

Socialization and Education on the Utilization of Vitamins in the Bogor Court Public Elementary School Environment

¹Oktaviana Zunnita, ²Eka Herlina, ³Muhamad Jakaria, ⁴Devi Kurniasari

^{1,3}Pharmacy Study Program, Faculty of Mathematics and Natural Sciences, Pakuan University, Bogor

^{2,4}Chemistry Study Program, Faculty of Mathematics and Natural Sciences, Pakuan University, Bogor

Email: oktaviana.zunnita@unpak.ac.id

Abstract: Vitamins are complex compounds that are needed in small amounts by the body. Vitamins function to help regulate or process body activities. without vitamins the body will experience health problems. Considering the great benefits of vitamins, the Indonesian Ministry of Health issued '10 Balanced Nutrition Guidelines' through the Healthy Living Community Movement (GERMAS). By implementing these guidelines, it is hoped that the community, especially school-age children, will have a stronger immune system, in order to avoid a number of diseases. Vitamin A is always given in February and August at an early age. Vitamin A/retinol is involved in the formation, production, and growth of red blood cells, and lymphocyte cells During the pandemic, for the prevention and cure of diseases caused by the covid 19 virus, vitamins C, D and E have a role in therapeutic management. Therefore, it is necessary to introduce the benefits of vitamins starting at elementary school age, by providing socialization and education to parents, teachers and school committees. Socialization and education of the benefits of vitamins in the environment of SD Negeri Pengadilan Bogor, conducted online, as well as visits to Pakuan Farma Pharmacy. Parents, teachers and school committee were given education about giving vitamins according to the daily dose, types of water and fat soluble vitamins, in the form of materials and leaflets. In addition, the material provided is about how to dispose of unused vitamins and the vitamin content contained in fruits and vegetables. The results of the PKM showed an increase in knowledge about the benefits of vitamins. It can be concluded that adequate consumption of vitamins and diverse foods with balanced nutrition can increase the potential for achievement in oneself which plays an important role in child development, namely smart, creative, outgoing, independent and confident.

Keywords: vitamins; school-age; benefits; education

1. INTRODUCTION

Parents have an important role in the diet consumed by children. The best sources of vitamins and minerals come from fruits and vegetables. Children's eating behavior is influenced by the availability of fruits and vegetables at home. (Kemenkes, 2018) To improve children's knowledge and behavior in consuming vegetables and fruit, it is necessary to provide health education to school-age children. Get used to children consuming a variety of staple foods, so that children get complete nutrition from a variety of foods. Fruits and vegetables as a source of vitamins and vitamin supplements to increase endurance and health. (Permenkes, 2014) Implementing a healthy daily life, it is hoped that the community, especially school-age children, will have a stronger immune system to avoid a number of diseases. The growth and development of children are

influenced by several factors, such as genetic factors, environmental factors, nutritional factors, and other factors (Edelman and Mandle, 2010).

The results of the National Socio-Economic Survey (SUSENAS 2014) found that 83.64% of school-age children in Indonesia did not consume enough vegetables, because children often experience a phase where it is difficult to eat, especially eating vegetables. Vegetables and fruit are one of the nutritional needs that are rarely liked and often ignored by school-age children, they tend to prefer food that is attractive and tasty but does not have good nutritional quality. Based on the situation analysis above, the problems experienced by partners can be formulated as follows:

- a) The Court's Public Elementary School (SDN) is located close to the economic center of Bogor City, namely Pasar Anyar, so that a variety of foods can easily be found around the Bogor City Court's Public Elementary School.
- b) So far parents, students, teachers, and the surrounding community still do not know about the function of vitamins, especially for supplements, which are needed by the body in small quantities and the body cannot produce these vitamins on its own.
- c) Sometimes some school-age children don't like to eat fruits and vegetables, even though these foods are good sources of vitamins and minerals.

