WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

School-Based Feeding Program and its Effects on Pupils' Academic Performance at Pag-Itan Elementary School, Panukulan District

Maharlika Porqueriño

Department of Education-Balungay Elementary School, Panukulan, Quezon

ABSTRACT

Malnutrition is a problem faced globally. It can affect different aspects of life including the academic performance of the children. This study attempted to determine the effects of school-based feeding program on pupils' academic performance. The researcher reviewed related literature and studies that supported the conduct of this study.The result showed that the grades of the malnourished pupils before implementing the program was 81.26. Twenty-six were under the range 75-79, twenty-two were under 80-84, ten were under 85-89, and three under the range of 90-100. After implementing the program, the grades mean is 82.18. Some of the pupils improved and others were retained. The result showed slight improvement in the grades of the pupils. With the p-value of 0, it showed that there is significance difference between the grades of the malnourished pupils before and after implementing the program.

Introduction

Academic performance can affect different aspects in life as one grows old. It can be the basis for finding great job and even for selecting a school to study at. However, it can be affected by many factors; one of those is malnutrition.

According to conventional definitions, malnutrition is a chronic disorder that results from consuming too much or too little of any one or more important macro- or micronutrients in comparison to a person's physiological and pathological needs (Ecker & Nene, 2012). Depending on the person's Body Mass Index, a malnourished person can be classified as extremely wasted, wasted, normal, overweight, or obese. Using the height-for-age method, it can also be classified as severely stunted, stunted, normal, or tall. According to World Health Organization (2018), there are two hundred sixty-five (265) million malnourished pupils all over the globe. In the Philippines, approximately seven (7) million children are suffering from malnutrition as estimated in 2017.

Low academic performance is a problem in the Panukulan District, where the average Mean Percentile Score (MPS) is 57.4. The 2017 District Monitoring and Evaluation Plan for Adjustment (DMEPA) reflects it, as indicated by the MPS. Pag-itan Elementary School was placed six out of the twelve schools, with an MPS of 58.68. Malnutrition is the one that stands out in the school among the many problems that are there due to data gathered from the pre-nutritional status report. There are thirty-eight thousand eight hundred eighty-nine (38,889) malnourished students in the Division of Quezon, two hundred sixty-eight (268) in Panukulan District,. and Pag-itan Elementary School has twenty-four (24) severely wasted pupils and fifty-seven (57) wasted pupils, with the total of eighty-one (81) malnourished pupils. The numbers indicate that forty-three and fifty-five percent (43.55%) of one hundred eighty-six (186) pupils in the school are malnourished.

As stated in DepEd Order No. 39, s. 2017, School-Based Feeding Program (SBFP) is a program of DepEd that started in 2017 and will end in 2022 to address undernutrition among children in public schools. Its main aim is to improve the nutritional status of the beneficiaries, increase classroom attendance, and improve children's health and nutrition values and behavior.

With this situation, the researcher aimed to determine the effects of school-based feeding program on pupils' academic performance and what other factors could affect the academic performance of the pupils to inform the pupils, parents, teacher and government about it.

Brief Review of Related Literature and Studies

There were six causes of poor academics in children according to Aberlaez (2018). These are the permissive atmosphere performance at school, problems at home, post-traumatic stress and emotional distress, attention deficit and hyperactivity disorder, specific learning difficulties, and poor nutrition and feeding habits.

Malnutrition remains one of the major obstacles to human well-being and economic prosperity in developing countries (Ecker & Nene, 2012; Stevens et al., 2012). The most recent report from Save the Children (2012) stated that adults who were malnourished as children earn twenty percent less in academic performance, on average, than those who were not.

According to Levinger (1996), as cited in Ojo (2016), vast numbers of school-aged children in developing countries face major health and nutrition problems that adversely affect their ability to take advantage of the limited educational opportunities available to them. Brown, Beardslee, and Prothrow-Stith (2008) noted that poor nutrition can leave students' susceptible to illness or lead to headaches and stomach aches, resulting in school absences. Also, UNICEF (2013) identified slower memory recall, hyperactive and attention problems, lower test scores and class repetition as consequences of malnutrition.

