

Workshop on Making Doughnut with The Addition of Vegetables and Fruits Extract to Kasih Sayang PAUD Student's Mothers

Abduh Hairuddin Angkat^{1}, Siti Gabena Sir¹, Emi Inayah S Siregar¹*

¹Nutrition Major Health Polytechnic Ministry of Health

Abstract. The prevalence of deficiency of vegetables and fruit consumption in Indonesia among children < 10 years is 93.6%. Donuts are snacks that also have some good nutritional content. The purpose of this community dedication is to increase the knowledge of parents, especially mothers of students in PAUD, about the benefits of vegetables and fruit. Improve skills in making donuts with a combination of vegetables and fruits juices to increase vegetables and fruits intake in preschool age children. The service was carried out at Kasih Sayang PAUD, the form of activity was counseling for 45 minutes and continued with training on making donuts with the addition of juice (green spinach, carrots, dragon fruit and chopped red spinach). The results of the training activities showed an increase in participants' knowledge from an average of 6.2 points before training to 8.27 points after training. Participants are also proficient in making donuts with the addition of vegetable and fruit juices.

Keyword: Donuts, Addition of Juice, Vegetables, Fruits

Abstrak. Prevalensi kekurangan konsumsi sayur dan buah di Indonesia usia < 10 tahun adalah sebesar 93.6%. Donat merupakan makanan ringan yang juga memiliki beberapa kandungan gizi yang baik. Tujuan pengabdian masyarakat ini meningkatkan pengetahuan orang tua khususnya ibu siswa di Pendidikan Anak Usia Dini (PAUD) tentang manfaat sayur dan buah. Meningkatkan keterampilan dalam membuat donat kombinasi sari sayur dan buah untuk meningkatkan asupan sayur dan buah pada anak usia pra sekolah. Pengabdian dilaksanakan di PAUD Kasih Sayang, bentuk kegiatan adalah dengan penyuluhan selama 45 menit dan dilanjutkan dengan pelatihan pembuatan donat dengan penambahan sari (bayam hijau, wortel, buah naga dan cincangan bayam merah). Hasil penyuluhan diperoleh adanya peningkatan pengetahuan peserta ditandai dengan rata rata total pengetahuan sebelum penyuluhan 6,2 poin, sesudah dilakukan penyuluhan menjadi 8,27 poin. Peserta pelatihan juga mampu membuat donat dengan penambahan sari sayur dan buah secara mandiri.

Kata Kunci : Donat, Sayuran, Buah, Anak Usia Dini

Received [12 November 2021] | Revised [8 December 2021] | Accepted [10 December 2021]

*Corresponding author at: Jalan Negara Simpang Tanjung Garbus Lubuk Pakam, North Sumatra - Indonesia

E-mail address: chairudinangkat@gmail.com

1. Introduction

Vegetables and fruits are beneficial micronutrient substances to the body, both nutrient components are crucial to body metabolism process as regulator and antibody, while also helpful to decrease the incidence of chronic diseases. Vegetables and fruits are important foods that must be consumed at every meal. Not only for the adults, consuming vegetables and fruits is important from childhood, especially on age 3-6, because that time is the golden age for child growth both physically and mentally [1].

Regarding the importance of consuming vegetables and fruits, the Food and Agriculture Organization (FAO) recommends that we should eat vegetables and fruits regularly as much as 75 Kg/capita/year. The World Health Organization (WHO) also recommends consuming as many vegetables and fruits as 400 g every day. In Indonesia, vegetables and fruits are easy foodstuffs to get, even every region has fruits and vegetables as its own characteristics. This condition is inversely proportional to the low vegetables and fruits consumption of Indonesian people. The lack of consumption of vegetables and fruits in Indonesia is almost prevalent in every province, including North Sumatera [2].

The prevalence of deficiency of vegetables and fruits consumption among Indonesian People of age under 10 is 93.6% [3]. According to the Balanced Nutrient Guidelines recommendation, people under 10 years old are recommended to eat vegetables and fruits around 3-5 portions of vegetables, equal to 250 g per day and 2-3 portions of fruits, equal to 150 g per day. The benefits of consuming vegetables and fruits such as helping bone, eye, hair, and skin growth, preventing constipation, cancer, and degenerative disease like obesity, and increasing appetite. [3].

