



SCHOOL-BASED FEEDING PROGRAM: NUTRITIONAL STATUS AND ACADEMIC PERFORMANCE OF PUPILS

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KeyWords

School-based Feeding Program: Nutritional Status, Body-Mass Index (BMI), Academic Performance

ABSTRACT

The study aimed to determine the impact of Nutritional Status on the Academic performance of Kauswagan Central School feeding beneficiaries from Grade 1 to 6 pupils ($n=198$) identified as wasted and severely wasted for the School Year 2020-2021. It employed the descriptive–correlational design utilizing a Documentary Analysis. There are two sources of data: the Nutritional Result from the School-Based Feeding Program and School Form 10, both of the same School Year, 2020-2021, from the Coordinator and pupils' Advisers. Frequency, percentage, standard deviation, Pearson-r coefficient, and t-test were used to analyze and interpret the data. Based on the result, Nutritional Status in terms of Body Mass Index has an impact on the academic performance of the school feeding beneficiaries. It was also revealed that the number of the identified severely wasted and wasted respondents have gradually increased their Body Mass Index (BMI), and their Nutritional Status rehabilitated to normal after the feeding period. Furthermore, positive attainment of the School-Based Feeding Program practices and goals was seen, thus revealing a significant difference in the Nutritional Status of the respondent during the pre-feeding and post-feeding period, including the Academic Performance of the respondents between the 1st Grading and the 3rd Grading. Thus, to continuously improve the beneficiaries' nutritional status, it is recommended for a longer feeding cycle throughout the school year to achieve positive health and educational outcomes.

INTRODUCTION

Good nutrition is the process of taking in food provided with the right amount of nourishment to the body, including a well-balanced and healthy diet consisting of fruits and vegetables. It is essential for mental and physical well-being and plays an important part in education, which intends to provide high-quality education and nurture lifelong learners.

According to the World Health Organization (2021) report, an estimated 149 million children under five years of age are stunted, 45 million are wasted, and 38.9 million are overweight and obese globally. This prominent data indicates how significant malnutrition should be addressed. Malnutrition is referred to as deficiencies or excess in nutrient intake, defined as both undernutrition and overweight and obesity. Undernutrition manifests in four forms: wasting, stunting, underweight, and micronutrient deficiency. On the contrary, overweight and obesity are described as higher than what is considered healthy.

The Philippines is one of the ten countries in the world with the highest number of stunted children, ranking fifth among East Asia and Pacific countries with the highest stunting and wasting prevalence. Despite significant economic growth and higher health budgets, little progress has been made in reducing stunting in the country (UNICEF, 2020). As stipulated in the 2018 Expanded National Nutrition Survey, 25% of 6-10-year-old children are underweight, 24.5 percent are stunted, and 7.6 percent are wasted in the Philippines. Stunting and underweight prevalence were observed to be not significantly different between boys and girls. However, stunting and underweight prevalence were significantly higher among the poor than in non-poor households. With the government's efforts to resolve the root causes of malnutrition over the years, agencies and departments such as the Food and Nutrition Research Center (FNRC), the Departments of Health, Education, Defense, and Social Welfare, the Presidential Assistant for Community Development, and the National Nutrition Council are working collaboratively to strategize and implement health services and programs (Philippine Plan of Action for Nutrition 2017-2022).

Nutrition plays a vital role in education; in fact, the Department of Education has been one of the major implementing agencies in the delivery of health-related services and programs. The Department has been using conditional food transfer programs to combat hunger and nutrient deficiencies since 1997 (Lu & Dacal, 2020). This is supported through DepEd Order No. 43 s. 2011 entitled "Strengthening the School Health and Nutrition programs for the Achievement of the Education for All (EFA) and Millennium Development Goals (MDGs).

Since then, the institution has been putting efforts into promoting nutritional programs such as School Feeding programs. School Feeding Program is a nutritional intervention ensuring all school children have access to nutritious meals. Moreover, DepEd Order No. 39 s. 2017 defines School Feeding Program as a sound investment in education. This policy is utilized to intensify the **School-Based Feeding Program (SBFP) operational guidelines for School Years 2017-2022** that address undernutrition among public school children. This aims to improve the beneficiaries' nutritional status, identified as Severely Wasted (SW) and Wasted (W) learners from kindergarten to Grade 6 pupils, by at least 70% at the end of 120 feeding days. However, in the School year 2020-2021, the duration of the feeding days has been reduced to 60 days for the nutritious food packs and 50 days for the milk products due to the changes in the school calendar and in consideration of the lapses of funds caused by the pandemic (DepEd Order no. 23 s.2020).

Basically, nutrition is a vital component of human health, life, and brain development throughout the entire lifespan. Feeding programs with its mission to provide meals with high nutritional value promotes in development of child's health and well-being. Economically, it lays a foundation for human capital by having a lifelong productive individual in the future. However, achieving good nutrition is still a pressing economic issue. Failure to provide adequate nutrition puts a child at risk of not realizing their full potential. An adequate food intake has been described by Alcuizar (2016) as the key element in influencing children's academic performance.

Severely wasted and wasted children have low learning ability in school, duly affected by their lack of nutrient intake (Asmare et al., 2018). Children who consume insufficient, excessive, or imbalanced nutrition are more likely to suffer academically. They face an educational disadvantage that compounds throughout childhood and adolescence, potentially resulting in decreased levels of aspiration and performance, and may even experience delayed growth and development (Naelga et al., 2016).