UNICEF, WHO and World Bank Group (2017) stated that one of the results of poor nutrition in early childhood is stunting. Children suffering from stunting may never grow to their full height and their brains may never develop to full cognitive potential. They also face learning difficulties in school, earn less as adults, and face barriers to participation in their communities. Some children suffer from more than one form of malnutrition such as stunting and overweight or stunting and wasting. Cognitive development and brain physiology among children and adolescents require access to sufficient and nutrient-rich food at early stages of life (USAID & WFP, 2010 as cited in Abebe et. al, 2017). The nutrient-rich food contains nutrients that activate cells in children's brain that can help them to study better.

There are numerous causes of underachievement that include the poor quality of teaching, the unavailability of text books, parental resistance to formal education, teachers' lack of commitment to their work, large classes, poor school facilities, minimal homework given to pupils, lack of a reading culture among both teachers and pupils, and an absence of efficient leadership in schools and low attendance rates in the classroom. Nutrition, or the lack of it, has recently been recognized as an important additional factor because studies have identified undernutrition with poor school achievement (Acham et al., 2012).

Abotsi (2012) stated that children who are not hungry are more attentive and have higher cognitive abilities. Short-term hunger can adversely affect attention and interest of pupil (Levitsky, 2005). Therefore, school attendance and retention, attentiveness in class and enhancement of pupils' participation in the teaching and learning process lend credence to the expectation of improvement in academic performance. The increase in enrolment without commensurate increase in infrastructure may have a negative effect on academic performance. Some studies have indicated that schools with smaller class sizes perform better academically than schools with larger class sizes. Kraft (1994) in his research concluded that class sizes above 40 have negative effects on students' achievement.

A child's learning and performance in school are significantly influenced by their health and nutritional status. Children who do not get enough of some nutrients in their diet do not have the same learning potential as children who are healthy and well-fed. Naturally, children who have cognitive and sensory deficits perform worse and are more likely to repeat grades. One of the main causes of low performance is the inconsistent attendance of hungry and sick children in school (Uduku, 2011 as cited in Taylor, 2016). Abebe et al. (2017) came to the conclusion that undernutrition among primary school-aged children was associated with academic performance and recommended that nutritional intervention be taken into consideration in the study area.

The Education for All (EFA) Global Monitoring Report (UNESCO, as cited in Chinyoka, 2014) stated that more than a quarter of children below fifteen years of age in sub-Saharan Africa are underweight due to poor diet and malnutrition, making them more vulnerable to disease and less able to concentrate at school. Conversely, a child whose education is threatened at an early age due to hunger is likely to have worse prospects for his/her future as an adult (Mwamwenda, 2010, as cited in Chinyoka, 2014). Shrestha & Pathak (2012) and Brauw et al., (2012,) as cited in Chinyoka (2014), concurred that underfeeding in childhood was thought to hinder mental development.

According to Uduku (2011), referenced in Taylor and Ogbogu (2016), a School Feeding Program (SFP) that supports education, health, and community development while reducing hunger is most effective when combined with proper instructional resources, classroom amenities, and motivated teachers (Nyakundi, 2017). Through two major approaches, it is intended to support the education of kids who are struggling with hunger and poverty. The first concerns more engagement in and access to education (e.g. enrolment, attendance, drop-out). The second pathway entails enhanced macro- and micronutrient consumption to enhance learning capacity (such as attention and cognition) (Kristjanson et al., 2015).

McEwan (2012) reported the impacts of school feeding program. Those are the increase in enrollment, breakfast has significant effects in the short-term attention and memory of children and it could prevent and ameliorate malnutrition. Also, Abotsi (2012) cited different studies on the impact of school feeding program that have shown an increase in both gross primary school enrolment ratio (GPSER) and net primary school attendance ratio (NPSER) and an increase in school attendance rates (Ahmed, 2004; Bennett, et al., 2003; Del Rosso & Marek, 1996; Walingo & Musamali, 2008; Powell, et al., 1998).

