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WEBSITE IOCNS FOR INCREASING PARENT'S KNOWLEDGE ABOUT NUTRIENTS OF CHILDREN

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ABSTRACT
The world is currently facing a double burden of child nutrition problems. Prevention of imbal-anced nutrition in school age chil-dren can be achieved through changes in children's behavior such as consuming balanced nutrition intake, increasing appropriate physical activity and reducing con-sumption of unhealthy snacks. However, not only children but also parents don't know whether their children are risk of nutrition imbalance from various un-healthy behaviors. Objective: The aim of this research was to know the effect of Web-site Information of Children's Nutritional Sta-tus for increasing par-ent's knowledge. Method: This research was quantitative research which used pre-experimental with one group pre and posttest design. The re-spondent was 20 parents of the students in elementary school. The data was collected by using questioner after conducting in-tervention using website. Results: The statistic result with Wilcoxon test showed im-proving par-ent's knowledge with the result p=0,001. Conclusions: Using media education based on digital such as the website has an impact on increasing parental knowledge of child nutrition.

Keywords: children; knowledge; parent; website

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INTRODUCTION

The world is currently facing a double burden of child nutrition problems, which include nutrition deficiencies such as malnutrition and stunting and excess calories such as overweight and obesity. Both of these nutrition problems will have a negative impact on children in the future. Obesity is a nutritional problem encountered by almost all countries in the world. Obesity in chil-dren continues to increase. Based on the results of basic health research in 2018, it's known that both children and adults have increased up to 31%. The increase in obesity among children is also increasing years by years. In 2010 it was 1.4% of children with obesity and then increased to 7.3% in 2013 and for the whole age group in 2018 it increased from 18.8% to 31%. In contrast, one of the other nutrition problems is stunting which is a short body condition in children under 5 years age due to malnutrition. Malnutrition becomes apparent after the child is 2 years old, but it can happen since the fetus in the womb and in the early period after birth (Rahayu & Khairiyati, 2014).

Prevention of imbalanced nutrition in school age children can be achieved through changes in children's behavior such as consuming balanced nutrition intake, increasing appropriate physical activity and reducing consumption of unhealthy snacks. However, not only children but also parents don't know whether their children are risk of nutrition imbalance from various unhealthy behav-iors. Some parents don't have motivation to seek the right information or provide optimal attention, especially on nutrition issues. An individual's level of nutrition knowledge influences attitudes to-ward food selection. A mother who has insufficient nutrition knowledge and attitudes will greatly affect the nutrition status of their children and will be difficult to choose nutritious foods for her child (Rizona et al., 2016).

Health education aims to provide information that can change mindsets and develop a sense of responsibility to maintain their health, raise an awareness that health is something valuable in life so they can behave and act according to health norms. Health education provides information to increase knowledge and stimulate self-awareness to maintain and improve health (Nurmala et al., 2018). In response to this, the utilization of information and communication technology can be ap-plied to create learning media with internet access that allows users to save money for repeat les-sons, to have control over time and place, and to understand the learning path as well (Khoury et al., 2011). Using electronic web-based learning media is economical for students who use it, and they can do other useful activities in their spare time (Aparicio et al., 2016).

One of the educational media that can be utilized along with current technological develop-ment is through the website. A website that contains information about the nutrition status of school age children and can record the reporting of children nutrition status by parents and teachers will be developed in this research. The method that will be utilized is an educational method with website media that will be named IoCNS (Information of Children's Nutritional Status). Topics de-veloped through this website will be based on guidelines from the Ministry of Health, starting from determining the nutrition status of children to providing proper nutrition according to age of the child. Parents are expected be able get access to information on the website through smartphones or personal computers without installing the application first. Based on this background, researchers are interested in developing learning media through websites in optimizing efforts to increase the knowledge of parents and teachers in fulfillment of balanced nutrition for school age children in Palembang. Based on data collected from the latest Palembang City Health Profile, the incidence of obesi-ty has increased and the achievement of obesity reduction is still outside the target (Dinas Kesehatan Kota Palembang, 2021). Meanwhile, for stunting cases, data on the prevalence of stunt-ing toddlers in Palembang City was obtained for the highest number based on the recap of PPGBM (Community-Based Nutrition Recording and Reporting) data for toddlers at the Taman Bacaan Health Center in 2020 in the Tangga Takat village, which amounted to 148 children experiencing stunting.