Thus, this has posed a challenge to Kauswagan Central School to alleviate the nutritional situation and increase academic performance among Kauswagan Central school-age children. With a total of 500 beneficiaries from Kindergarten to Grade 6 pupils, these beneficiaries have manifested poor nutrition outcomes labeled as severely wasted and wasted, exhibiting small stature, and low-energy behavior that may influence poor educational outcomes. Thus, it is a great motivation to investigate the school feeding program implementation in Kauswagan Central School. Hence, the study's goal is to thoroughly uncover the facts about the current nutritional condition of elementary pupils, especially in Kauswagan Central School. This further aims to generate empirical evidence on the relationship between nutrition and academic performance.

Theoretical/Conceptual Framework

This study links to Abraham Maslow's Motivation Theory. It is often called Maslow's Hierarchy of Needs which is a five-tier model of human needs frequently shown as hierarchical stages within a pyramid starting at the top, the highest basic human needs

down to the bottom (physiological, safety, love, esteem, cognitive, aesthetic, self – actualization and transcendence needs). Maslow's Hierarchy of Needs emphasizes the necessity for people to be satisfied. For example, a hungry student is not likely to be motivated to self-actualize until his hunger is satisfied. Maslow initially stated that individuals must satisfy lower-level deficit needs before meeting higher-level growth needs. Food belongs to physiological needs at the bottom of the hierarchy. Maslow believed physiological needs to be the most essential (Rivera, 2017).

The authors' Lu and Dacal (2020) grounded their study on Maslow's Hierarchal and Motivational Theory. Their study entitled- Implementation of School-Based Feeding Program and Its Effect on the Physical Growth and Academic Performance further emphasized the importance of food determinants in Maslow's hierarchy of requirements and that the desire or drive for success will not influence a person's thoughts and behaviors until the needs at the lower levels of the hierarchy are met.

This study is also guided under DepEd Order No. 23 s. 2020, the Guidelines on the Implementation of School Feeding Programs (SFPs) for the School Year 2020-2021. The Department of Education implements the School Feeding Programs (SFPs) to address the undernutrition problem among the learners to improve nutritional status and encourage learners to enroll despite the pandemic. It also aims to 'increase the number of School-Based Feeding Beneficiaries and increase the number of partnerships with the stakeholders. The implementation of the School-Feeding Program is in line with the Basic Learning Continuity Plan (BE-LCP), a package intervention that will respond to the basic education challenges brought about by COVID-19. This serves as a modification in the Department of Education in the design of learning delivery strategy and operational directions that prioritize the welfare of the learners, teachers, and personnel under the department. It is believed that education and learning depend on good nutrition.

Methodology

The study's design used a descriptive - correlational research design that investigated the relationship between the nutritional status and academic performance of Grade 1 to Grade 6 pupils of Kauswagan Central School. This is a non-experimental study of the significance of the variables with the help of statistical analysis.

According to the Expanded National Survey in Cagayan de Oro City, 44.1% of the households reported that they were food secure and 55.9 % or more than half of the households in the city experienced food insecurity wherein there was limited or uncertain availability of nutritionally adequate and safe foods acquired. Barangay Kauswagan is one of the prosperous barangays of Cagayan de Oro. According to the 2020 Census, Barangay Kauswagan had a population of 40,239. This represented 5.52 percent of the entire population of Cagayan de Oro City. Although it is a progressive barangay, according to the Barangay Health worker, there are still reported wasted and stunted children in the said barangay.

This study is conducted at Kauswagan Central School, North II District, Division of Cagayan de Oro City. The Kauswagan Central School was founded in 1907 by fourteen (14) private persons who named it "EL CATORSI" before donating it to the government as a public school in the year 1924. It is composed of two (2) campuses. The main campus is located approximately three (3) kilometers away from the heart of Cagayan, and the Annex Campus is a kilometer away from the main campus. The school belongs to the North II District and is a bit far from the Schools Division of Cagayan de Oro City, about fifteen (15) kilometers of distance. A School Principal-I manages Kasuwagan Central School with seventy-eight (78) teaching and non-teaching personnel; four (4) Master Teachers serve as co-mentors of the principal in coaching the sixty-four (64) teachers. There are 2140 approximately enrolled as learners from the school and come from diverse ethnicities such as Cagayanons, Boholano, Ilongo, Ilocano, Cebuano, Higaonon, Manobo, and other tribes from different parts of the country.

The study respondents were the Grade 1 to Grade 6 pupils of Kauswagan Central School identified as Severely Wasted and Wasted in the Nutritional Status. Therefore, there were a total of one hundred ninety-eight (198) pupil beneficiaries officially enrolled in the School Year 2020-2021. Also, the researcher used purposive sampling since all the respondents were the identified beneficiaries of the School-Based Feeding Program (SBFP).

School-based Feeding Program is a nutritional intervention that targets pupils from Kindergarten to Grade 6 level whose nutritional status was identified as undernourished (Severely wasted and wasted). Kauswagan Central School has an approximate 2,140 enrollees for the School Year 2020-2021. Fund allocated by the Division of Cagayan de Oro City provides 500 beneficiaries from Kindergarten to Grade 6 level. However, the study limits its respondents only from Grade 1 to Grade 6 levels, with the identified one hundred ninety-eight (198) pupil –respondents since the kindergarten level grading system does not use numerical grades compared to the other grade levels.

