

Dietary Diversity of *Pantawid Pamilyang Pilipino* Program Beneficiary and Non-beneficiary Households in Selected Barangays in San Pablo City, Laguna, Philippines

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ABSTRACT

Objectives. The study aimed to analyze the household dietary diversity of beneficiary and non-beneficiary households of *Pantawid Pamilyang Pilipino* Program (4Ps) in selected barangays in San Pablo City, Laguna, Philippines and determine the nutritional status of children (6-60 months old) within these households.

Methods. Household dietary diversity score (HDDS) was used as an indicator for the households' dietary diversity. The nutritional status of children was determined using anthropometric data from the Barangay Health Centers. A total of 270 households was randomly selected through stratified random sampling with equal allocation.

Results. Findings showed that beneficiary households had higher HDDS compared to the non-beneficiary households. The results also suggest that beneficiary households with larger household size, higher income, who were living in rural areas and who have female as well as more educated financial managers, tend to have a more diverse diet. On the other hand, a higher prevalence of malnutrition was observed among children in beneficiary households.

Conclusion. Beneficiary households of 4Ps had better diet quality in terms of diversity than non-beneficiary households. However, the advantage of having a more diverse diet has not fully addressed the malnutrition problem among children as it was still widely prevalent in beneficiary households.

Key Words: *Pantawid Pamilyang Pilipino* Program, Conditional Cash Transfer Programs, Household Dietary Diversity, Child Nutrition

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Introduction

Conditional Cash Transfer (CCT) Programs are described as programs that aim to alleviate poverty through monetary and in-kind benefits, as well as to reduce future incidence of poverty by encouraging investments in education, health and nutrition.¹ CCT Program schemes include the provision of cash directly to poor households on the condition of fulfilling specific requirements such as minimum attendance of children in school, and/or attendance at health clinics, participation in immunization, and the like.²

CCT Programs can affect nutrition through more than one way. Aside from the cash transfer that can be translated to increased food expenditures, CCT Programs also provide workshops and trainings, which include topics on dietary diversity and behavioral change for nutrition. These are often required in order to receive cash transfers. In short, the increase in income, with increased nutrition awareness, directly reduces poverty and food insecurity resulting to improved dietary diversity.³

With its success in other countries, the Philippine government adopted a similar CCT Program through the leadership of the Department of Social Welfare and Development (DSWD) called the *Pantawid Pamilyang Pilipino* Program or 4Ps.⁴ This program aims to alleviate the immediate needs of the poorest of the poor by providing cash assistance, and to break the intergenerational poverty cycle by investing in their education, health and nutrition. Furthermore, it aims to help fulfill the country's commitment to meeting some of the Millennium Development Goals (MDG), which include: eradicating extreme poverty, achieving universal primary education, promoting gender equality, reducing child mortality, and improving maternal health.⁵

The beneficiary households are identified based on the National Household Targeting System for Poverty Reduction or NHTS-PR.⁵ These households are given Php6,000 annually (Php500 per month) for their health and nutrition expenses. For education expenses, the program

provides Php3,000 per child for one school year (i.e., 10 months). Each beneficiary household can only receive educational grant for up to a maximum of three children.⁶ For households with 15-17 years old, the program is providing social assistance in the form of educational grant only. The cash grant was increased from Php300 to Php500 per child considering that children often need to go to the city/municipal main proper where the high school facility is most often located.⁷

In order to receive the program package, applicant-households should be able to comply with the health grant conditionalities of the program such as the availment of government services specifically the following: children 5 years old and below must visit the health centers regularly to receive preventive health check-ups and vaccines; and the 6 to 14-year-old children must receive deworming pills twice a year. On the other hand, the education grant conditionalities are: 3- to 5-year-old children must attend day care or pre-school classes and 6- to 14-year-old children to enroll in elementary or high school at least 85% of the time. Meanwhile, pregnant women must avail of pre- and post-natal care and be attended to during childbirth by a trained health professional. Lastly, the parents must attend the Family Development Sessions (FDS) at least once a month.⁵

Household dietary diversity is often used to assess the magnitude of household food insecurity. It has been observed that children in households with low dietary diversity are prone to malnutrition.⁸ Therefore, increasing the economic ability of a household to access a variety of foods may improve the nutritional status among young children.

In this context, this study aimed to analyze dietary diversity of the beneficiary households of 4Ps by comparing it to the non-beneficiary households in San Pablo City, Laguna, Philippines. The factors associated with the dietary diversity of the beneficiary and non-beneficiary households were also described. Furthermore, the nutritional status of children (6-60 months old) among the beneficiary and non-beneficiary households were also determined. The findings of this study would be helpful in improving the strategies of the program, especially in the aspect of nutrition, in the area.