This condition is in line with findings on the Survey on Individual Foods in Total Diet Study in 2014. It is said that people's consumption of vegetables, fruits, and their products are still low [4]. Children eating habits cannot be separated from the role of their parents, especially mothers in making food and also mother's perception and behaviour. If mothers give their children a balanced diet every day, it will indirectly establish good eating habits in children. As for the behavior, it could be influenced by some factors. According to WHO's theory, a behavior could be influenced by 4 factors, one of them is Culture [5].

Vegetables and Fruits have low calories and are the source of fiber and micronutrients such as vitamins and minerals. Based on 2013's Riskesdas, the recommendation for vegetables and/or fruits consumption is 5 portions per day at minimum. However, the proportion for the lack of consumption of vegetables and fruit in Indonesia is very high, which is 93.6%. Ten points of the Balanced Nutrient Guidelines in Indonesia also recommend consuming lots of vegetables and sufficient fruits. This is because a diet high in vegetables and fruits could decrease the risk of chronic diseases such as coronary heart disease, some type of diabetes and stroke, also could

decrease the risk of obesity [6]. Recently, changes in food consumption pattern in Indonesia lead to the decrease of vegetables and fruits consumption in almost all provinces in Indonesia [7]. Low consumption of vegetables and fruits on children could increase obesity risk. Each individual is recommended to consume every type of food, however most of them only consume a certain type of foods and skip or consume a little vegetables and fruits [2].

Carrot is an important and the most planted vegetable in various places. In 2020, the top carrot production, highest and biggest of Sumatera were North Sumatera with 99,306 ton of production, with an area of 4,155 hectare [8]. Carrot has not been utilized optimally, because it is only used in basic processing like soup, stir fry, and cap cay. Also, most Indonesians did not like carrots. Therefore, in an attempt to increase carrot consumption among Indonesian people, the alternative is by processing it into additives such as additives on doughnuts, noodles, crackers, syrup, sausage, etc. [9].

Doughnuts are snacks that also have some good nutrients. 100g of doughnuts contain 357KCal of energy, 9.4 g of protein, 10.4 g of fat, 56.5 g of carbohydrate, and if modified by adding carrots processed additive, it will contain more nutrients with carrot's nutrient. Nutrient content in 100g carrot tubers were 42 calories, 1.20g protein, 9.3 g carbohydrate, 39 mg calcium, 37 mg phosphor, 12 SI vitamin A, 6 mg vitamin C, 88.20 g water [7]. Doughnuts are fried snacks that are usually made from wheat flour, sugar, and butter. Doughnut has flavor fariant from the toppings. The toppings could be soft sugar, melted chocolate, granulated chocolate, etc. Therefore, doughnuts are not only loved among adults, but also children [9].

Doughnuts are favored by all from small children, teenagers, even old people. Therefore, the writers wanted to make a test by making a doughnut with carrot extract to add more nutrients to the doughnut [10]. Mothers play an important role in giving children good nutrition, where it could improve the nutritional status of the child [11]. If a mother's awareness of nutrition is good, it will affect the behavior of the children [12].

According to Supariasa, [13], general knowledge on nutrients is an essential component and precondition in changes to attitude and behavior towards nutrients to decrease nutrient problems. Sensitive nutrient intervention, such as involving the non-health sector in eating vegetables and fruits campaigns, proved to be effective in countermeasures against nutrient problems compared to nutrient intervention by the specific health sector. This is because sensitive nutrient intervention contributes 70% in countermeasures against nutrient problems, while specific nutrient intervention could only contribute by 30%.

Doughnut with vegetables and fruit addition is a research result of university professors and students in which the product in the form of doughnut with the addition of dragon fruit extract was studied in 2018, and doughnut with carrot extract, spinach extract, and minced spinach addition was studied in 2019.