Documentary Analysis was utilized in the conduct of the study since the two sources of data gathered were from the previous school year. The first data was the nutritional status data SY 2020-2021 of Grade 1 to 6 pupils of Kauswagan Central School, while the second data was the respondents' academic performance collected through the School Form 10 (Permanent Record). In addition, the average grades of the respondents before the school feeding (First Grading) and after the school feeding (Third Grading) determines the academic performance of the respondents with the adjectival rating reflected in DepEd Order No. 8, s. 2015.

Body-Mass-Index (BMI) was stated in the nutritional status before the feeding period of the School Year 2020-2021, and the Academic Performance of the First Grading Period was used as the independent variable of the study. On the other hand, Body-Mass-Index (BMI) stated in the nutritional status after the feeding period of the School Year 2020-2021 and the Academic Performance of

the Third Grading Period was used as the dependent variable of the study. The statistical treatment of the gathered data was analyzed through the significant relationship and difference between the nutritional status and academic performance. In addition, descriptive and inferential statistics such as frequency of distribution mean standard deviation, percentage, t-test, and Pearson Product Moment Correlation Coefficient were used to summarize and analyze the data. This was tested at a .05 probability level. The researcher preferred this design and statistical treatment as the best strategic approach to gain an understanding of the study.

The researcher obtained a letter of request from the Dean of Graduate Studies and submitted the request letter to the Cagayan de Oro City Schools Division Superintendent through the School Principal of Kauswagan Central School. After which, a meeting was requested with the school feeding coordinator and pupils' advisers to obtain the data needed. The documents were collected, such as the nutritional records and grades of the respondents' School Year 2020-2021. The researcher complied with the Data Privacy Act in collecting various data and information from the respondents. Thus, all the respondents' names remained confidential and were alternatively labeled with numbers.

During the data gathering, the Inter-Agency Task Force (IATF) protocols were followed to ensure safety and minimize exposure to Covid transmission. Data collection was gathered per advisor in each grade level for three consecutive days. This study used purposive sampling since all the respondents were the identified beneficiaries of the School-Based Feeding Program (SBFP) for the School Year 2020-2021. After collecting the data, it was tallied and collaborated with a statistician in tabulating and interpreting data.

Results and Discussions

Problem 1. What is the nutritional status of Grade 1 to Grade 6 pupils of Kauswagan Central School: Before the Feeding Period; and After the School Feeding?

Table 1

Overall nutritional status before the school feeding

Nutritional Status	f	%
Severely Wasted	61	31
Wasted	137	69
Total	198	100

Table 1 indicates the Overall Nutritional Status before the School Feeding. It revealed that out of 198 respondents from Grade 1 to 6 levels, 61 participants (31%) were identified as severely wasted. This means that these pupils' weight and height does not commensurate with the right weight and height for their age. This may be due to the lack or inadequate nutrition of these pupils at home. It further implies that food security at home is vital in providing adequate nutrition to children. Moreover, as the researcher observed that residents in Barangay Kauswagan are a diverse community with different socio-economic backgrounds, food insecurity and food choices may vary.

However, 137 participants (69%) were wasted before the feeding period of Kauswagan Central School. This means that most children reflect a small stature with regard to their normal body weight. This may imply that the food shortage of these school-age children is being experienced at home. This further implies that food insecurity in urban areas still exists and needs to be addressed. According to Slowik (2019), Nutritional status is an important indicator that diagnoses school-age children's Body Mass Index (BMI), the most popular and common method for nutritional status assessment.

As stipulated in DepEd Order No. 39, s.2017, nutritional assessment is an indicator in identifying and assessing the improvement of the beneficiaries of the program. The school feeding program for S.Y 2020-2021 in Kauswagan Central School conducted its pre-weighing from Kindergarten to Grade 6 pupils on November 1st week, 2020. Upon the result of the assessment before the feeding period, the majority of respondents' Body-Mass-Index implicates poor nutritional status upon the pre-weighing. Children who are food insecure miss school more frequently and are more likely to repeat a grade than children who are food secure. In addition, food insecurity has been linked to a lower likelihood of a child graduating from school.

Through School Feeding Programs, it will empower school-age children to be healthy by aiding proper nutrition and nurturing them to go on with their everyday lives and be more responsible students; eventually helping them aspire to a brighter future

Table 2
Breakdown of nutritional status before the school feeding

Nutritional Status	Grade level													
	1		2		3		4		5		6		Total	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
<i>Severely Wasted</i>	40	20.2	2	1	6	3	3	1.5	6	3	4	2	61	30.7
<i>Wasted</i>	76	38.4	19	9.6	4	2	15	7.6	10	5.1	13	6.6	137	82.3
Total	116	58.6	21	10.6	10	5	18	9.1	16	8.1	17	8.6	198	100

Note: f= Frequency, %=Percentage

Table 2 shows the distribution of frequency and percentage of Nutritional Status before the School Feeding. Out of 198 respondents, it revealed that among all the grade levels, Grade 1 level has the most number of pupils identified as severely wasted, with 40 pupils (20.2%) and 76 (38.4%) wasted pupils in the pre-weighing nutritional assessment for the SY. 2020-2021. This means that poor nutritional status is rampant to lower grade levels. It might be that these pupils ages ranging from 6-7 years old are picky eaters and have their food according to their liking. This may further imply that these children are particular about what they are eating and refuse to eat or eat less. Children are not growing at the average rate for their age, it might be that the consumption of nutritious meals at home is infrequent, or they are not eating enough.

