

ASSISTANCE IN CREATING A NUTRITION STATUS DASHBOARD FOR DINAS KESEHATAN PROVINSI KALIMANTAN SELATAN

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Abstract

Indonesia continues to face nutritional problems that impact the lost generation. The prevalence of stunting, based on data from the Provincial Health Office of South Kalimantan, has decreased from 34.13% (2021) to 31.12% (2022). Similarly, the prevalence of underweight has also decreased from 24.3% (2021) to 22.1% (2022). If nutrition status data is not presented in real-time, it will result in slow handling of nutrition cases. Therefore, the community service team offered assistance in creating a nutrition status dashboard using Google Studio. The target audience for this activity was the staff and nutrition program managers at the Provincial Health Office of South Kalimantan. The community service method used was training and evaluation through pre and post-tests related to the assistance in creating the nutrition status dashboard. The results of both pre-test and post-test scores of the respondents did not follow a normal distribution due to the p-value being less than 0.05. Consequently, the Wilcoxon test was used, which showed a significant difference between the respondents' knowledge before and after receiving the material on creating a nutrition status dashboard at the Provincial Health Office of South Kalimantan.

Keywords: Dashboard, Google Studio, Nutrition Status

Introduction

Indonesia has experienced various significant events on its journey toward middle-income country status. However, it still faces nutritional issues that severely impact the quality of its human resources. Among the prevalent nutritional problems in Indonesia are stunting (short stature) and wasting (low weight) in toddlers, as well as anemia and chronic energy deficiency (CED) in pregnant women. If left unaddressed, these nutritional issues can escalate, potentially leading to a lost generation for Indonesia (1,2).

According to World Health Organization (WHO) data in 2020, globally, 462 million people were affected by malnutrition. The Global Nutrition Report indicates that Indonesia is among the 17 countries facing three simultaneous nutritional problems: stunting, wasting, and overweight. The Indonesian Nutritional Status Study (SSGI) reported a decrease in the prevalence of overweight from 3.8% in 2021 to 3.5% in 2022. However, the prevalence of underweight and wasting increased from 17.0% to 17.1% and from 7.1% to 7.7%, respectively, from 2021 to 2022. Meanwhile, the prevalence of stunting showed a decrease from 24.4% in 2021 to 21.6% in 2022 (3,4).

Data from the South Kalimantan Provincial Health Office show that the prevalence of malnutrition among pregnant women decreased from 1.19% in 2021 to 1.02% in 2022. The prevalence

of stunting decreased from 34.13% in 2021 to 31.12% in 2022, and the prevalence of underweight also declined from 24.3% in 2021 to 22.1% in 2022 (5).

WHO estimates that 40% of children aged 6-59 months, 37% (32 million) of pregnant women, and 30% of women aged 15-49 years worldwide suffer from anemia. Based on the 2018 Basic Health Research (Riskesdas), the percentage of pregnant women with anemia was 48.9%. In South Kalimantan, anemia among pregnant women decreased from 19.6% in 2021 to 16.49% in 2022 (5-7).

According to WHO, the incidence of Chronic Energy Deficiency (CED) among pregnant women globally ranges from 35-75%, with the highest incidence in the third trimester of pregnancy. In developing countries, 40% of maternal deaths are closely related to CED (Fazirah, dkk, 2022). At least 120 million women in South and Southeast Asia suffer from CED. Based on the 2018 Riskesdas data, 17.3% of pregnant women in Indonesia and 14.5% of non-pregnant women experienced CED. In South Kalimantan, the prevalence of CED among pregnant women decreased from 13.8% in 2021 to 12.6% in 2022 (6,9).

Nutritional problems in children are a significant issue in Indonesia. If the presentation of nutritional status data is not in real-time, it will impact the slow handling of cases, and quick and accurate decision-making, despite the numerous impacts of nutritional problems. These issues can significantly affect the long-term health and survival of children, as well as Indonesia's economic productivity and the country's ability to achieve its national and international development targets (10).

Observing the conditions of data utilization and processing of nutritional status that are not yet real-time by decision-makers at the South Kalimantan Provincial Health Office, this community service team offers assistance in creating a real-time updateable nutritional status dashboard using Google Studio and Google Spreadsheet. A dashboard can be a necessary visualization medium for presenting information and making decisions. It provides an interface displaying various forms such as charts, graphs, reports, visual indicators, and alert mechanisms, combined with dynamic and relevant information (11,12).

Google Studio is one of the tools that can be used to create dashboards. Its purpose is to help users create dynamic and visually appealing reports by channeling external data sources into a navigable platform to become various data-based reports. Google Studio allows users to connect to data sources, make calculations, create dashboards, and integrate with other components of the Google portfolio (13).

Method

The target of this community service activity is 10 people from the staff and nutrition program holders at the South Kalimantan Provincial Health Office. The approach method used is training and education related to assistance in creating a nutritional status dashboard. The participation of partners in this activity involves providing data to be processed for the dashboard creation. The steps of this community service activity are as follows (7):

1. Preparation

At this stage, the community service team coordinates with the community and the South Kalimantan Provincial Health Office. The team prepares the necessary equipment for training and education, such as nutritional status data from partners, posters, stationery, and interesting training materials. Additionally, the community service team collaborates with experts/lecturers from the fields of biostatistics and health (10).

2. Implementation

At this stage, the community service team presents material on assisting in the creation of a nutritional status dashboard for the South Kalimantan Provincial Health Office through several topics, including nutritional status issues in South Kalimantan, public health data management, dashboard and data analysis, and an introduction to Google Studio and Google Spreadsheet. Then, the staff and

nutrition program holders from the South Kalimantan Provincial Health Office are guided in creating the dashboard (10).