Based on the points above, it is crucial for mothers with preschool children to get educated and workshop to make healthy snacks that could increase vegetables and fruits consumption because on the age of preschool, children usually are not actively consuming vegetables and fruits whole, therefore it is necessary to combine it with snacks that they like such as doughnut. The scope of this community dedication covers: (1) Forum about the benefits of consuming vegetables and fruits on preschool children, (2) Workshop on how to make doughnuts with vegetables extract addition, and (4) evaluation on the activity. Based on the above problems, the writers intend to do a community dedication at PAUD Kasih Sayang, Jalan Selamat Lurus gang Samosir, Medan to increase awareness and skills of parents with children of age 4-6, concerning the benefits of consuming vegetables and fruits in children's body and health.

2. Method

Ingredients used on doughnut making with the addition of dragon fruit and vegetable extract could be seen on the Table 1.

Table 1. Ingredients used in doughnut making with the addition of vegetables and fruits extracts.

Ingredients	Dragon Fruit Extract (A)	Carrot Extract (B)	Spinach Extract (C)	Minced Red Spinach (D)
Wheat flour	500 g	500 g	500 g	500 g
Dragon fruit extract	150 g	-	-	
Carrot extract	-	150 g	-	
Spinach extract	-	-	150 g	
Minced red spinach				150 g
Water	70 ml	70 ml	70 ml	100 ml
Granulated sugar	5 tbs	5 tbs	5 tbs	5 tbs
Yeast	1 ½ tbs	1½ tbs	1 ½ tbs	1 ½ tbs
Salt	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount
Egg yolks	2	2	2	2
Butter	100 g	100 g	100 g	100 gr
Fried Oil	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount

2.1 Procedure on making dragon fruit extract (A)

The red colored of dragon fruit was washed with tap water and peeled. 500 g of fruit flesh is added with water in a ratio of 2: 1 then crushed with a blender, and filteres to obtain dragon fruit extract.

2.2 Procedure on making carrot extract (B)

Carrots were washed by using tap water, peeled, and cut into small pieces. 500 g of carrot pieces were added with water in a ratio of 2: 1 then crushed with a blender and filtered to obtain carrot extract.

2.3 Procedure on making spinach extract (C)

Spinach leaves were washed by using tap water and added with water in a ratio of 2: 1 then crushed with a blender and filtered to obtain spinach extract.

2.4 Procedure on making minced red spinach (D)

Red spinach leaves were sorted, cleaned and washed with tap water and then it was minced to get minced red spinach leaves.

2.5 Doughnut making procedure

The formulation of doughnut can be seen in Table 1. Wheat flour, milk powder, yeast, and granulated sugar were placed into the bowl, stirred well, then egg yolk was added and mixed using a low speed of mixer. The vegetables and fruits extracts (carrot, dragon fruit, spinach minced red spinach leaves) little by little. Butter and water were added and mixed using a mixer until the dough becomes dull colored. The dough then was covered with a cloth tight for 30 minutes and after that it is formed into a proper shape of doughnuts The proofing of moulded doughnuts was allowed for 25 minutes at room temperature for raising the doughnuts volume. The proofed doughnuts were fried in hot palm oil in a fryer at 180 oC for 3 minutes.

2.6 Implementation step

In the community service group through leaflets, a pretest was first conducted to determine the level of participants' understanding of the benefits of vegetables and fruit for children aged 4-6 years. The pretest was given through a questionnaire which was distributed to the participants. After that, a forum was held where participants were given leaflets whose contents would be briefly discussed orally to the community service group within 45 minutes. The participants then took the leaflets home to read carefully. Then a posttest will be conducted on the next visit. Before doing the posttest, a discussion session will be opened to ask participants about the contents of the leaflet. On the same day a posttest was conducted to see if there was a change in participants' awareness by filling out the same questionnaire as the previous pretest.

2.7 Activity evaluation

The evaluation of this activity is to evaluate the participants' awareness of the general knowledge of vegetables and fruits. The evaluation is done by using a questionnaire with 10 questions and 3 option choices. Participants are given 1 point if answered correctly, and 0 if answered wrong. The highest score will be 10 points, and the lowest will be 0 point. The results are then divided into 2 categories as namely Good (6-10 points) and Inadequate (0-5 points).

