5. Kementerian Kesehatan RI. Pedoman Gizi Seimbang. Indonesia; 2014.
6. Purwani E, Muwakhidah. Peningkatan Pengetahuan Anak SD Melalui Edukasi Gizi Tentang Makanan Jajanan Sehat dan Gizi Seimbang Dengan Media Buku Cerita Bergambar di SD Tiyanan 01 dan 03 Sukoharjo. War LPM. 2016;19(2):105–9.
7. Kristianto Y, Riyadi BD, Mustafa A. Faktor Determinan Pemilihan Makanan Jajanan pada Siswa Sekolah Dasar. Kesmas J Kesehat Masy Nas. 2013;7(11):489–94.
8. Antari I. Peningkatan Keterampilan Cuci Tangan Melalui Metode Penyuluhan dan Praktik di RA Tahfidzul Quran Jamilurrahman. J Abdimas Madani. 2019;1(2):96–9.
9. Nur A, Duanita MH. Dampak Penyuluhan Jajanan Sehat Terhadap Pengetahuan dan Sikap Anak Sekolah di Madrasah Ibtidaiyah Al-Fitrah Kampung Nelayan Oesapa Kupang. CHMK Health J. 2019;3(September):62–8.
10. Pratiwi EN, Nurjanah S, Murharyati A. Penyuluhan Kesehatan Tentang Gizi Seimbang di Posyandu Balita Kinasih RW 29 Wilayah Kelurahan Kadipiro Surakarta. J Salam Sehat Masy JSSM. 2020;2(1):61–6.
11. Soraya D, Sukandar D, Sinaga T. Hubungan Pengetahuan Gizi , Tingkat Kecukupan Zat Gizi , dan Aktivitas Fisik dengan Status Gizi pada Guru SMP. J Gizi Masy. 2017;6(1):29–36.
12. Puspasari N, Andriani M. Hubungan Pengetahuan Ibu tentang Gizi dan Asupan Makan Balita dengan Status Gizi Balita (BB/U) Usia 12-24 Bulan. Amerta Nutr. 2017;369–78.
13. Khotimah IK. Gambaran Perilaku Ibu Dalam Pemenuhan Gizi Seimbang pada Balita di Posyandu Mayang Kelurahan Sukorejo Kecamatan Sukorejo Kota Blitar. J Ners Dan Kebidanan. 2016;3(2):107–12.
14. Mardhiah A, Riyanti R, Marlina. Efektifitas Penyuluhan dan Media Audio Visual Terhadap Pengetahuan dan Sikap Ibu Anak Balita Gizi Kurang di Puskesmas Medan Sunggal. Jurbak Kesehat Glob. 2020;3(1):18–25.
15. Merdhika WAR, Mardji, Devi M. Pengaruh Penyuluhan ASI Eksklusif Terhadap Pengetahuan Ibu Tentang Asi Eksklusif dan Sikap Ibu Menyusui di Kecamatan Kanigoro Kabupaten Blitar. Teknol Dan Kejuru. 2014;37(1):65–72.
16. Waldani D, Rasyid R, Agus Z. Pengaruh Penyuluhan Gizi Terhadap Perubahan Perilaku Kebiasaan Sarapan Pagi Murid SD Negeri 05 Solok Selatan Tahun 2016. J Kesehat Andalas. 2018;7(2):176–81.
17. Azria CR, Husnah. Pengaruh Penyuluhan Gizi Terhadap Pengetahuan dan Perilaku Ibu Tentang Gizi Seimbang Balita Kota Banda Aceh. J Kedokt Syiah Kuala. 2016;16(2):87–92.
18. Asih ER, Arsil Y. Penerapan Cara Produksi Pangan yang Baik pada IRT Bawang Goreng Kota Pekanbaru. DINAMISIA. 2019;3(2):221–7.