On the statement of Ventura (2016), school-age is a time of rapid human development. This is also the time when the need for nourishment rises and eating habits are established. This connotes the study of Papica (2020) that school-age children identified as undernourished in the nutritional status and enrolled in school had a higher risk of grade-level repetition and lower educational outcomes. This is supported by the pupils' advisor who stated that: "*Usa sa nakaapekto sa nutrisyon sa bata kay ang ka pobrehon*". This means that compromising the quality of food intake is influenced by the state of living or by the socioeconomic background of parents. It might be that parents are more indulged in finding means to survive the daily challenges of life that their focus on their children's nutrition is neglected.

Table 3
Overall nutritional status after the feeding period

Nutritional Status	f	%
<i>Severely Wasted</i>	9	4.5
<i>Wasted</i>	20	10.1
<i>Normal</i>	169	85.4
Total	198	100

Table 3 demonstrates the overall Nutritional Status after the Feeding Period. It revealed that most of the beneficiaries after the feeding period identified as severely wasted and wasted rehabilitated to normal BMI with 169 (85.4%) pupils. This means that providing beneficiaries with nutritious food packs, e-bun, and milk products improves their Nutritional Status. It also implies that these pupils have consumed adequate food from the school feeding and have practiced good eating habits at home.

On the other hand, 9 (4.5%) severely wasted and 20 (10.1%) wasted pupils have remained their nutritional status poorly. It might be that these pupils weren't interested in eating nutritious food and eat only according to their liking.

Under DepEd Order No. 39, s. 2017, the School feeding program primarily aims to improve the nutritional status of the beneficiaries by at least 70% at the end of the feeding cycle by providing beneficiaries with nutritious food packs meeting 1/3 of the beneficiary's daily nutrient requirements. The School Feeding Program for the School Year 2020-2021 post weighing was performed after the feeding period conducted in the last week of February 2021. The implementation has achieved its goals of improving the Nutritional Status of the beneficiaries more than the target goals after the feeding cycle, although the feeding cycle was reduced to 60 days for the food component and 50 days for the milk products due to the changes in the school calendar days. However, according to the program coordinator, the duration of the feeding program is insufficient enough and needs to be implemented continuously and frequently to ensure that the pupils' Nutritional Status will improve permanently. Furthermore, there were some challenges, especially in the delivery and distribution of the food packs and milk products, due to the changes brought by the pandemic.

Food packs and milk products are distributed per week and on the day scheduled by the retrieval and distribution of the module through the pupils' parents. Some of the parents of the beneficiaries were unable to go to the school to get the module and receive the food rations due to the conflict of work schedule, no vaccination, and distance from the school. As supported by the parents' statement that: "*Maglisod gyud ko ug kuha sa modyul sa akong anak pag niagi kay wala pami na vaccinan ug lisod ang panakayan sa bukid*". These challenges were seen as the weak links in the implementation of the School-based Feeding program.

Table 4
Breakdown of nutritional status after the feeding period

Nutritional Status	Grade level												Total	
	1		2		3		4		5		6			
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Severely Wasted	8	4	0	0	0	0	1	0.5	0	0	0	0	9	4.5
Wasted`	13	6.6	2	1	1	0.5	0	0	2	1	2	1	20	11.1
Normal	95	48	19	9.6	9	4.5	17	8.6	14	7.1	15	7.6	169	85.4
Total	116	58.6	21	10.6	10	5	18	9.1	16	8.1	17	8.6	198	100

Note: f= Frequency, %=Percentage

Table 4 presents the Breakdown of the Nutritional Status after the Feeding Period. It revealed that among all the grade levels, Grade 1 level has the highest number of beneficiaries that have rehabilitated to normal nutritional status presenting 116 (58.6%). Generally, it indicates high attainment of SBFP goals exhibiting 169 (85.4%) pupils improved nutritional status after the feeding program. This precedes that they have regularly consumed food and have experienced food security at home with the aid of the food packs and milk products distributed by the school feeding.

However, it can be denied that there were pupils who remained severely wasted and wasted, particularly in the Grade 1 level with 8 (4%) and 13 (6.6%) pupils, respectively. This may imply that these remaining pupils with poor nutritional status, despite the support of the school feeding program still insufficient enough to improve their BMI. It may further imply that food insecurity may have an influence on practicing good eating habits.

Generally, the School feeding program at Kauswagan Central School is successfully implemented and improves the beneficiaries' Body-Mass-Index (BMI) more than the SBFP target goal of 70% after the feeding cycle. This may also speculate that the nutritious food pack is adequate in helping to improve the nutritional status of the pupils. This is supported by Lawson (2017) that School feeding provides benefits for disadvantaged children measured by indicators of physical growth and cognitive abilities. This is also connected to Zenebe et al., (2018), that school feeding appears to improve school children's nutritional status and eating habits by adding different food groups into their diet.

Food practices from the School Year 2020-2021 have differed from the past years. Traditionally, meals were served in school, and eating practices were monitored. However, the transition to new normal education has also changed the school-based feeding program operations and implementation. The school has used a Blended Learning approach wherein different modalities of learning are combined to provide quality education amidst the pandemic. No face-to-face classes were being mandated. Therefore, the school-feeding program operation was being considered.