In general, school feeding represents a more broad and complete range of applications of 127 foods for the achievement of educational achievements, according to WFP, 2004, as stated in Abotsi, (2012). The GSFP encourages parents to enroll their kids in school and make sure they go to class on a regular basis. The literature on school feeding programs in other nations and circumstances, including Ghana, supports the hypothesis that enrollment in schools with the GSFP will rise along with attendance and retention. Although there are few research on nutrition and performance, one controlled field experiment found that take-home meals and "in-school feeding programs" (SFP) had a substantial impact on math test scores (Acham et al., 2012).

According to Tabunda et al. (2016), the link between malnutrition and poor health among elementary school children and absenteeism, early dropout and poor classroom performance as well as the effectiveness of school-based nutrition and health interventions in improving school performance are well-established in most literature. To address undernutrition among public school students, the Department of Education in 2016 asked schools to establish the *Gulayan sa Paaralan* Program (GPP) "as a source of ingredients for the School-Based Feeding Program and encourage families of beneficiaries to have their own home garden for the continuous nutritional improvement at home (Lina, 2018).

The objectives of school feeding programs, according to Mhurchu et al. (2012), are to reduce short-term hunger, enhance children's nutrition and educational achievement, and transfer income to families. There is proof that these feeding initiatives benefit underprivileged children and those living in underdeveloped nations by improving their health, nutrition, and school attendance. Regarding their influence on academic attainment, the evidence is less clear, especially in high-income nations. In his study, Lawson (2012) found that the school meal program had a demonstrable effect on the kids' micronutrient levels. There is considerable evidence that it positively increases school enrollment and attendance rates, especially for girls, even though the effect on students' cognitive skills and capacities is questionable.In Shore et al. (2008), work as cited in Ross (2010), they investigated whether there were differences in school achievement between overweight and non-overweight middle school students as measured by objective school

Horca (2016) mentioned in his study that the effects of school-based feeding program have positive effects on pupils' nutritional status. 151 of 155 respondents improved their nutritional status. He also mentioned how the academic performance of the respondent is affected by the program. The average of grade one respondents was 79% before the implementation and 79.2% after the implementation. While the grade 2 improved from 70.1% to 81.4, grade three average had 78.92% before and 79.3% after, grade four from 78.4 to 78.5%, grade five from 76.06 to 77.04 and grade six from 78.01% to 796%. Overall the total average of the respondents before implementing the program was 78.42% and 79.17% after implementation. The data proved that school-based feeding program does not only affect the nutritional status of the pupils but also their academic performance.

METHODOLOGY

Research Design

This study utilized quasi-experimental research design. According to Abraham and MacDonald (2011), quasi-experimental research is similar to experimental research in a way that there is manipulation of independent variable. It differs from experimental research because either there is no control group, no random selection, no random assignment, and/or no active manipulation.

Respondents of the Study

The respondents of the study were composed of twenty (20) severely wasted pupils and forty-one (41) wasted pupils with the total of sixty-one (61) malnourished pupils. Malnourished pupils in grade one were not included and thus, no sampling method was made.

Procedure of the Study

The following steps were undertaken by the researcher in order to gather data. First, the researcher sought permission to conduct this study from the Teacher-In-Charge of Pag-itan Elementary School through a letter signed by the Research Adviser of the researcher. Upon approval, the researcher started gathering data, the first and second grading grades of the malnourished pupils. All the data gathered from the respondents were tallied, tabulated, and analyzed.

ANALYSIS, AND INTERPRETATION OF DATA

Table 1 Frequency and Percentage Distribution of the Academic Performance of the Respondents Before the School-Based Feeding Program

General Average Before the School-Based Feeding Program	Frequency	Percentage (%)
90-100	3	4.92
85-89	10	16.39
80-84	22	36.07
75-79	26	42.62
Total	61	100

Table 1 presents that range 75-79 got the highest number of respondents which is26 or 42.62 percent. Next was range 80-84 where there are 22 or 36.07 percent. Range 85-89 has 10 respondents or 16.39 percent. Lastly, the lowest number of frequency got 3 or 4.92 percent was obtained by range 90-100.