Children, especially school-aged children, are active individuals and like group interactions with their peers. Health education with the right method will be able to attract children's attention and later be able to become a facility for children to learn about the behavior of consuming healthy food with a balanced menu. Health education using the Think Pair Share (TPS) method is suitable for school-age children because children will try to think, respond to each other, and help in discussions. TPS is a health education method that can increase the attractiveness of school-age children. The TPS cooperative learning model is a learning method that has the goal that school-age children go through the process and are able to think, discuss in pairs, and share knowledge to solve and learn a topic in the form of group collaboration.

The purpose of this Community Service is to increase understanding regarding the selection of safe and healthy snacks for consumption by the body and the importance of consuming vitamins for children. This

program aims to increase knowledge about various types of vitamins, recommended vitamin dosages, comparison of fruit and vegetable consumption with packaged vitamins, and how to store and dispose of drugs/vitamins in the form of syrup or tablets that have expired or are no longer used.

The objects of counseling are elementary school (SD) students, parents, school committees, and teachers. Children's bodies still need appropriate vitamins because they are still in their infancy. One example of research conducted by Maulida and Pramono (2015) showed that 8 out of 40 research subjects in children aged 9 to 12 years were included in the wasting nutrition category and 60% of the study subjects had insufficient vitamin A intake.

Activities are carried out by providing education, pharmacy visits, leaflets to teachers and parents of students, school committees about the benefits of vitamins and introducing water- and fat-soluble vitamins, side effects when vitamins are used inappropriately, storing and disposing of vitamins that cannot be used again. Much knowledge about the benefits of vitamins for preventing disease and increasing endurance will increase the potential for achievement in oneself which plays an important role for optimal growth and development of children, namely creative intelligence, growing tall and strong, sociable, independent, and confident. (Kasdu,2014)

2. METHOD

Community service is carried out in 2 stages, stage 1 of socialization and education through zoom meetings, because it is still in the PPKM situation. Socialization and educational material in the form of presentations on the benefits of vitamins and types of vitamins that are water and fat-soluble, vitamins needed by the body to fight viruses, especially the ncov coronavirus in accordance with the Handbook for Handling COVID-19 3rd Edition 2020 as well as storage, disposal unused vitamins Zoom meeting participants are teachers, The school committee and parents.

Stage 2, Education is conducted at the Pakuan Farma pharmacy. A visit to the Pakuan Farma pharmacy, to introduce vitamins in packaged form and provide knowledge on comparisons of consumption of fruit or vegetables that are comparable to doses of vitamins from existing research. This was followed by a discussion and distribution of leaflets about vitamins to increase partners' knowledge.

3. RESULT AND DISCUSSION

Community Service is one of the Higher Education Tridharma activities. This activity was carried out to introduce vitamins and their benefits to the school environment. Vitamins are nutrients that the body needs to carry out its normal functions. Based on its function, vitamins indirectly are substances that play a direct role as a regulator of various nutrients that have been consumed by the body. Even though it is needed in small amounts, vitamin deficiency can cause organ function disorders to developmental problems. During a pandemic, vitamins are needed to maintain the body's immunity. In preventing and treating diseases caused by the covid 19 virus, vitamins C, D, and E have a role in managing therapy. (Indriyanti,2020; Istiyanto,2021)

This activity was carried out in 2 stages. In stage 1, a zoom meeting was held with the material "Socialization and Education on the Utilization of Vitamins in the Bogor Court Public Elementary School Environment".

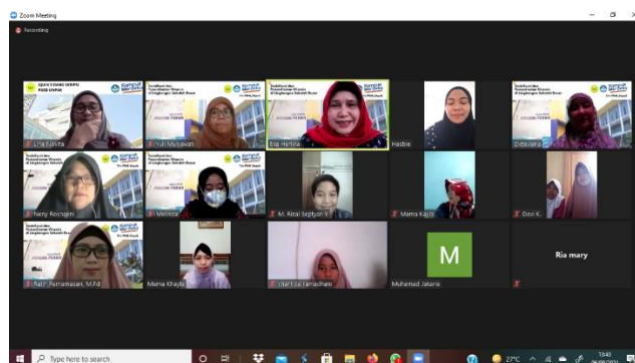


Figure 1. Zoom meeting Activity

The activity begins with a pretest, to find out whether there is an increase in knowledge of educational material. In the presentation, it was explained that vitamins have 2 major groups, namely water-soluble vitamins and fat-soluble vitamins. (Furkom,2014) Sources of vitamins in daily consumption are obtained from fruit and vegetables. If the consumption of vegetables and fruit in children is difficult, vitamins that have been packaged in the form of syrup, tablets or chewable tablets can be assisted. Some of the questions that arose during the debriefing with participants were:

- a. Can vitamins cause a child's appetite to increase?
- b. How many doses of vitamins D and C are good for daily consumption?

There is no clinical evidence yet that vitamins can cause a child's appetite to increase, but with vitamins the body's metabolism will return to normal, and children will carry out their activities with enthusiasm so that their appetite will return to normal. The next question is about a good dose of vitamins to consume. Consumption of vitamins according to the age of the child. At school age, you need 50 mg of vitamin C per day and 15 mcg of vitamin D. (Kemenkes 2022).

In the first stage, the activity ended with a question and answer session and a posttest. There are 10 questions about vitamins and their benefits that must be answered by zoom meeting participants. From the results obtained, it can be seen that the knowledge of the participants increased, as shown in Figure 2.

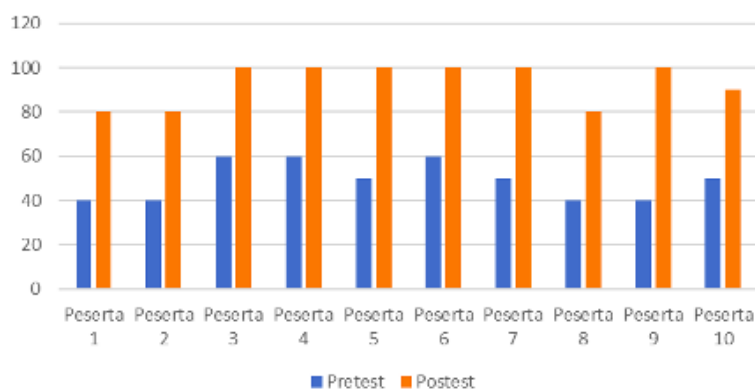


Figure 2. Graph of increasing the benefits of vitamins before and after socialization

From the picture above it can be seen that with socialization and education, the participants' knowledge about the benefits of vitamins consisting of teachers, parents, and school committees has increased. Partner's contribution in the implementation of PKM is quite good.

Implementation of counseling about vitamins and their benefits for the body is very appropriate to add insight from teachers, parents, and school committees. Knowledge about the consumption of vitamins is important because children are the biggest consumers who consume vitamins. Children's bodies still need appropriate vitamins because they are still in their infancy. One example of research conducted by Maulida and Pramono (2015) showed that 8 out of 40 research subjects in children aged 9 to 12 years were included in the wasting nutrition category and 60% of the study subjects had insufficient vitamin A intake. A person's eating pattern begins to form early in life and tends to last into adulthood (Chitra and Reddy 2006).

In stage 2, visits to pharmacies were made, participants were introduced to several types of vitamins in the form of syrup, tablets, and chewable tablets. On this occasion, the participants were given education in the form of leaflets which included sources of vitamins from food, daily doses of vitamins needed, and how to store and dispose of vitamins that were not used and had expired.



Figure 3. Discussion forum for visits to Pakuan Farma Pharmacy

Educational media in the form of leaflets, leaflets are used as simple and concise learning media. The simple design means that participants don't need much time to read it. (Rahayu,2020)

Vitamin A, D, E, dan K merupakan vitamin larut lemak yang dikonsumsi secara berlebihan, akan menumpuk di dalam jaringan tubuh sehingga menjadi racun. Hindari konsumsi suplemen vitamin, terutama vitamin A, D, E, dan K, dalam dosis tinggi, karena dapat memicu terjadinya masalah kesehatan yang disebut

Vitamin yang larut dalam air adalah B dan C. Kelebihan vitamin yang larut dalam air dikeluarkan melalui urin dan keringat. Ada 9 vitamin yang larut dalam air. Ke-9 vitamin tersebut Vitamin B1 Vitamin B2 Vitamin B3 Vitamin B5 Vitamin B6 Vitamin B7 Vitamin B9 Vitamin B12 Vitamin C

Jenis vitamin ini didapatkan di dalam sayuran hijau, telur, susu, mentega, ikan sarden, ikan tuna, minyak nabati, dan beberapa makanan lainnya.