Nutritious food packs, e-bun, and milk products with high nutritional value were chosen as alternatives and are distributed during the submission and retrieval of modules by the parents. It is expected through parents' supervision that pupils may practice good eating habits and inculcate nutritional values. Thus, parents' participation greatly contributes to implementing the School-Based Feeding Program.

Table 5
Comparative overall nutritional status before and after the feeding period

Nutritional Status	Before		After	
	f	%	f	%
Severely Wasted	61	31	9	4.5
Wasted	137	69	20	10.1
Normal	0	0	169	85.4
Total	198	100	198	100

Table 5 reveals Comparative overall nutritional status before and after the Feeding Period. Upon the pre-weighing conducted before the feeding program, the result shows 61 (31%) were identified as severely wasted, and 137 (69%) were identified as wasted. This indicates the prevalence of undernourished in Kauswagan Central School. Whereas, after the feeding period, it is remarkable that 169 (85.4%) pupils have generally improved and rehabilitated their BMI to Normal Nutritional Status.

This precedes that giving out nutritious food packs, e-bun, and milk products aids in the improvement of nutritional status and good practice of eating habits. Initially, by providing frequent distribution per week, the pupils are expected to provide the learner with the right amount of nourishment that will maximize their potential as productive learners and further develop accordingly to their normal size and weight.

The result promotes the conclusion of Zenebe et al., (2018) that School Feeding Programs are a focused safety net program that provides educational and health advantages to vulnerable children. This result is consistent with the study done in Al-Seeb, Oman, presented by Amani et al., (2020). The study showed that the Ghana school feeding program has significantly improved the nutritional status of school children

School feeding has improved the dietary diversity of school children over the years. According to the policy guidelines of DepEd Order No. 39 s. 2017, one of the aims of the School-based feeding program is to improve the nutritional status by at least 70%. Although the program's implementation has changed, particularly in the duration of feeding cycles, modality of delivery and distribution, and budget allocation, the nutritional assessment conducted before and after the feeding period shows a significant improvement.

Body-Mass Index is the baseline and indicator of Nutritional assessment. This is performed in the school by the school nurse. However, due to no face-to-face classes for the School Year 2020-2021, the Nutritional Assessment pre-weighing and post-weighing are done through the learners' parents, in which the teacher inputs the age, weight, and height into a computer-generated Nutritional Status Table that will enable to determine the Body Mass Index Scale of the pupil. Successful implementation is being determined by comparing the assessed nutritional status between pre-weighing and post-weighing within the duration of the implementation of the school feeding program.

Problem 2: What is the Academic Performance of Grade 1 to Grade 6 pupils of Kauswagan Central School based on: 1st Grading Period and 3rd Grading Period

Table 6

Overall academic performance in the 1st grading period

Academic Performance	1 st Grading	
	f	%
Outstanding	39	19.7
Very Satisfactory	72	36.4
Satisfactory	67	33.8
Fairly Satisfactory	20	10.1
Did not meet Expectations	0	0
Total	198	100

Note: Below 75 – Did not meet expectations, 75-79 Fairly Satisfactory, 80-84 Satisfactory, 85-89 Very Satisfactory, 90-100 Outstanding

Table 6 shows the overall academic performance in the 1st Grading Period. It revealed that out of 198 beneficiaries, most of them ranked Very Satisfactory with 72 (32.6%) pupils. This means that these pupils, despite being declared undernourished, are studios and are more invested in learning than playing. Furthermore, this may imply that learners at the beginning of the school year are enthusiastic about performing better and aim to excel in school. It may also imply that these pupils are goal-driven toward their futures. Many factors vary in how learners achieve their academic success, including establishing a comfortable and nurturing environment. Through School Feeding Program ensures a well-nourished environment and promotes pupils' health and educational stability. Securing good education boost self-esteem and leads to a brighter future.

The same table revealed that 20 (10.1%) pupils in the 1st Grading Period attained an academic scale of Fairly Satisfactory. This may employ that these learners were not interested in getting a high honor and were already satisfied with having a passing grade. Furthermore, this might mean that this type of learner was aloof and needed more boosting their potential. The lack of confidence makes a learner feel unmotivated to participate, thus affecting the academic performance or, worst, dropping out from school. In order to prevent this situation, as teachers, it is important to strictly monitor the performances of their learners in order to assess what effective teaching strategies they can provide for their learners' progress.

Numerous factors are known to affect the academic performance of students; these include school feeding and nutritional status data (Aceron, 2019). Academic achievement is attained through good academic performance. As cited by the study of Alcuizar (2016),

Akanle (2007) mentioned that to elementary-age children, and academic achievement is important as a resource for productive adult life.