Methods

The study was conducted in selected barangays San Pablo City, Laguna, Philippines. These barangays were chosen based on the number of beneficiary and non-beneficiary households. The beneficiary households were those who were qualified and enrolled in the 4Ps, while non-beneficiary households were those who were qualified but were not enrolled in the program. The 10 barangays with the most number of beneficiary and non-beneficiary households were chosen; five barangays were chosen from urban areas and five from rural areas. Stratified random sampling with

equal allocation among the strata was employed in the study. The population consisted of 1,262 households; 1,041 of which were beneficiary households and 221, non-beneficiary households of the program. Of the 1,262 households, a sample size of 270 was derived using the formula below by setting alpha to 5% and p to 0.5:

$$n = \frac{NPQ}{[N - 1][CV(P)P]^2 + PQ}$$

where n is the sample size, N is the population size, P is the probability of success, Q is the probability of failure and CV is the coefficient of variation. From the sample size of 270, 135 respondents were selected from beneficiary households and the other 135 from the non-beneficiary households. The respondents were randomly selected from the list of households in each group.

The Household Dietary Diversity Score (HDDS) questionnaire was used to measure the diet diversity of the households. It is a tool used to determine the number of food groups consumed by the household over the preceding 24 hours. It includes 12 food groups, namely: cereals; root and tubers; vegetables; fruits; meat, poultry, offal; eggs; fish and seafood; pulses/legumes/nuts; milk and milk products; oil/fats; sugar/honey and others. The score then serves as an indicator that reflects the economic ability of a household to access a variety of foods.⁹

Descriptive analysis was used to determine the average HDDS of the two groups. This was also used to determine the average HDDS of each group based on their location and the gender of the financial manager. The HDDS of the beneficiary and non-beneficiary households were then compared using t-test for independent samples. Moreover, the study used some statistical tests to determine the correlation between HDDS with the socio-economic and demographic characteristics of the two groups. Pearson correlation coefficient was employed for continuous and discrete quantitative variables, while Eta correlation coefficient (nominal) and Spearman correlation coefficient (ordinal) for qualitative variables.

For the anthropometric measurements of the children ages 6-60 months, data on their height and weight were obtained from the Barangay Health Centers which monitored the growth of the children. Although the anthropometric data are considered as secondary data, it is a direct measurement of the nutritional status of the children. Furthermore, the data were generated by trained Barangay Nutrition Scholars (BNS) whose main function includes measuring the height and weight of children on a regular basis. The WHO Child Growth Standard (CGS) was used in determining the nutritional status of the children.¹⁰ Descriptive analysis, particularly frequency statistics, was also used in describing the nutritional status of the children ages 6-60 months among the beneficiary and non-beneficiary households.

Results and Discussion

The beneficiary households had an average household dietary diversity score (HDDS) of 7.79 while non-beneficiary households had a HDDS score of 7.49. Results indicated that the HDDS of the beneficiary households was significantly higher (p-value=0.036) than the non-beneficiary households. As the HDDS reflects the economic ability of a household to access a variety of foods, this result suggests that beneficiary households have higher economic access to food and are less food insecure than the non-beneficiary households.⁹ It seems that with additional income through the *Pantawid Pamilya*, the beneficiary households can now avail of more diverse food as compared to the non-beneficiary households. Improved quality of food consumption of CCT program beneficiary households has also been observed in other countries. In Colombia, for example, there has been an increased consumption on items rich in protein, such as milk, meat, and eggs among the beneficiary households of their CCT program, the *Familias en Acción*.¹¹ On the other hand, upon assessing the impact of CCT programs on the diet quality of beneficiary households in countries like Honduras, Mexico and Nicaragua, it was observed that the program significantly led to improvements in the composition of their diet.¹²

The association of HDDS to the different socio-economic and demographic characteristics of the respondents were identified using correlation analysis (Table 1). Results showed that household size (p-value=0.062), income (p-value=0.000), location (p-value=0.000), and the gender (p-value=0.000) and educational attainment (p-value=0.000) of the financial manager of the beneficiary households were all significantly and positively associated with HDDS. This implies that households who live in rural areas (average HDDS: 7.99) and have a female financial manager (HDDS: 7.91) in the household tend to have higher HDDS as compared to urban areas (average HDDS: 7.35) and have a male financial manager (HDDS: 6.11). However, the degree of association of HDDS of beneficiary households with income (coefficient=0.152), location (coefficient=0.151) and the educational attainment of financial manager (coefficient=0.139) was very weak and in the case of gender of the financial manager (coefficient=0.230), weak.

