

## Pupils' Nutritional Status and Their Academic Performance

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**ABSTRACT:** Nutrition is a fundamental pillar of human life, health, and development across the entire lifespan. This study was undertaken to identify the nutritional status of the pupils and their academic performance; to determine the level of pupils' nutritional status and academic performance before and after the implementation of SBFP; find the significant difference on pupils' nutritional status and academic performance before and after the implementation of SBFP. The study was conducted at Villanueva South District, Division of Misamis Oriental with one hundred nineteen (119) pupils/SBFP beneficiaries as actual respondents. The study employed a descriptive correlational research design with documentary analysis, which included a quantitative approach in collecting numerical data through a questionnaire. It also used frequency and percentage distribution, Mean and Standard Deviation and t-test. Results show that after the conduct of School Based Feeding Program (SBFP) the pupils' nutritional status reached at normal level while their academic performance reached at Very Satisfactory level. Significant difference was registered between before and after SBFP implementation data on nutritional status and academic performance. The study recommends that schools and the community may collaborate in providing training, awareness, and seminars that will enhance teachers' capacity and capability in implementing SBFP as well as on recording and monitoring data on nutritional status and academic performance.

**KEYWORDS:** academic performance, feeding program, nutritional status

### I. INTRODUCTION

Nutrition is an essential aspect of human life and plays a vital role in maintaining good health and wellbeing. Dietary habits are established in childhood and continue into adulthood, potentially influencing societal food choices and nutritional patterns over time. However, the nutritional status of pupils in recent years has become an issue of considerable concern. Malnutrition in every aspect poses major risks to human health. Currently, the world is grappling with a dual challenge of malnutrition, which includes both undernutrition and obesity, particularly in developing countries. UNICEF highlighted that it is a significant cause of death not only in children but in adults as well. In the Philippines, 30% of children below five years old suffer from impaired growth and development due to poor nutrition. It makes the country fifth in the East Asian and Pacific regions. With the current pandemic, worldwide malnutrition is expected to worsen (Kurtz et al., 2021).

In Villanueva South District, there are schools where elementary pupils are recorded to have below normal nutritional status which affect their performance inside the classroom. The teachers found it hard to resolve the problem due to a lack of resources and means. The parents are also hard to grasp and talk to especially in the present educational system. This issue needs to be addressed by school officials as well as teachers and parents. Promoting health and its importance are keys to improving pupils' scholastic achievement.

Proper nutrition is essential for human life, health, and development at every stage of life. Good nutrition is crucial for survival, physical growth, mental development, performance, health, and well-being from the early stages of fetal development to old age. Evidence has shown that physical growth and cognitive development in children are faster during the early years of life, and that by the age of 4 years, 50% of the adult intellectual capacity has been attained, and before 13 years, 92% of adult intellectual capacity is attained (Opoola, 2017).

Whereas any damage due to nutritional deficiencies during childhood may lead to impaired cognitive development and poor educational achievement of the children (Zerga et al., 2022). Thus, the effects of the nutrition deficiency have a big impact

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on their academic performance. They cannot cope with the lessons though they are physically present but mentally absent, and their hunger must not take place with their performance if they have eaten in the right time and nutritious food.

Moreover, the poor economic conditions lead to multiple burdens on the household members and their nutritional health. While poverty insists on the poor nutritional health of women and children. However, childhood poverty leads to poor physical and mental health (Zerga et al., 2022). In this case of poverty among the family's daily living, they keep on battling where to find food to eat. Somehow, their only source of income is farming or labor, and in the fact that they are many members of the family. Many children might go beyond the measure of malnutrition or in the worst case might drop down to mental issues or choose not to go to school and find a living on their own or will engage in early pregnancy. The Department of Education (DepEd) in collaboration with the Department of Health (DOH) is continuously implementing the School-Based Nutrition Program (SBFP). Its objectives are to combat hunger, improve nutritional status, enhance pupils' academic results and learning achievements, as well as boost cognitive abilities and academic success.

Moreover height, mid-upper arm circumference, weight, and skinfold thickness are important signs of nutritional status. Therefore, Body Mass Index (BMI) is used and one of the most suitable indicators to assess nutritional status. The World Health Organization (WHO) recommends various indicators based on anthropometric measurements such as height and weight, which are valuable indicators to determine children's nutritional condition. According to (Pradhan, 2020), BMI is the primary factor in determining nutritional status.

At the start of the school year, teachers must perform BMI measurements in their classrooms. The school nutrition coordinator, who is involved in the school-based nutrition program, tracks and categorizes the pupils' nutritional wellbeing. Hence, educators will administer BMI once more at the conclusion of the academic year, as the nutritional condition of pupils, particularly those benefiting from SBFP, has shown signs of improvement. Ongoing assessment and evaluation are crucial in determining the lasting effects of the school nutrition program on pupils' health and academic achievement.