3. Evaluasi

At this stage, the community service team will conduct pre- and post-tests to assess the increase in knowledge and interest in the training and educational activities for the creation of the nutritional status dashboard (10).

Results

Table 1 Frequency Distribution of Respondent Characteristics

Gender	Frequency	Percentage (%)
Male	2	20
Female	8	80
Total	10	100

Source: Primary Data PDWA at the Provincial Health Office of South Kalimantan, 2023

Based on the table above, it is known that out of a total of 10 respondents, the majority were female, with 8 respondents (80%) being female and 2 respondents (20%) being male.

The knowledge and skills gained from this training can be continuously applied in daily work by providing the necessary support and resources for integration.

Table 2 Knowledge Results Before and After the Activity

Category	Pre-test(%)	n	Post-test(%)	n	p-value
Good	30	3	100	10	0,004*
Poor	70	7	0	0	
Total	100	10	100	10	

Source: Primary Data PDWA at the Provincial Health Office of South Kalimantan, 2023

Based on the table above, it is known that out of a total of 10 respondents, the number of respondents with good knowledge at pre-test was 3 respondents (30%), which increased to 10 respondents (100%) after the activity, and the number of respondents with poor knowledge initially was 7 respondents (70%), which decreased to 0 respondents (0%) after the activity.

Discuccion

The Wilcoxon test showed an average pre-test score of 64, indicating that students had fairly good knowledge about healthy living education, and an average post-test score of 97.6. Based on Table 2, it can be seen that most respondents had poor knowledge before (Pre-Test) receiving the material on creating a nutrition status dashboard, with 7 respondents (70%) having poor knowledge and 3 respondents (30%) having good knowledge. After (Post-Test) receiving the material, all 10 respondents (100%) had good knowledge. It is known that both the pre-test and post-test scores did not follow a normal distribution because the significance values were less than 0.05 (Sig. Pre-test = 0.004 < 0.05 and Sig. Post-test = 0.004 < 0.05). Therefore, the Wilcoxon test was used. Based on Table 2, it can be seen that the Sig. value (0.004) < 0.05, meaning H_0 is rejected, indicating a significant difference in respondents' knowledge before and after receiving the material on creating a nutrition status dashboard.

This activity was conducted once on July 21, 2023, in the Madonna Meeting Room at Favehotel Ahmad Yani Banjarmasin. The activity was attended by 10 participants from the Provincial Health

Office of South Kalimantan, consisting of Doctors, Nurses, Midwives, Nutritionists, Health Promotion staff, Surveillance staff, and Sanitarians.



Figure 1 Documentation of the Dashboard Creation Assistance Activity on July 21, 2023

The activity began with an opening and a speech by the head of the community service program as part of the mandatory service program for lecturers. The main activity of this community service was assisting in the creation of a dashboard, with presentations on issues of nutrition status in South Kalimantan, public health data management, dashboards and data analysis, and an introduction to Google Studio and Spreadsheets.



Figure 2 Presentation on Dashboard Creation

After the material presentation, a tutorial or practice session on dashboard creation was conducted with simulations by the community service team. The community service team involved in this activity already had a basic understanding of Spreadsheet and Google Studio applications. Participants first opened the Spreadsheet and Google Studio websites provided by the committee. Participants were then guided to enter the prepared nutrition status data into the spreadsheet and link the spreadsheet to Google Studio to facilitate dashboard creation. Participants created dashboards according to their own creativity.



Figure 3 Dashboard Creation Practice by Training Participants

The results of the analysis were then presented in the form of a dashboard using the Google Studio Application. To facilitate the participants in creating the dashboard, the committee prepared modules and dashboard creation materials accessible via a provided Google Drive link.

Training or workshop activities can directly increase knowledge and skills, although this knowledge and skills may not last long and will gradually degrade. The degradation of knowledge and skills will occur more quickly if they are not repeated or used (14). Therefore, the service team also included a dashboard creation module to help participants with self-study and to review the material learned during the training, ensuring that the knowledge and skills acquired do not degrade and remain with the participants.

Face-to-face training activities allow participants to better understand and master the material presented. Direct practice is a learning technique that provides hands-on experience to participants, engaging them actively in the practice, which helps them understand how to perform the tasks being practiced, thus gaining more concrete and clear experience. The activeness of the participants during the training depends on their self-motivation, as active participants tend to have higher knowledge scores compared to passive participants (7).

The community service activities conducted for the Provincial Health Office of South Kalimantan provided knowledge and skills to the health workers there on creating dashboards using spreadsheet and Google Studio applications. This service program was successfully implemented, with the dashboard creation material in the module being understood by the participants, the provided facilities being adequate, and the participants being able to use the spreadsheet and Google Studio applications.

Conclusion

The results of the analysis show a significant increase in participants' knowledge after attending the training, with the average post-test score reaching 97.6 compared to the pre-test score of 64. The Wilcoxon statistical test also indicated a significant difference between the participants' knowledge before and after the training. Overall, this training helped the Health Office in improving the competence of staff and nutrition program managers in managing data and the Nutrition Status Dashboard. Through this community service effort, it is hoped that the quality of nutrition information management will improve, promoting faster and more effective actions in addressing nutrition problems, and supporting the enhancement of the welfare of the people of South Kalimantan through well-targeted nutrition programs. The Provincial Health Office of South Kalimantan is expected to ensure the integration of the nutrition status dashboard into routine work activities.

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