The results of the field study found that there are parents who still do not understand the indi-cators of determining the nutritional status of children who are undernourished, obese or stunted. They also do not know how nutritional intake is appropriate for the age of the child so that it does not result in providing less or too much nutrition. Parents expressed the need for information that can be accessed anywhere. In addition, schools also need media that can more effectively store data on children's nutritional status, including starting with their understanding of how to determine children's nutritional status.The purpose of this research

was to know the effect of Website Information of Children's Nu-tritional Status for increasing parent's knowledge.

METHOD

This study was quantitative research which used pre-experimental with one group pre posttest design. The respondent was 20 parents of the students in elementary school. The data collected by using questioner after conducting intervention using website. Respondent were parent of student from elementary schools in Ilir barat Distiric Palembang City. Sample election used purposive sampling. The variable of this research was a parent's knowledge about nutrition on children. The respondent using website which has delevoped by researcher to get the information about nutrition of children. Data collected by using questioner. Questioner was using on pretest and posttest after reading the information based on website about 3 days. For analysing the univariate data, descriptive com-putation the data from the children about characteristic was reporting on gender and aged of re-spondent. The bivariate analyzed was using pre-experiment with one group pre-posttest design. It was used to analyze the data on parent's knowledge. The statistic result with Wilcoxon test. The research protocol for the study have approved by the Regional Ethics Committee for re-search with human subjects at Health research review committee, Faculty of Medicine, Sriwijaya University, Indonesia with protocol number 109-2023.

RESULTS

The data of respondent's characteristics are presented in Table 1. The majority of data population (95%) is a woman. The majority of the respondents are abouy 20-40 years old (85%).

Table 1.
Characteristic of respondent

Characteristic	f	%
Gender		
Man	2	5
Woman	38	95
Age (Years)		
20-40	34	85
40-60	6	15

The knowledge of parents mean value of the respondent is showed in Table 2. The analysis of data was using Wilcoxon test. The table showed the mean number of knowledge of parents after intervention was increased from 16.5 to 22.4. The p value number in this study was 0.001 which presented that there was a value differences after conducting the intervention using Website IoCNS (information of children Nutritional Status).

Table 2.
The parent's knowledge before and after intervention

	Mean	Min	Max	Ties	Positive ranks	*p*
Pre Test	16.5	6	20	0	20	0.001
Post Test	22.4	20	25			

DISCUSSION

According to our analysis, the mayority of respondent was woman and the aged abot 20-40 years old. This is in line with research showing that the average age of mothers with school-age children is between 20 and 40 years old (Hidayati et al., 2022). There were an increasing

mean number of parent's knowledge and the increasing the minimun and maximum number afre the in-tervention. This analysis data using Wilcoxon test found the p value 0.001 that was an effect of in-tervention using website. The research on nutrition of children shows the difference between pre-intervention and post-intervention. It offers an increase in parent's knowledge about the nutritional status of their children after intervention through the IoCNS (Information of Children's Nutritional Status) website. The use of digital media in health counselling can be done effectively and effi-ciently to increase mothers' knowledge about children's health such as stunting prevention (Fajarnita & Herlitawati, 2023). The results of this study are consistent with those of earlier study. The research used powtoon website-based learning media to educate balanced nutrition in adolescents. As a result, there is a significant difference in knowledge of balanced nutrition before and after the intervention ($p = 0.000$) (Jihad et al., 2023). Another study addressed the effect of nutrition education through the web-based "Actzi" on mothers' knowledge of toddlers. The results of this study indicate that, based on the output test the value is $0.000 < 0.05$. It means there is a significant difference in the level of the mother's knowledge before and after the intervention (Munawwaroh et al., 2022).