Above-mentioned information help and identify not only the deficiencies in the pupils' nutritional status but also the impact these deficiencies have on their academic performance. That is why this study is timely and important so that its findings would be the basis for the teachers in giving solutions to arising problems on nutrition and education.

This observation is based on the principles of Abraham Maslow's hierarchy of needs or recognized as "A Theory of Motivation" or Human Needs. Maslow's theory stated that our actions are motivated by certain physiological and psychological needs that progress from basic to complex in other words to fulfill basic needs before moving on to more advanced needs. Moreover, this theory believed that people have an inborn desire to be self-actualized, that is, to be all they can be. To achieve this ultimate goal, however, several more basic needs must be met. Includes the need for food, safety, love, and self-esteem.

Maslow's Hierarchy figured as a pyramid categorized as Physiological needs (food, water, sleep, and shelter); Safety needs (financial security, health and wellness, and safety against accidents and injury); Social belongings (love, friendship, and intimacy); Esteem (personal accomplishment) and lastly the Self-actualization (self-aware, personal growth and fulfilling potential). However, most primary or basic needs of the pupils are the physiological needs. It is the pupils' daily survival to live a life. And of course, a need to fulfill this stage before moving forward to another stage of the hierarchy.

## II. METHODOLOGY

The research used a descriptive research design with documentary analysis which measures two or more pertinent variables and analyzes their relationships while descriptive research uses descriptive statistics to summarize the findings. Utilizing descriptive statistics like frequency and weighted mean, the data were processed statistically. T-test was used to gauge the importance of the connection. Results were interpreted and then analyzed.

The following statistical treatments were utilized to analyze the data of the study. Problems 1 and 2, the collected data on the nutritional status and academic performance of SBFP beneficiaries were displayed using frequency, percentage, mean, and standard deviation. To evaluate the significant distinctions in the nutritional status and academic achievement of SBFP beneficiaries before and after the study, a T-test was utilized in Problem 3.

## III. RESULTS AND DISCUSSION

**Problem 1.** What is the nutritional profile of pupils before and after the school-based feeding program?

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**Table 1**

*Pupils' overall nutritional status*

Level of Nutritional Status	Mean	SD	Interpretation
Before SBFP	11.72	1.49	Severely Wasted
After SBFP	16.70	1.03	Normal
<b>Overall Mean</b>	14.11	1.26	Normal

Table 1 presents a comparison of the pupils' overall nutritional status before and after implementation of the School-Based Feeding Program (SBFP), was put into place. It shows a Mean score of 14.11 with SD=1.26 with the interpretation of normal level for nutritional status. Improvement of the pupils' nutritional status was seen and observed providing the impression that the pupils were able to achieve improvements with regards to their degree of nourishment.

Within the same table, following the implementation of SBFP, achieved a score that was equal to the standard level. It is important to assess the pupils' nutritional status to determine the success of the SBFP program and if their nutritional status has improved or reached a normal level. This can be further contributed to the nutritious, safe and proper handling and distribution of prepared foods.

According to Rivera (2017) proper handling and distribution of the food for SBFP must be done accurately as it can cause a lot of troubles like contamination and unsafe foods that can result to food poisoning among the pupils. Thus, the teachers, parents and volunteers must be aware of proper ways and steps in handling food packs.

Meanwhile, before implementation of SBFP garnered a score that was equivalent to severely wasted level. Nutritional status among pupils is essential to check before the execution of the SBFP program to determine whether the recipients were the appropriate children for the program, and the state of the respondents' nutritional status served as the barometer or basis on checking if there is improvement or none at all after the SBFP is implemented. This can be further utilized to the variety of nutritious, safe and proper foods to be prepared and given to beneficiaries.

Magulod (2019) stated that planning ahead and carrying out a specific task, such as a feeding program, requires careful consideration of all relevant facts. In this manner, the application of the program will not only become safer but more beneficial and advantageous towards the pupil beneficiaries as well as the school, implementors, beneficiaries and even the donors. An activity that has been well implemented also attracts more volunteers and sponsors or donors knowing that it is well planned and implemented with the right causes and not just for compliance.

**Problem 2.** What is the level of academic performance before and after SBFP?

**Table 2**

*Pupils' Overall Academic Performance*

Level of Academic Performance	Mean	SD	Interpretation
Before SBFP	83.24	2.48	Fairly Satisfactory
After SBFP	87.43	1.76	Very Satisfactory
<b>Overall Mean</b>	85.34	2.12	Very Satisfactory
<b>Note:</b> 90-100 Outstanding	85 – 89	Very Satisfactory	80 – 84 Satisfactory
75 – 79 Fairly Satisfactory	74 & below Did not Meet Expectations		

The pupils' total academic performance is displayed in Table 2. With an overall Mean of 85.34 with SD = 2.12, it is considered Very Satisfactory. This indicates that the pupils' academic performance was at the second from the highest level. Although this is already a very good sign for the pupils, the teachers and the school heads may still provide interventions for academics aside from strengthening their health status. Pupils must be equipped with both sound and healthy body and intellectual capacity.