Table 1. Association of HDDS and the Different Characteristics of the Beneficiary and Non-Beneficiary Households

Characteristics	Beneficiary household		Non-beneficiary household	
	Coefficient	p-value	Coefficient	p-value
Household Size ¹	0.058	0.062*	-0.185	0.006*
Income ¹	0.152	0.000*	-0.061	0.368
Location ²	0.151	0.000*	0.270	0.000*
Financial Manager				
Gender ²	0.230	0.000*	0.083	0.412
Educ. Attainment ³	0.139	0.000*	0.224	0.000*

¹ Pearson correlation coefficient

² Eta correlation coefficient

³ Spearman's correlation coefficient

*at 10% level of significance

On the other hand, household size (p-value=0.006), location (p-value=0.000) and educational attainment (p-value=0.000) of the financial manager of the household were found to be significantly associated with the HDDS of the non-beneficiary households. Household size had a negative (coefficient=-0.185) association with HDDS while location had a positive (coefficient=0.270) association with HDDS. The latter result implies that non-beneficiary households who live in rural areas (average HDDS: 7.84) tend to have higher HDDS as compared to those in the urban areas (average HDDS: 6.63). Lastly, the educational attainment of the financial manager of the household had a positive (coefficient=0.224) association with HDDS of the non-beneficiary households. It should be noted however that the relationship of HDDS with the household size of the non-beneficiary households was very weak (coefficient=-0.185) whereas, it was weak for both location (coefficient=0.270) and educational attainment (coefficient=0.224) of financial manager.

As cited earlier, there is a negative correlation between HDDS of the non-beneficiary households and household size. Non-beneficiary households with larger households were observed to have lower HDDS. As expected, larger households consume poorer quality diets than those with smaller household size. This may be due to the inadequacy of their resources to support a large household size.¹³ Furthermore, the implication of having a large family on food security is that there will be lesser food available to each person within the household.¹⁴

On the other hand, it is interesting to note that beneficiary households with larger household size had higher HDDS. Household size usually has a negative effect on the diet quality of the households. However, household size can also have a positive impact on food security and dietary quality when there are more diversified income sources.¹⁵ This may have been the case of the beneficiary households in the study, who aside from receiving cash transfers from the program may have also utilized for their food requirements other usual income, such as their salaries, gifts from relatives, and revenues from other income-generating activities (e.g. crop farming and gardening, fishing, *sari-sari* store and market vending, and providing contract services for the construction or repair of a house or any structure and transportation services such as operation of jeepney and tricycle).

Further, the HDDS of the beneficiary households was found to be significantly and positively associated with their household income. Generally, high-income households have been found to have a higher dietary diversity, while low-income households, a lower dietary diversity.¹⁶ Households with lower income tend to buy less meat, dairy products, fruits and vegetables. This purchasing pattern of low-income households leads to a less varied diet as compared to households with higher income.^{17,18} Moreover, fruits and vegetables are considered as an expensive source of energy for low-income households.¹⁸

On the other hand, there was a negative but non-significant association between the HDDS of the non-beneficiary households and their household income. Although the derived correlation coefficient (-0.061) suggests that low-income households have higher HDDS than higher-income households, the p-value (0.368) implies that there was no significant difference between their HDDS. This is probably due to lack of nutrition knowledge, which can also influence the household food acquisition.¹⁹ Unlike the beneficiary households, the non-beneficiary households were not trained about food and nutrition. Thus, when some households have a higher income, their dietary diversity turned out to be just the same as those with low income.

Another factor which was positively associated to HDDS of the two groups was location. For both groups, findings showed that households living in rural areas have more access to a variety of food than those who live in urban areas. This implies that beneficiary households living in urban areas are more prone to food insecurity as compared to those in rural areas. Perhaps, this may be due to the food prices which are often higher in urban areas than in rural areas.^{20,21} Also, even though urban settlers generally have greater access to a more diverse array of both domestic and imported food, it does not necessarily mean that it can be translated into increased dietary consumption.²²⁻²⁴ Thus, those who are living in urban areas become more vulnerable to food insecurity.²⁵

The study of Smith and Miller that explored the food system in urban and rural communities could further shed light on why households living in rural areas have more access to a variety of food than those who live in urban areas. The findings showed that urban residents relied more on retail grocery stores whereas the residents in rural areas, aside from buying food from retail grocery stores, also had gardening, hunting, and informal food exchange systems as their other food sources. The results revealed that these activities may contribute valuable nutrients to the diet of the rural communities.²⁶

The gender of the financial head or manager in the household was also found to be associated with HDDS of the beneficiary households. The average HDDS of beneficiary households with female financial managers was higher than those with male financial managers. The results imply that beneficiary households with female financial managers had a more diverse diet compared to those beneficiary households who had male managers. It is a fact that men and women spend money differently. Women are likely to spend the income they control on food, health care and education of their children.²⁷ Furthermore, women are usually responsible for food preparation. Women also select food to purchase by considering which will complement their staple foods and balance the household's diet.²⁸ Thus, women can be considered as more crucial to attaining dietary diversity in households.