Table 2 Frequency and Percentage Distribution of the Academic Performance of the Respondents After the School-Based Feeding Program

General Average Before the School-Based Feeding Program	Frequency	Percentage (%)
90-100	5	8.20
85-89	15	24.59
80-84	20	32.78
75-79	21	34.43
Total	61	100

Table 2 shows that range 75-79 got the highest number of respondents which is21 or 34.43 percent. Next was range 80-84 where there are 20 or 32.78 percent. Range 85-89 has 15 respondents or 24.59 percent. Lastly, the lowest number of frequency got 5 or 8.2 percent was obtained by range 90-100.

After the School-Based Feeding Program, the frequency of respondents in range 75-79 and 80-84 decreased while increases in range 85-89 and 90-100.

Supporting to the statement above Taras (2005) as cited in Abiola (2016), stated that breakfast program or feeding program have positive effects on brain function and higher scholastic scores. Verbal fluency, arithmetic, attention tests, memory, creativity, endurance, and general cognitive function were found to be results of eating nutritious food.

Table 3 Significant Difference on the Academic Performances of the Severely Wasted and Wasted Pupils Before and After the School-Based Feeding Program

Respondents	Mean	SD	p-value (5%)	Decision	Interpretation
Before	81.26	4.28	0.00	Null Hypothesis Rejected	Significantly Different
After	82.18	4.50			

The mean score increased after the School-Based Feeding Program from 81.26 to 82.18. It shows slight improvement in the academic performance of the pupils.

The following authors stated and proved in their studies that there is relation between the school-based feeding programand the academic performance of the pupils.

Rashmi, Shweta, and Sequeira (2015) concluded in their study that nutritional status of the children is strongly related to their academic performance. Poor nutrition and feeding habits can significantly affect a child's academic performance. The lack of nutrients deprives a child from the energy needed to perform their activities and pay attention in class. A poor diet can also affect their biological development.

Chakraborty and Jayaraman (2016) found in their study that midday meals have a dramatic positive effect on learning achievement. Children with up to five years of primary school exposure improved their test result by approximately 10-20%.

Supporting to the statement above Taras (2005) as cited in Abiola (2016),stated that breakfast program or feeding program have positive effects on brain function and higher scholastic scores. Verbal fluency, arithmetic, attention tests, memory, creativity, endurance, and general cognitive function were found to be results of eating nutritious food.

Yunusa (2012) as cited in Taylor and Ogbogu (2016) similarly noted that students in School Feeding Program have the potential for improving their performance because it enabled them attend class regularly and study more effectively.

Nutrition is an important factor that affects the skills and learning ability of children at school. Children who do not consume adequate amount of key nutrients were unable to work to their full potential at school. Several studies revealed that low birth weight is associated with grade repetition or poor school performance (Abebe et al., 2017).

Good health and nutrition are needed for concentration, regular school attendance and optimum class performance (Levinger, 1996, as cited in Ojo, 2016).

Abotsi (2012) stated that children who are not hungry are more attentive and have higher cognitive abilities. Therefore, school attendance and retention, attentiveness in class and enhancement of pupils' participation in the teaching and learning process lend credence to the expectation of improvement in academic performance.

FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Summary of the Findings

Based on the discussion and interpretation of data, the researcher presented the derived findings the grades' mean of the malnourished pupils before conducting the school-based feeding program was 81.26. The grades' mean of the malnourished pupils after conducting the school-based feeding program was 82.18. The p-value is 0. It means that the null hypothesis which states that there is no significant difference between the grades of the pupils before and after conducting the School-Based Feeding Program, was accepted.

Conclusions

Based on the findings, the researcher came up with the following conclusions before the implementation of School-Based Feeding Program, the grades of the malnourished pupils were low due to lack of nutrients inside their body and brain. After the implementation of the School-Based Feeding Program, only few of the malnourished pupils increased their grade, some just retained their previous grades. There is no significant difference between the grades of the pupils before and after conducting the School-Based Feeding Program. Although, some of the pupils improved their grades, the improvement does not consider as significant enough.