In the same table, the highest level of academic performance happened after the conduct of SBFP with the total Mean of 87.43 with SD=1.76, which is regarded as a Very Satisfactory Level after the SBFP was adopted, with most shows a significant improvement in their performance compared to before the SBFP implementation that pupils were able to achieve higher performance. In addition to improving pupils' health and conditions, this meal program is a good intervention for raising pupils' academic achievement.

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Zenebe et al. (2018) stated that improvement of the pupils' academic performance does not only come from the academic related interventions but also in improving their health conditions as this allows the pupils to have a healthy and sound mind and that learning for them is easy as they are free from distractions like illness and lack of concentration due to hunger.

**Problem 3.** Is there a significant difference in the nutritional status and academic performance of pupils before and after the SBFP was implemented?

**Table 3**

*Testing Differences Between Nutritional Status and Academic Performance*

Variables	t-value	p-value	Decision	Interpretation
Nutritional Status	7.625	0.000	Reject Ho	Significant
Academic Performance	6.501	0.001	Reject Ho	Significant

Table 3 highlights the differences in test scores related to pupils' nutritional health and academic performance before and after the school-based feeding program (SBFP) was introduced. Regarding Nutritional Status, the analysis yielded a t-value of 7.625 and a p-value of 0.000 were calculated for the before and after data of the SBFP implementation. The calculated p-value is smaller than the significance level of 0.05's p-critical value. As this implies that a significant difference was established on the pupils' nutritional status. This further signifies that the implementation of feeding program has significantly impacted when nutritional status is taken into account, the health conditions of the pupils improve.

The nutritional status of the pupils serves as their present condition health wise. Parents, teachers and other school personnel and stakeholders must give importance on monitoring and checking the pupils in these aspects. Health is sometimes taken for granted as it is often seen as pupils having the usual illness until it becomes serious and requires more medical attention. Thus, prevention of a simple condition to become serious or severe is a must and an achievement to accomplish. Beredo and Aceron (2019) as well as Domingo et al. (2019) stated that implementation of school-based feeding program must be shared on a wider scope like informing and educating the community through the parents on the importance of proving the pupils with adequate and appropriate diet. It does not need to mean buying expensive foods but on making sure that proper nutrients and vitamins are taken by the pupils to prevent them from being sickly.

For the academic performance, a t-value of 6.501 and a p-value of 0.001 was indicated in the data for both the pre- and post-implementation phases of the SBFP. At the 0.05 level of significance, the calculated p-value is less than the p-critical value. And this implies that a significant difference was established on how well pupils succeed academically. This further shows that the results suggest that the feeding program's implementation has played a crucial role in enhancing pupils' academic achievement.

There are indirect influences on academic performance attributed to the feeding program. This outcome can be attributed to the feeding program's efforts implementation, which has allowed the pupils to incur lateness and tardiness which means they are able to attend classes regularly. With a healthy body and mind, the pupils have less worries and distractions like being unwell and hungry. All these instances lead to the pupils better understanding and acquisition of knowledge and skills presented to them. Their concentration is no longer wandering while the classes is ongoing.

Del Rosario (2021) stated that pupils that are healthy physically and mentally are more likely to perform better with their academic endeavors. This is due to the fact that they have more confidence to learn and participate in class activities as they have less things to worry. Performance of the pupils at school is not just affected by the efforts made by the teachers on the academic aspects but also on non-academic aspect like the feeding program. For a holistic development, teachers and parents may look into different aspects of pupils' development so that their foundation of health and knowledge is solid and more than enough to back up their future.

## IV. CONCLUSIONS

The study's findings lead to the formulation of the following conclusions:

1. Once the feeding program was implemented, most pupils' nutritional status reverted to a normal state.
2. Due to the implementation of the feeding program, pupils have improved academic performance.
3. Pupils exhibited a distinct variation in their academic performance and nutritional status before and after the SBFP was implemented.

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### V. RECOMMENDATIONS

Taking into account, the study's findings and conclusions, the following recommendations are made:

1. The class advisers together with the feeding program coordinator and school heads may monitor the progress or status if guidelines and norms are correctly followed and carried out, the nutritional status of the pupils who get the feeding program will be improved.

2. Including more pupils in the feeding program will guarantee that everyone who needs it gets enough food. Enable the feeding program to be regularly observed and evaluated in order to gauge its efficacy and make the required modifications to enhance the program's influence and concerning pupils' academic outcomes.

3. Continue, sustain and enhance ongoing benefits for pupils, the School-Based Feeding Program (SBFP) should be implemented. Regular evaluations of pupils' nutritional health and academic success are necessary to monitor progress and pinpoint areas needing additional assistance or adjustments.

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