Table 7
Breakdown of academic performance in the 1st grading period

Academic Performance	Grade level												Totals	
	1		2		3		4		5		6			
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
<i>Outstanding</i>	25	12.6	5	2.5	2	1	4	2	1	0.6	2	1	39	19.7
<i>Very Satisfactory</i>	48	24.2	6	3	3	1.5	5	2.6	6	3	4	2	72	36.3
<i>Satisfactory</i>	31	15.7	10	5.1	3	1.5	6	3	6	3	11	5.6	67	33.9
<i>Fairly Satisfactory</i>	12	6.1	0	0	2	1	3	1.5	3	1.5	0	0	20	10.1
<i>Did not meet Expectations</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	116	58.6	21	10.6	10	5	18	9.1	16	8.1	17	8.6	198	100

Note: f= Frequency, %=Percentage; Below 75 – Did not meet expectations, 75-79 Fairly Satisfactory, 80-84 Satisfactory, 85-89 Very Satisfactory, 90-100 Outstanding

Table 7 illustrates the academic performance breakdown for the 1st Grading Period. This means that, among the six grade levels, Grade 1 has the highest number of students who received a Very Satisfactory and Satisfactory academic rating, with 48 (24.2%) and 31 (15.7%), respectively. This means that although showing a poor nutritional status, these pupils were attentive and focused more on performing their tasks and modules than playing.

This indicates that not just purely malnutrition affects the learning capacity of the child but also some intervening factors such as the distractions at home that could take much time instead of answering the modules and other performance tasks. Hence, it is important to impose awareness on parents of the importance of their supervision in their child's educational outcomes during this time of the pandemic. Moreover, parents support and attention may influence the child's motivation to learn and strive for a better future.

On the other hand, it is noticeable that Grade 1 level has the most number of pupils attaining as Fairly Satisfactory Scale showing 12 (6.1%) pupils. This implies that early-life nutritional deficits have an impact on school-aged children's cognitive development. Children from impoverished families may experience food insecurity causing for them to be undernourished. This may result to a child's impediment of physical development, low concentration in their school performance task and lastly, limiting their future achievements.

Table 8
Overall academic performance in the 3rd grading period

Academic Performance	3 rd grading	
	Frequency	Percentage
<i>Outstanding</i>	61	30.9
<i>Very Satisfactory</i>	66	33.3
<i>Satisfactory</i>	53	26.7
<i>Fairly Satisfactory</i>	18	9.1
<i>Did not meet Expectations</i>	0	0
Total	198	100

Note: Below 75 – Did not meet expectations, 75-79 Fairly Satisfactory, 80-84 Satisfactory, 85-89 Very Satisfactory, 90-100 Outstanding

Table 8 reveals the overall academic performance in the 3rd Grading Period. It is noticeable that the majority of the academic performance of the respondents on the academic scale received outstanding grades from 19.7 % to 30.9 %. It can be noted, however, that the respondents who have a Very Satisfactory grade of the respondents before the feeding period decreases from 36.4 % to 33.3% and Fairly Satisfactory from 11% to 9.1%.

This means that the academic performance of the respondents after the feeding period or in the 3rd Grading has a noticeable improvement in their academic performance, significantly achieving the most of the respondents with outstanding grades. This further

implies the positive association of school feeding with the academic performance of the respondents after the feeding period. It could mean that choices of nutritious food packs have an important paramount factor in affecting pupils' academic achievement. This implies that food and nutrition have a vital role in education.

Nalega et al., (2016) stressed that some intervening factors such as poor study habits of the students or lack of interest and not just poor nutritional status are the only factor why learners have very poor academic performance or failure in studies. This may be exhibited by the beneficiaries in the 3rd grading who have retained their grade as fairly satisfactory. This may implicate that some learners are unenthusiastic in participating in eating the food rations and are unwilling to excel in school.

Table 9
Breakdown of academic performance after the feeding period

Academic Performance	Grade level													
	1		2		3		4		5		6		Totals	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
<i>Outstanding</i>	35	17.7	8	4	4	2	7	3.6	4	2	3	1.5	61	30.8
<i>Very Satisfactory</i>	39	19.7	6	3	3	1.5	6	3	8	4	4	2	66	33.2
<i>Satisfactory</i>	28	14.1	7	3.6	1	0.5	4	2	3	1.5	10	5.1	53	26.8
<i>Fairly Satisfactory</i>	14	7.1	0	0	2	1	1	0.5	1	0.5	0	0	18	9.1
<i>Did not meet Expectations</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	116	58.6	21	10.6	10	5	18	9.1	16	8.1	17	8.6	198	100

Note: Below 75 – Did not meet expectations, 75-79 Fairly Satisfactory, 80-84 Satisfactory, 85-89 Very Satisfactory, 90-100 Outstanding

Table 9 reflects the breakdown of academic performance after the feeding period. It revealed that among all the grade levels, Grade 1 level has the most number of pupils who attained an academic scale of Outstanding, representing 39 (17.7%). This signifies that the academic performance of the pupil has improved in the 3rd Grading period. This may infer that students were positively influenced by driving factors such as parental support and school assistance. The School Feeding Program is an intervention implemented by public schools in order to aid assistance to school-age children experiencing poor nutritional status. It is known that improved nutritional status is associated with good academic performance. This is supported by the study of Prangthip (2018), who supported that although several factors play a significant role in determining a child's educational outcomes, a child's health and nutritional status are potential factors that commonly influence academic achievement.

Furthermore, it is noticeable that some of the pupils have maintained a rating of Fairly Satisfactory, particularly in the Grade 1 level representing 14 pupils (7.1%) in the 3rd Grading Period. This may insinuate that these remaining pupils were not much motivated enough to study and may have struggled to cope with the new learning modality, resulting in poor academic performance.