REFERENCES

Abebe, F., Geleto A., Sena., L., & Hallu, C., (2017) Predictors of Academic Performance With Due Focus on Undernutrtition among Students Attending Primary Schools of Hawa Gelan District, Southwet Ethiopia: A School Based Cross Sectional Study. 3:30 doi 10.1186/s40795-017-01382

Aberlaez, M.A. (2018). 6 Causes of Poor Academic Performance at School. https://youaremom.com/parenting/causes-poor-academic-performance-school/

Abotsi A. K. (2012). Expectations of School Feeding Programme: Impact on School Enrolment, Attendance, And Academic Performance In Elementary Ghanaian Schools SDI Paper Template Version 1 1.6 Date 11.10.2012

Adolphus, K., Lawton C. Dye L. (2013). The Effects of Breakfast On Behavior And Academic Performance In Children And Adolescents. Front. Hum. Neurosci., 08 August 2013 | https://doi.org/10.3389/fnhum.2013.00425

Ahmed, A. U. (2004). Food-for-Education Programme with Locally Produced Food: Effects on Farmers and Consumers in Sub-Sahara Africa. Washington D.C: International Research Food Policy Institute.

Brauw, A., Meenakshi, J. & Gilligan, D. 2012. Introduction Of Beta-Carotene-Rich Orange Sweet Potato in Rural Uganda Resulted In Increased Vitamin A Intakes Among Children and Women And Improved Vitamin A Status Among Children. Journal of Nutrition, 142 (6): 1871-1880.

Brown, J. L., Beardslee, W. H., and Prothrow-Stith, D. (2008). Impact of School Breakfast On Children's Health And Learning: An Analysis Of The Scientific Research. Retrieved from The Sodexo Foundation website: http://www.sodexofoundation.org/hunger_us/Images/Impact%20of%20School%20Breakfast%20Study_tcm150-212606.pdf

Chakraborty, T. & Jayaraman R. (2016), School Feeding and Learning Achievement: Evidence from India's Midday Meal Program. IZA Discussion Paper 10086 https://ideas.repec.org/p/iza/izadps/dp10086.html

Chinyoka K. 2014, Impact of Poor Nutrition on the Academic Performance of Grade Seven Learnes: A Case of Zimbabwe, Vol. 4, No. 3 https://www.researchgate.net/publication/287705283

Chinyoka, K. & Naidu, N. 2013. Uncaging the Caged: Exploring the Impact of Poverty on the Academic Performance of Form Three Learners in Zimbabwe. International Journal of Educational Sciences, 6:203- 213.

DepEd Order No. 39, s. 2017 www.deped.gov.ph/2017/08/07/do-39-s-2017-operational-guidelines-on-the-implementation-of-school-based-feeding-program-for-school-years-2017-2022/

Ecker, O. & Nene, M. (2012). Nutrition Policies in Developing Countries: Challenges and Highlights. Policy Note 1. Washington DC, International Food Policy Research Institute.

Health: First published as 10.1136/jech-2012-201540 on 6 October 2012. Downloaded from http://jech.bmj.com/ on 20 November 2018

Horca Joefel (2016). School Based Feeding Program: It's Impact on the Academic Performance of Severely Wasted Pupils of Southville Elementary School S. Y. 2015-2016.

Kraft, R. J. (1994). Teaching and learning in Ghana. Boulder, CO: Mitchell Group.

Kristjansson E. A., Gelli, A., Welch, V., Greenhakgh T., Liberato, S., Francis, D., Espejo F. (2015). Cost, And Cost Outcome of School Feeding Programmes And Feeding Programmes For Young Children. Evidence and Recommendations. International Journal of Education Development. www.elsevier.com/locate/ijedudev

Lawson, Ty M. (2012), Impact of School Feeding Programs on Educational, Nutritional and Agricultural Development Goals: A systematic Review of Literature. https://ageconsearch.umn.edu//record/142466/

Levitsky, D. A. (2005). The future of school feeding programmes. Food and Nutrition Bulletin 26, 286-87.

Lina, J. (2018), Malnutrition; A Gnawing Crisis Needing Urgent Action, https://www.pressreader.com/[hilippnies/manila-bulletin/20180417//281754154911012

McEwan. P. J. (2012). The impact of Chile's school feeding program on education outcomes. www.elsevier.com/locate/edurev

Mhurchu CN, Gorton D, Turley M., Yannan J., Minchie J., Maddison R., Hattie J. (2012) Effects of a Free School Breakfast Programme on Children's Attendance, Academic Achievement and Short-Term Hunger: Results from a Stepped-Wedge, Cluster Randomised Controlled Trial J Epidemiol Community

Mwamwenda, TS. 2010. Educational psychology: An African Perspective. Durban: Heinemann.