Increasing development of information and communication technology has an impact on all fields, including health sector. Development changes that lead to digital technology make health information data delivered according to consumer needs with new and more convenient services. Nowadays, individuals frequently utilize digital media to search for information on the internet due to its quick and simple accessibility (Salim et al., 2021). The development of technology and in-formation in the form of online sites that utilise the internet has now grown rapidly, one of which is in the field of education. In the field of education, technological developments are utilised to sup-port operational activities in the delivery of information. The utilisation of technology and infor-mation in the form of online sites in the field of education has the aim of meeting the needs of technology users (Hendrawati et al., 2021)

Through the website, parents can access the information they want anytime and anywhere. When mothers want to know the content of food that will be served to their children, mothers can access the website that has been provided by the researcher. A mother's level of digital literacy skills can influence their daily behaviour. Furthermore, the finding of information dissemination elements in mothers' digital literacy practices adds to the richness of the concept of literacy itself (Jati, 2021). Based on data from the Indonesian Internet User Association, the number of internet users in Indonesia in 2018 was 171.17 million users or 64.8% of the total population. There is in-creasing interest in the use and access of digital health service applications, especially the policy direction of the Ministry of Health's 2020-2024 RPJMN to support innovation and the use of tech-nology for essential health services (Munawwaroh et al., 2022).

A Website media as a growing health promotion has a positive value in providing infor-mation. A website is a collection of web pages that contain data that is kept online and may be ac-cessed or viewed via an internet connection on computers and other devices that have access to the internet. Using a website will facilitate the introduction, dissemination, and promotion of infor-mation itself. Moreover, making a website-based applications is faster and cheaper, and also access for users will be easier because it doesn't require a large memory for storage (Sari et al., 2023). A study showed that the majority of the literature used questionnaire instruments, both online and of-fline, to assess the increase in knowledge before and after the intervention. The results show that the use of online media has proven to be

effective as a means of health promotion education, espe-cially in improving knowledge, attitudes and providing support for healthy behaviour for adoles-cents (Sembada et al., 2022)

The nutritional status of children may be affected not only by internal factors such as the quantity of food that they consume but also by external factors, most notably the nutritional knowledge of the parents who are the primary players in the process of providing food for their children. Parents are the ones who have the strength to create feeding strategies for feeding chil-dren and controlling their habits of children. This is because parents are the ones who can create these strategies (Almulla et al., 2023). Malnutition in children will occur if parents do not have good nutritional knowledge and do not feed children properly, even if they improve adequate food intake, effective hygiene, and adequate health care (Phyo et al., 2021). The role of parents towards the fulfilment of balanced nutrition as an effort to prevent stunting in children aged 4-5 years as educators, organizers and facilitators by providing education on the fulfilment of balanced nutrition while at home, compiling a varied menu, selecting good quality food ingredients, processing the right food ingredients, serving attractive dishes, and monitoring growth and development by regu-larly coming to the posyandu (Munawaroh et al., 2022). Peran orang tua sangat dibutuhkan dalam membantu optimalisasi peningkatan status gizi anak melalui asupan gizi yang sesuai.

One strategy for raising awareness and encouraging positive behavior change is nutrition edu-cation. Furthermore, in most poor nations, inadequate parental education regarding food choices, feeding techniques, and healthcare procedures has a substantial impact on the results of improving children's nutritional status. Parents knowledge of food choices, feeding, and health care seeking are vital for producing good nutrition outcomes for children (Fadare et al., 2019). A study shows that there ware a relationship between parents' knowledge and attitudes about stunting and patterns of child nutrition (Budianto & Akbar, 2023). It is anticipated that parents with good understanding will alter when feeding nutrient-dense food that complies with key components of maximizing infant development. To prevent food con-tamination, nutrition needs to be diversified, nutrient-dense, clean, and hygienic. Children require greater care, particularly with regard to adequate nourishment. In order to meet the children's nutri-tional needs during this time, it is crucial that they follow the right nutritional pattern. Children in good health will develop into active school-age individuals who are also happy, intelligent, and healthy. Thus, healthy school age children will grow up to be young teenagers full of hope, ready to gain knowledge for the Future (Aprilina et al., 2021). Healthy and nutritionally balanced food should be a concern because not getting healthy food will have a negative impact on children (Widaryanti, 2022).

Strengthening the health knowledge and competencies of parents may contribute to improved child outcomes particularly in the areas of nutrition (De Buhr & Tannen, 2020). Parents are key to succeeding in making child nutrition patterns healthy and maintaining a healthy weight among children because it is parents who serve food to their children during childhood (Phyo et al., 2021). Digital nutrition promotion interventions targeting parents can be effective for improving nutrition related outcomes in children and parents. Nutrition promotion interventions where parents are the primary change agents are effective (Zarnowiecki et al., 2020). A study concluded that there were positive potential for technology-based learning media and that it is important to design and im-plement effective strategies to ensure that technology is optimally utilised in educational contexts (Permana et al., 2024). The utilisation of digital media as an educational medium should be opti-mised by parents so that it can be useful, especially for children's health.