3. Results and Discussion

The community dedication was held at PAUD Kasih Sayang within the office complex Siti Rejo III ward, which is located at Jalan Selamat Lurus gang Samosir, Medan. PAUD Kasih sayang is a school that is managed by Siti Rejo III ward.

The implementation of community dedication was done in 3 steps; introduction, which is evaluating the current awareness of the benefits of vegetables and fruits to preschool children of the general public, especially mothers with preschool children whose child is enrolled to PAUD Kasih Sayang as much as 30 people..

Table 2. The representation of participants awareness at pretest and posttest

Degree of Awareness	Pretest			Posttest		
	n	%	Mean	n	%	Mean
Good	18	60,0	6,2	28	93,0	8,27
Inadequate	12	40,0	-	2	7,0	-

Based on the Table 2, it could be seen that the results were as follows: 60.0% of the participants were categorized as good, while 40.0% of them were categorized as inadequate. The mean of the results score for the pretest was 6.2 points. At the posttest, the percentage of participants' awareness with the good category was 93.0%, while the inadequate category was 7.0%. The mean of the results for the posttest was 8.27 points.

Based on the awareness evaluation done at pretest and posttest, there was an increase in participants' awareness from the good category, from 60% at the pretest, to 93.0% at the posttest. This means there is an increase by 33.0% of participants' awareness to become the good category. Based on participants' score mean, at pretest the mean was 6.2 points, while at the posttest it becomes 8.27. This means there is an increase by 2.07 points in the mean of participants' results.

Workshop on How to Make Doughnuts with the Addition of Vegetables and Fruits extract

The workshop on how to make doughnuts with the addition of vegetables and fruits extract was started from a brief explanation about modifying vegetables and fruits extract in 5-10 minutes. Next is the explanation about ingredients that will be used. Participants were also taught about preparation steps such as mincing red spinach and making dragon fruit, carrot, and spinach extracts. Participants are required to do as demonstrated, accompanied by university lecturers and students who were taking part in this community dedication. After the ingredients were prepared, University lecturers and students then demonstrated on making the dough, thereafter participants would make the dough as demonstrated. Participants are requested to make the dough according to the given recipe in turn alternately. In this activity, participants were asked to make donuts by adding carrot extract, as research conducted by Munawarrah [9]. After the

dough was finished, participants were also taught how to ferment the dough so that the dough would rise.

After the dough fermented, participants were taught how to process the dough again before being shaped and divided into portions to suit taste. Participants are required to take part in shaping the dough according to the determined weight. Participants were enthusiastic in doing the task as demonstrated by the instructor.

Participants were active in portioning and shaping dough to the desired shapes. After shaping the dough, participants were then taught how to fry the dough so it will be evenly cooked. Participants were required to take part in frying the already shaped dough. After frying doughnuts, participants were also taught how to make the doughnut toppings. The topping making method was the one using soft sugar, cream and granulated chocolate. Donuts are loved by both children and adults, and are generally used as a quick snack. The addition of carrot extract into donuts will increase its nutritional value [9].

4. Conclusion

The increase of awareness of the benefits of vegetables and fruits to preschool children among participants could be seen by the increment in the mean value from the pretest compared to the posttest, which is 6.2 from the pretest, to 8.27 from the posttest. There was an increase of 2.07 points. The improvement in skills on processing doughnuts with the addition of vegetables and fruits extract could be seen from the participants successfully making doughnuts with the addition of vegetables and fruits independently at each home.