Jenis dan manfaat vitamin
Abdimas Prodi Farmasi – Kemia
Fakultas Matematika dan Ilmu Pengetahuan Alam
November 2021
Ketua : apt. Oktaviana Zuninta, M.Farm
Anggota: Dra. Sita Winda, M.Pd
Mohamad Jakarta
Devil Kumbasari

Bayi dan Anak 0 bulan – 9 tahun

| | 0-6 bulan | 6-11 bulan | 1-3 tahun | 4-6 tahun | 7-9 tahun |
|--------------|-----------|------------|-----------|-----------|-----------|
| Vit A (RE) | 375 | 400 | 400 | 450 | 500 |
| Vit B1 (mg) | 0,2 | 0,3 | 0,5 | 0,6 | 0,9 |
| Vit B2 (mg) | 0,3 | 0,4 | 0,5 | 0,6 | 0,9 |
| Vit B3 (mg) | 2 | 4 | 6 | 8 | 10 |
| Vit B5 (mg) | 1,7 | 1,8 | 2 | 3 | 4 |
| Vit B6 (mg) | 0,1 | 0,3 | 0,5 | 0,6 | 1 |
| Biotin (mg) | 5 | 6 | 8 | 12 | 12 |
| Folat (mg) | 80 | 80 | 160 | 200 | 300 |
| Vit B12 (mg) | 0,4 | 1,5 | 1,5 | 1,5 | 2 |
| Vit C (mg) | 40 | 50 | 40 | 45 | 45 |

Perempuan > 10 tahun

| | 10 tahun | 11 tahun | 12 tahun | 13 tahun | 14 tahun | 15 tahun | 16 tahun | 17 tahun | 18 tahun |
|--------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Vit A (RE) | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| Vit B1 (mg) | 1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 |
| Vit B2 (mg) | 1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 |
| Vit B3 (mg) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Vit B5 (mg) | 1,7 | 1,7 | 1,7 | 1,7 | 1,7 | 1,7 | 1,7 | 1,7 | 1,7 |
| Vit B6 (mg) | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 |
| Vit B12 (mg) | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 |
| Vit C (mg) | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |

*1 mg = 1 RE (Retinol Equivalents)

Laki-laki > 10 tahun

| | 10 tahun | 11 tahun | 12 tahun | 13 tahun | 14 tahun | 15 tahun | 16 tahun | 17 tahun | 18 tahun |
|--------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Vit A (RE) | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| Vit B1 (mg) | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 |
| Vit B2 (mg) | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 |
| Vit B3 (mg) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Vit B5 (mg) | 1,7 | 1,7 | 1,7 | 1,7 | 1,7 | 1,7 | 1,7 | 1,7 | 1,7 |
| Vit B6 (mg) | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 |
| Vit B12 (mg) | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 | 1,1 |
| Vit C (mg) | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |

Figure 4. Leaflet types and benefits of vitamins that the body needs

The information presented in the leaflet is a source of vitamins from various foods and the daily dose of vitamins needed by the body according to age. (PMK, 2019) At the end of the visit, a question and answer session was held for the participants. The question posed by the participants was how to dispose of expired

vitamins. Expired vitamins at home must be immediately disposed of or destroyed, in a manner according to the form of Vitamin packaging. Vitamins with syrup packaging are disposed of by pouring the drug in running water, and the drug label on the package is removed, then the bottle is discarded. (Nurike, 2021; Kemenkes, 2022) Vitamins packed with chewable tablets or tablets are disposed of by removing the tablets or chewable tablets from the packaging and then crushing them or soaking them in water until dissolved, then discarding them in running water.