Each student has a unique learning ability. Some learn through visuals, others learn by doing, and many more. Motivation determines and directs what they want to learn. The new normal education has put learners with challenges such as self-studying, lack of sleep and time to answer all the modules, absence of parental supervision, and the lack of focus made to the distractions at home. This has mainly affected the child's performance in school. Through programs, the school may invigorate students' motivation to learn and establish teacher engagement with learners despite no face-to-face classes.

Table 10

Comparative overall academic performance in the 1st grading and 3rd grading period.

Academic Performance	1 st Grading		3 rd Grading	
	f	%	f	%
<i>Outstanding</i>	39	19.7	61	30.9
<i>Very Satisfactory</i>	72	36.4	66	33.3
<i>Satisfactory</i>	67	33.8	53	26.7
<i>Fairly Satisfactory</i>	20	10.1	18	9.1
<i>Did not meet Expectations</i>	0	0	0	0
Total	198	100	198	100

Note: Below 75 – Did not meet expectations, 75-79 Fairly Satisfactory, 80-84 Satisfactory, 85-89 Very Satisfactory, 90-100 Outstanding

Table 10 shows the comparative overall academic performance in the 1st Grading and 3rd Grading Period. It can generally be said that their performance improved after the feeding program, with more students getting outstanding grades from 39 (19.7%) in the 1st grading to 61 pupils (30.9%) in the 3rd Grading Period.

This implies that the consistency of providing nutritious food impacts have generally impacted the pupils to excel in their academic performance after the feeding period. This may further imply that eating healthier meals has also been related to higher grades, improved memory and attentiveness, and faster information processing. This is further stressed by Wang (2020) that a child's health and nutritional status are potential factors that commonly influence academic achievement. Furthermore, this is also supported by Reyes (2016), in which the study shows a reduced number of absences of pupils and has perceived a positive influence on the rate of dropouts while raising the number of students who enroll in school.

However, pupils who attained an academic scale of Fairly Satisfactory in the 1st Grading Period show a small improvement in their academic performance showing only two pupils have excelled in the 3rd Grading Period. This may infer that poor nutritional status directly influences students' academic performance. It may imply that efforts of consistent distribution of the food packs and milk products by the school feeding do not show any positive influence on the child's academic achievement. It might be that the received food rations were not solely eaten by the beneficiary causing them not totally consume the intended nutritional value. Thus, inadequate nutrition intake leads to children's late development and poor academic performance. Thus, constant monitoring of the learners' school performances must be taken in action and should be addressed seriously to enable to build of productive and globally competent learners amidst the new normal education.

Problem 3. Is there a significant relationship between the Nutritional Status in terms of BMI and the Academic Performance of the Kauswagan Central Grade 1 to Grade 6 pupils before and after the feeding program?

Table 11
Test correlation on nutritional status before and after the feeding period

Grade	Before		After		Critical r	Computed r	P-value	Interpretation
	Mean	SD	Mean	SD				
1	12.11	0.81	13.88	1.49	0.138	0.346	0.000	Significant
2	12.42	0.48	15.02	1.45	0.433	0.307	0.176	Not Significant
3	11.86	0.83	15.63	1.88	0.632	0.287	0.421	Not Significant
4	13.61	1.47	15.02	1.70	0.468	0.674	0.002	Significant
5	12.27	1.10	16.35	1.90	0.497	0.573	0.020	Significant
6	13.32	1.22	15.09	1.14	0.482	0.497	0.042	Significant

Table 11 demonstrates the test correlation on nutritional status before and after the feeding period. It revealed that the Grade 1 (12.11, 13.88), Grade 4 (13.61, 15.02), 5 (12.27, 16.35), and 6 (13.32, 15.09), respectively in the Nutritional Status, had a positive correlation before and after the feeding period. The computed Pearson r-values of 0.000 before and after the feeding period in Grades 1,4,5, and 6 are lower than (<) 0.05 Alpha Level of Significance; therefore, the null hypothesis is rejected. This mainly shows the significant relationship between the pre-feeding and post-feeding nutritional status. This may insinuate that the implementation of the School-Based Feeding Program has generally improved the BMI beneficiaries according to their age and gender. It also signifies high attainment of the SBFP goals showing a successful implementation of the program.

Ultimately, the School-Based Feeding Program's goals are to alleviate hunger and improve the nutritional status of school-age children. Despite revisions towards implementation and operation, the provision of the goals remained the same. With the strong school management and parents' support, the school feeding practices in Kauswagan Central School have generally achieved its goals.

However, it can be noted that the obtained mean of Grade 2 (12.42, 15.02) and Grade 3 (11.86, 15.63) and the computed Pearson r-values of 0.000 before and after the feeding are higher than (<) 0.05 Alpha Level of Significance; therefore, the Null Hypothesis is accepted. These levels indicate that there is a weak link. This link may be due to intervening factors such as poor students' eating habits or lack of interest in nutritious food and not just purely nutrition (Naelga, 2019). This may implicate that this at home may not be encouraged in good eating habits. This means that parent/guardian participation in school feeding programs has indirectly influenced students' nutritional status. This implies that parents/guardians should pay more attention to the child's nutritional status by inculcating good eating behavior and preparing meals with adequate nutritious foods at home.

Malnutrition is caused by a lack of adequate nourishment, but there are other factors that affect school-age children's nutritional status. The lack of knowledge about healthy nutrition could be one of the factors. Most cases and causes of malnutrition were caused by poverty and poor dietary habits. Hence, nutrition awareness and governance should be promoted to aid in the prevalence of stunting and wasting among school-age children.