REFERENCES

- [1] Santoso and Ranti, A. L. *Kesehatan dan Gizi (Health and Nutrition)*. Jakarta: Rineka Cipta. 2009.
- [2] Y. Dewi. “Studi Deskriptif: Persepsi dan Perilaku Makan Buah dan Sayur pada Anak Obesitas dan Orang Tua”. [Descriptive Study: Perception and Consuming Vegetables and Fruits Behavior on Obesity children and Old People]. *Jurnal Ilmiah Mahasiswa Universitas Surabaya*. vol. 2, no. 1. 2013.
- [3] N.K.D. Purwita, I.K. Kencana, A.A.N. Kusumajaya. “Gambaran Konsumsi Sayur dan Buah Dengan Status Gizi Remaja di SMP Negeri 3 Abiansemal Kabupaten Badung”. [The Representation of Vegetables and Fruits Consumption Towards Nutritional Status of Teenagers at SMP Negeri 3 Abiansemal Badung Regency]. *Jurnal Ilmu Gizi : Journal of Nutrition Science*. vol. 7, no. 3, pp. 1-7. 2018.
- [4] Hermina. “Gambaran Konsumsi Sayur dan Buah Penduduk Indonesia Dalam Konteks Gizi Seimbang : Analisis Lanjut Survei Konsumsi Makanan Individu”. [The Representation of Vegetables and Fruits Consumption of Indonesians in Context of Balanced Nutrition : Individual Food Consumption Survey Analysis]. 2016.
- [5] A. N. Hasana. “Gambaran Perilaku Ibu dalam Penyediaan Sayur Keluarga di Kelurahan Pasir Bidang Kecamatan Sarudik Kabupaten Tapanuli Tengah”. [The Representation of

- Mother's Behavior in Providing Vegetables in Family in Pasir Bidang ward, Sarudik district, Middle Tapanuli Regency] [Essay]. Medan: Universitas Sumatera Utara. 2012.
- [6] H. Boeing, A. Bechthold, A. Bub, S. Ellinger, D. Haller, A. Kroke, E. Leschik-Bonnet, M.J. Muller, H. Oberrittler, M. Schulze, P. Stehle, B. Watcl. Critical Review : Vegetables and fruit in the prevention of chronic diseases. *Eur J Nutr.* vol. 51, no. 6, pp. 637-663. 2012.
- [7] Santoso. Teknologi Pengawetan Bahan Segar. [Fresh Ingredients Preservation Technology]. Faperta Uwiga Malang. 2006.
- [8] Statistics Indonesia. Harvested Area of Vegetables by Province and Kind of Plant, 2019. https://www.bps.go.id/indikator/indikator/view_data_pub/0000/api_pub/bXNVb1pmZndqUDhKWEIUSjhZRitidz09/da_05/2 (Accesses in 10 October 2021). 2021.
- [9] Munawwarah. "Analisis Kandungan Zat Gizi Donat Wortel (*Daucus Carota L.*) Sebagai Alternatif Perbaikan Gizi pada Masyarakat". [Carrot Doughnut Nutrient Substances Analysis as an Alternative to Nutrient Improvement for the General Public]. [Essay]. Makassar: Universitas Islam Negeri Alauddin Makassar. (2017).
- [10] F.P. Widjaya "Fortifikasi Protein Surimi Manyung terhadap Tingkat Kesukaan Donat". [Manyung's Surimi Protein Fortification Towards Doughnut Likeable Degree]. *Jurnal Perikanan Kelautan (Fishery and Marine Journal)*. vol. 6. no.2. pp. 15-22. 2015.
- [11] L. Mubasyiroh, Z.C. Aya. "Hubungan Perilaku Ibu Dalam Pemenuhan Gizi Pada Anak 1000 Hari Pertama Kehidupan/ Golden Period Dengan Status Gizi Balita di Desa Sitanggal Kecamatan Larangan Kabupaten Brebes Tahun 2018". [Relationship of mother behaviour in the fulfillment of nutrition in the first 1000 days of life/golden period with nutritional status in Sitanggal Village, Laran District, Brebes Regency in 2018]. *Jurnal Ilmu Kesehatan Bhakti Husada: Health Sciences Journal*, vol. 9, no. 1, pp. 18–27. 2018.
- [12] H.P. Prasasti. "Pengaruh kebiasaan makan keluarga terhadap status gizi anak di SDN Babak Sari Kecamatan Dukun Kabupaten Gresik (Studi Kasus)". [The influence of family eating habits on the nutritional status of children at SDN Babak Sari, Dukun District, Gresik Regency (Case Study)]. *E-Jurnal Tata Boga*. vol. 8, no. 1, pp. 119-125. 2019
- [13] I.D.N. Supariasa, B. Bachri, I. Fajar. Penilaian Status Gizi [Nutritional Status Assessment]. EGC Jakarta. 2016.