CONCLUSION

There was an increasing number of parent's knowledge after conducting intervention using Website about nutritional of children. Parent could use website as one alternative media for reach-ing the information about chhildre nutrient.

REFERENCES

Almulla, A. A., Alanazi, A. S., & Khasawneh, M. A. S. (2023). The Relationship between Nutritional Intake and Mother's Education Level with the Nutritional Status of Children with Special Needs. Journal for ReAttach Therapy and Developmental Diversities, 6(8s), 686–692. https://academicjournal.yarsi.ac.id/index.php/jmj/article/viewFile/3112/1315

Aparicio, M., Bacao, F., & Oliveira, T. (2016). An e-Learning Theoretical Framework An e-Learning Theoretical Framework. Educational Technology & Society, 19(1), 292–307.

Aprilina, H. D., Nurkhasanah, S., & Hisbulloh, L. (2021). Mother's nutritional knowledge and behavior to stunting prevalence among children under two years old: case-control. Bali Medical Journal, 10(3 Special Issue), 1211–1215. https://doi.org/10.15562/bmj.v10i3.2868

Budianto, Y., & Akbar, M. A. (2023). Hubungan Pengetahuan dan Sikap Ibu tentang Stunting dengan Pola Pemberian Nutrisi pada Balita. Jurnal Penelitian Perawat Profesional, 5(3), 1315–1320. https://doi.org/10.37287/jppp.v5i3.1726

De Buhr, E., & Tannen, A. (2020). Parental health literacy and health knowledge, behaviours and outcomes in children: A cross-sectional survey. BMC Public Health, 20(1), 1–9. https://doi.org/10.1186/s12889-020-08881-5

Dinas Kesehatan Kota Palembang. (2021). Profil Kesehatan Kota Palembang Tahun 2021. Dinas Kesehatan Kota Palembang, 21(3), i–iii.

Fadare, O., Amare, M., Mavrotas, G., Akerele, D., & Ogunniyi, A. (2019). Mother's nutrition-related knowledge and child nutrition outcomes: Empirical evidence from Nigeria. PLoS ONE, 14(2), 1–17. https://doi.org/10.1371/journal.pone.0212775

Fajarnita, A., & Herlitawati. (2023). Efektivitas Penyuluhan Kesehatan Melalui Media Digital Terhadap Pengetahuan Ibu Tentang Pencegahan Stunting. Jurnal Riset Rumpun Ilmu Kesehatan, 2(1), 187–197. https://doi.org/10.55606/jurrikes.v2i1.1008

Hendrawati, R., Ismanto, B., & Iriani, A. (2021). Pengembangan Website Bimbingan Belajar di Sekolah Dasar. Jurnal Basicedu, 5(3), 1401–1408. https://jbasic.org/index.php/basicedu/article/view/931

Hidayati, L. N., Pinilih, S. S., Amin, M. K., S1, M., Keperawatan, I., Magelang, F.-U. M., Fakultas, D., Kesehatan -Universitas, I., & Magelang, M. (2022). Gambaran Tingkat Stres Ibu Mendampingi Anak Study From Home (SFH) Di Masa Pandemi Covid-19. Seminar Nasional Keperawatan Universitas Muhammadiyah Surakarta (SEMNASKEP), 2022. https://publikasiilmiah.ums.ac.id/bitstream/handle/11617/12667/1-6.pdf?sequence=1

Jati, W. D. P. (2021). Literasi Digital Ibu Generasi Milenial terhadap Isu Kesehatan Anak dan Keluarga. Jurnal Komunikasi Global, 10(1), 1–23. https://doi.org/10.24815/jkg.v10i1.20091

Jihad, F., Putri, E. S., Duana, M., Ayunda, H. M., & Subhi, M. (2023). The Effect of Education Through Powtoon-Based Learning Media on Balanced Nutrition Knowledge in Adolescents. 4(1), 6–11. https://doi.org/10.35308/jns.v4i1.7339