Table 12

Test correlation on academic performance before and after the feeding period

Grade	Before		After		Critical r	Computed r	P-value	Interpretation
	Mean	SD	Mean	SD				
1	85.51	4.04	85.89	4.76	0.138	0.863	0.000	Significant
2	85.57	3.82	86.47	4.03	0.433	0.937	0.000	Significant
3	85	4.67	85.56	5.52	0.632	0.967	0.000	Significant
4	85.22	4.99	87.33	5.07	0.468	0.948	0.000	Significant
5	83.63	3.64	87.13	4.21	0.497	0.892	0.000	Significant
6	85.59	3.27	85.53	3.71	0.482	0.904	0.000	Significant

Table 12 shows the test correlation on academic performance of Grade 1 to Grade 6 Pupils Before and After the Feeding Period. It revealed that there is a significant relationship in the respondents' academic performance in both 1st Grading and 3rd Grading before and after the feeding program. The obtained P-value of 0.00 in all grade levels between 1st Grading and 3rd Grading academic performance was found to be significant at a 0.5 level of significance. Thus, the null hypothesis is rejected and indicates that there is a positive correlation between the nutritional status in terms of BMI and the academic performance of the Kauswagan Central School Grade 1 to Grade 6 pupils before and after the feeding program.

This further implies that the School Feeding Program has profoundly affected the academic performance of the student through active participation in performance tasks, helped learners to get motivated upon answering their modules, encouraged parents to submit and retrieve modules of their child on time, and enhanced school enrolment. This may also implicate those pupils have adapted in the changes toward the new normal education.

Proper nutrition is essential for students to achieve their full academic potential. Thus, interventions such as the School-Based Feeding Program must be strengthened to improve the nutritional status and enhance the academic performance of the students. It is recommended by Bansal (2017) that children should be encouraged to adopt healthy food practices and lifestyles to maintain a healthy normal body weight, which will eventually improve their academic performance.

Problem 4: Is there a significant difference between the Nutritional Status in terms of BMI to the Academic Performance of Kauswagan Central Grade 1 to Grade 6 pupils before and after the feeding program?

Table 13

Test difference in nutritional status and academic performance before and after the feeding period

Grade	Nutritional Status		Academic Performance		Critical t	Computed t	P-value	Interpretation
	Mean	SD	Mean	SD				
1	13.88	1.49	85.89	4.76	1.96	4.845	0.000	Significant
2	15.02	1.45	86.47	4.03	2.02	4.679	0.000	Significant
3	15.63	1.88	85.56	5.52	2.10	6.013	0.000	Significant
4	15.02	1.70	87.33	5.07	2.04	5.795	0.000	Significant
5	16.35	1.90	87.13	4.21	2.04	9.309	0.000	Significant
6	15.09	1.14	85.53	3.71	2.04	2.545	0.000	Significant

Table 13 shows test difference in nutritional status and academic performance before and after the feeding period. It revealed that the computed Significant P-value of 0.000, which is lower than (<) 0.05 Alpha Level of Significance; therefore, the Null Hypothesis is rejected; hence there is a significant difference between the result of nutritional status and academic performance of the respondents. Based on the result, there is a significant difference in the nutritional status of the beneficiaries during pre-feeding and post-feeding activities, and there was an increased academic performance of beneficiaries after the feeding program.

The data clearly demonstrate that through the School Feeding Program, the goals of increasing the BMI of beneficiaries achieved a very high attainment rate of SBFP targets; severely wasted individuals were rehabilitated to normal nutritional status. According to Ventura (2016), school-age is a time of rapid human development. This is also the time when the need for nourishment

risers, and eating habits need to be established. A study presented by Amani et al., (2020) in some schools showed a positive association between healthy dietary habits and improved nutritional status of school students after the school feeding cycle.

As cited by Wang (2020), poor nutritional status is one of the major causes of low academic performance and productivity in primary education, which may affect children's physical and cognitive development during their early years of life. Furthermore, children who are severely wasted and wasted have low learning ability in school, duly affected by their lack of nutrient intake (Asmare et al., 2018). Thus, it is of great significance to teach children the importance of eating habits and good nutrition in school.

Relative to Abraham Maslow's Motivation or Hierarchy of Needs Theory, in order for a learner to function to its full potential, one must meet the lower levels of needs. Food belongs to a lower level of the hierarchy. It is the foundation for the development of cognitive, motor, and socio-emotional skills. A fully-developed and healthy body promotes a child's full satisfaction in their well-being and encourages boosting one's potential in school. This is linked to the principle that no learning takes place with an empty stomach. Therefore, it is a need to implement a school feeding program in the nation and pose awareness as to how this program highly impacts children.

Conclusion

1. The study revealed that there was very high attainment of the SBFP goals, particularly in the rehabilitation of the severely wasted and wasted beneficiaries to normal nutritional status at the end of feeding days.
2. It reflects the School-Based Feeding Program's significant association with improving the academic performance of the pupils.
3. There is a significant relationship between the pupils' academic performance and their Body Mass Index. Thus, the null hypothesis was rejected.
4. There is a significant difference in the nutritional status of the beneficiaries between pre-feeding and post-feeding. It further showed a significant improvement in the beneficiaries' academic performance before and after the feeding period. Thus, the null hypothesis was rejected.

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