4. CONCLUSION

Vitamins have 2 major groups, namely water-soluble vitamins and fat-soluble vitamins. Sources of vitamins in daily consumption are obtained from fruit and vegetables. If the consumption of vegetables and fruit in children is difficult, vitamins that have been packaged in the form of syrup, tablets or chewable tablets can be assisted. The use of vitamins should be used according to age requirements. Based on its function, vitamins indirectly are substances that play a direct role as a regulator of various nutrients that have been consumed by the body. Even though it is needed in small amounts, vitamin deficiency can cause organ function disorders to developmental problems. Much knowledge about the benefits of vitamins for preventing disease and increasing endurance will increase the potential for achievement in oneself which plays an important role for optimal growth and development of children, namely creative intelligence, growing tall and strong, sociable, independent, and confident.

ACKNOWLEDGMENT

We would like to thank LPPM Pakuan University and the Courts Public Elementary School (Cooperation Partners) so that the "Socialization and Education on the Utilization of Vitamins in the Bogor Courts Public Elementary School Environment" was carried out well.

REFERENCES

Agusbaha. (2019). Berbagai Macam Vitamin Beserta Manfaat Bagi Tubuh, Stikes Surabaya

- Chitra, U., & Reddy, C. R. (2006). The role of breakfast in nutrient intake of urban school children. *Public Health of Nutrition*, 10(1), 55-58. doi:10.1017/S1368980007219640
- Edelman, C. L., & Mandle, C. L. (2010). *Health promotion through the lifespan*. (6th ed.). St. Louis: Mosby Inc
- Furkon, LA.,(2014). *Ilmu Kesehatan dan Gizi Tangerang Selatan : Universitas Terbuka Kesehatan*
- Istyanto,F., Maghfiroh,A. (2021). Peran Mikronutrisi Sebagai Upaya Dalam Pencegahan Covid-19 *Jurnal Ilmiah Permas: Jurnal Ilmiah STIKES Kendal Volume 11 Nomor 1, Januari 2021*.
- Indriyanti, A., Andrienne,Y. (2020). *COVID-19 dan Alternatif Penggunaan Vitamin dan Herbal*. Pusat Penerbitan Unisba (P2U) LPPM UNISBA.
- Kementrian Kesehatan. (2018). *Sayuran Sebagai Sumber Vitamin dan Mineral untuk Kesehatan Tubuh Manusia*
- Kasdu, D.(2004).*Anak Cerdas , Puspa Swara*, 81-101
- Kementrian Kesehatan Direktorat Promosi Kesehatan dan Pemberdayaan Masyarakat. (2022). *Manfaat berbagai vitamin bagi daya tahan tubuh selama pandemic*
- Kementrian Kesehatan Direktorat Jenderal Pelayanan Kesehatan. (2022). *Cara Pemusnahan Obat Yang Rusak/ Kadaluarsa di Rumah Tangga*
- Kementrian Kesehatan RI. (2013). *Riset Kesehatan Dasar*
- Maulida, A., & Pramono, A. (2015). Gambaran Asupan Vitamin A, Kadar Serum Seng, dan Status Gizi pada Anak Usia 9-12 tahun, *Journal of Nutrition College*, 4(2): 323-328
- Nurike,S. (2021). 8 Cara memusnahkan obat kadaluarsa atau rusak, *Majalah Farmasetika*
- Peraturan Menteri Kesehatan RI. (2014). *Pedoman Gizi Seimbang*. No.14
- Perhimpunan Dokter Paru Indonesia. (2020). *Pedoman TatalaksanaTerapi Covid-19 Edisi 3*
- Peraturan Menteri Kesehatan RI. (2019). *Tentang Angka Kecukupan Gizi Yang Dianjurkan Untuk Masyarakat Indonesia*, Nomor 28
- Rahayu, A., Fahrini,Y., Setiawan,M.I. (2020). *Buku Ajar Dasar Dasar Gizi*, CV.Mine, 66-119.