Nyakundi, EM (2017) Influence of School Feeding Program in Pupils' Retention in Public Primary Schools in Dagoretti South Sub-County, Nairobi ounty, Kenya

Ojo, Yetunde Abiola (2016), Nutrition and Cognition in School-Aged Children: A Brief Review INTERNATIONAL JOURNAL OF EDUCATIONAL BENCHMARK (IJEB), eISSN: 2489-0170 pISSN:2489-4162 University of Uyo

Ross, A. (2010). Nutrition and its effect on academic performance how can our school improve?

Sampson, A., Dixit, S., Meyers, A., & Houser, R. (1995). The Nutritional Impact Of Breakfast

Sandler, J. (2011). Reframing the Politics of Urban Feeding in U.S. Public Schools, Parents, Programs, Activists, and The State. In S.A. Robert & M.B. Weaver-Hightower (Eds.), School Food Politics, The Complex Ecology of Hunger and Feeding In Schools Around The World. Peter Lang Press

Save the Children. 2012. A Life Free from Hunger: Tackling Malnutrition. New York: United Nations. systems network (FEWS NET). 2010

Shore, S., Sachs, M., Lidicker, J., Brett, S., Wright, A., & Libonati, J. (2008). Decreased scholastic achievement in overweight middle school students. Obesity, 16, 1535-1538.

Shrestha, I. & Pathak, L. 2012. A Review of the National Health Policy 1991. Katmandu: Ministry of Health and Population.

Stevens, G., Finucane, M., Paciorek, C., Flaxman, S., White, R., Donner, A. & Ezzati, M. (2012.) Trends in Mild, Moderate, and Severe Stunting And Underweight, And Progress Towards MDG 1 In 141 Developing Countries: A Systematic Analysis Of Population Representative Data. Lancet, 380(7):824-834.

Tabunda A.M. L., Albert J. R. G., Agdeppa I. A. (2016), Results of an Impact Evaluation Study on DEPEd's School Based Feeding Program.

Taras, H. 2005. Nutrition and Student Performance at School. Journal of School Health, 75(6). 199-213. https://people.uwec.edu/ (accessed on December 16, 2015)

Taylor A. & Ogbogu C.(2016) The Effects of School Feeding Programme on Enrollment and Performance of Public Elementary Pupils in Osun State, Nigeria World Journal of Education Vol.6, No. 3, 2016 www.sciedu.ca/journal/index.php/wje/article/view/8862

Uduku. (2011). School Building Design for Feeding Programme and Community Outreach: Insights from Ghana and South Africa. International Journal of Educational Development, 31, 59–66. http://dx.doi.org/10.1016/j.ijedudev.2010.06.005

UNESCO. 2011. EFA Global Monitoring Report 2011: The Hidden Crisis: Armed Conflict. Paris: UNESCO.

UNICEF, (2013). Inequalities in Early Childhood Development: What the Data say-Evidence from the Multiple Indicator Cluster Surveys. New York: UNICEF

United Nations Children's Fund, the World Health Organization and World Bank Group (UNICEF) (2017) Levels and Trends in Child malnutrition Joint Child Malnutrition Estimates 2017 edition

USAID & WFP (2010) Ethiopia food security outlook update, Famine Early Warning

Villenas R. (2018) Research Methods and Data Analysis

WFP. (2004). Global School Feeding Report.

www.academia.edu/29404390/School_Based_Feeding_Program_It's_Impact_on_the_Academic_Performance_of_Severely_Wasted_Pupils_of_Southville_Elementary_School_S._Y._2015_2016

Yunusa, I., Gumel, A.M., Adegbusi, K., & Adegbusi, S. (2012). School Feeding Programme in Nigeria: A Vehicle for Nourishment of Pupils. The African Journal, 12(2), 53-67.