Khoury, A. H., Eddeen, L. M. N., Saadeh, D. S., & Harfoushi, O. K. (2011). E-learning: Justifications and Obstacles. International Journal of Emerging Technologies in Learning, 6(3), 53–56. https://doi.org/10.3991/ijet.v6i3.1610

Munawaroh, H., Nada, N. K., Hasjiandito, A., Faisal, V. I. A., Heldanita, H., Anjarsari, I., & Fauziddin, M. (2022). Peranan Orang Tua Dalam Pemenuhan Gizi Seimbang Sebagai Upaya Pencegahan Stunting Pada Anak Usia 4-5 Tahun. Sentra Cendekia, 3(2), 47. https://doi.org/10.31331/sencenivet.v3i2.2149

Munawwaroh, M., Anantanyu, S., & Sumardiyono, S. (2022). The Effect of Nutrition Education through the Web-Based "Actzi" Application on the Level of Knowledge, Attitudes of Mothers, and Nutritional Status of Toddlers Aged 24-59 Months in Pasuruan District. Journal of Medical and Health Studies, 3(4), 80–88. https://doi.org/10.32996/jmhs.2022.3.4.12

Nurmala, I., Rahman, F., Nugroho, A., Erlyani, N., Laily, N., & Anhar, V. Y. (2018). Promosi Kesehatan. Penerbit Airlangga University Press.

Permana, B. S., Hazizah, L. A., & Herlambang, Y. T. (2024). Teknologi Pendidikan: Efektivitas Penggunaan Media Pembelajaran Berbasis Teknologi Di Era Digitalisasi. Khatulistiwa: Jurnal Pendidikan Dan Sosial Humaniora, 4(1), 19–28. https://doi.org/10.55606/khatulistiwa.v4i1.2702

Phyo, W. Y., Khin, O. K., & Aung, M. H. (2021). Mothers' Nutritional Knowledge, Self-efficacy, and Practice of Meal Preparation for School-age Children in Yangon, Myanmar. Makara Journal of Health Research, 25(1), 59–68. https://doi.org/10.7454/msk.v25i1.1262

Rahayu, A., & Khairiyati, L. (2014). Risiko Pendidikan Ibu Terhadap Kejadian Stunting Pada Anak 6-23 Bulan. Penelitian Gizi Dan Makanan (The Journal of Nutrition and Food Research), 37(2 Dec), 129–136. http://ejournal.litbang.depkes.go.id/index.php/pgm/article/view/4016

Rizona, F., Susetyowati, S., & Lusmilasari, L. (2016). Mother's feeding behaviours on overweight toddler. International Journal of Community Medicine and Public Health, June, 831–836. https://doi.org/10.18203/2394-6040.ijcmph20160912

Salim, M., Utami, F. A., & Bramantyo, H. (2021). Digital Media-Based Nutrition Health Communication Model. Proceeding of the 3rd Jogjakarta Communication Conference (JCC, 2021), 1(1), 596(Jcc), 247–251. https://www.researchgate.net/publication/356831088

Sari, L. K., Nugroho, C., & Dewi, T. K. (2023). Website-based Dental Health Promotion on Night Tooth Brushing Patterns in Junior High School Students. 1(1), 29–33. https://doi.org/10.36082/jchat.v1i1.997

Sembada, S. D., Pratomo, H., Fauziah, I., Amani, S. A., Nazhofah, Q., & Kurniawati, R. (2022). Pemanfaatan Media Online Sebagai Sarana Edukasi Kesehatan Pada Remaja : Tinjauan Literatur. PREPOTIF : Jurnal Kesehatan Masyarakat, 6(1), 564–574. https://doi.org/10.31004/prepotif.v6i1.3110

Widaryanti, R. (2022). Penurunan Masalah Gizi Pada Anak Usia Dini Melalui Edukasi PMT-AS. Dinamisia : Jurnal Pengabdian Kepada Masyarakat, 6(5), 1168–1173. https://doi.org/10.31849/dinamisia.v6i5.10762

Zarnowiecki, D., Mauch, C. E., Middleton, G., Matwiejczyk, L., Watson, W. L., Dibbs, J., Dessaix, A., & Golley, R. K. (2020). A systematic evaluation of digital nutrition promotion websites and apps for supporting parents to influence children's nutrition. International Journal of Behavioral Nutrition and Physical Activity, 17(1), 1–19. https://doi.org/10.1186/s12966-020-0915-1