Moreover, being a beneficiary household decreases the probability of male in the household as the sole decision in terms of household expenditures. In fact, over time, men are less likely to make decisions by themselves. There is a tendency that women in CCT program beneficiary households will become the sole decision maker on the use of their household's extra income.²⁹ This shift in pattern on decision-making, as most evidences show, may have positive effects on household food security.³⁰ This probably explains why the gender of the financial manager in the household is only associated with HDDS among beneficiary households but not in non-beneficiary households. Possibly, in non-beneficiary households, although the women may handle the finances, the decision-making still lies among men or the husbands.

Lastly, the HDDS of the two groups was positively associated with the educational attainment of the financial manager in the household. This implies that the more educated the financial manager, the more diverse the diet of the household becomes. This positive association of education to the quality of the diet in the household may be attributed to an educated person's greater awareness of the importance of nutrition, the ability to better understand nutrition knowledge as well as put the knowledge into practice.¹⁸

As for the nutritional status of the children, Table 2 summarizes the percentage distribution of the nutritional status of 6- to 60-month-old children among the beneficiary and non-beneficiary households in terms of weight-for-age, length/height-for-age, weight-for-length/height and BMI-for-age.

Table 2. Percentage Distribution Based on the Nutritional Status of 6-60 Months Old Children among Beneficiary and Non-Beneficiary Households

Nutritional status	Beneficiary	Non-beneficiary
<i>Weight-for-age</i>		
Normal	69.8	75.8
Underweight	22.6	16.7
Severely underweight	7.5	7.6
<i>Length/height-for-age</i>		
Normal	42.9	53.1
Stunted	11.4	18.8
Severely stunted	45.7	28.1
<i>Weight-for-length/height</i>		
Obese	28.0	14.3
Overweight	12.0	7.1
At risk of overweight	16.0	14.3
Normal	36.0	53.6
Wasted	4.0	7.1
Severely wasted	4.0	3.6
<i>BMI-for-age</i>		
Obese	25.7	15.2
Overweight	28.6	9.1
At risk of overweight	11.4	15.2
Normal	25.0	39.4
Wasted	7.0	6.1
Severely wasted	28.6	15.2

Results showed that based on weight-for-age, children among beneficiary households (30.1%) had a higher percentage of underweight and severely underweight cases combined, compared to children among non-beneficiary households (24.3%). On the other hand, children among beneficiary households (57.1%) also had a higher percentage on stunting and severe stunting cases combined, compared to non-beneficiary households (46.9%) based on length/height-for-age. Moreover, based on weight-for-length/height and BMI-for-age, the children among beneficiary households (40.0% and 34.4%, respectively) had a higher percentage of obese and overweight cases combined, compared to children among non-beneficiary households (21.4% and 24.3%, respectively).

Furthermore, there was also a higher percentage of wasting and severe wasting cases combined among the children of beneficiary households (35.6%), compared to non-beneficiary households (21.3%) based on BMI-for-age. However, children among beneficiary households (8.0%) also had a lower percentage of wasting and severe wasting cases combined, compared to non-beneficiary households (10.7%) based on weight-for-length/height.

Given the cash transfer from *Pantawid Pamilya*, coupled with the effective parenting and counselling sessions as well as weight monitoring of children, beneficiary households were expected to use the cash for the betterment of the nutritional status of their families, especially their children. However, the results suggest that there is a higher prevalence of malnutrition (except for wasting and severe wasting cases combined based on weight-for-length/height) among children in beneficiary households compared to non-beneficiary households. This result implies that despite the implementation of the program in the area, there are still nutrition-related problems among children, especially in beneficiary households, which need to be addressed. Perhaps, employing strategies that could complement the cash transfers can help address these problems. Combining cash transfer with nutritious supplementary food may be a more effective way of preventing acute malnutrition than strategies relying on either cash transfer or nutritious supplementary food alone.³¹ Furthermore, intensifying the current nutrition-related conditionalities that require participation of beneficiary households in nutrition education and workshops may help reduce child malnutrition. The nutrition education and workshops may include topics that can help increase maternal knowledge and improve practices related to the proper child care and feeding practices, sanitation and food safety.³² These are some of the aspects that, if focused on, can contribute to the arresting of stunted growth incidence among children.³³ Thus, employing these strategies may help ensure food and nutrition security among beneficiary households, which can in turn lead to the improved nutritional status of children.

Conclusion

Beneficiary households turned out to have higher HDDS compared to the non-beneficiary households. The HDDS of the two groups was found to be associated with household size, location and the educational attainment of the financial manager. In addition, income as well as the gender of the financial manager of the beneficiary households were also found to be associated with their HDDS. These findings suggest that the beneficiary households tend to have a more diverse diet as household size and income increase. The findings also imply that those who live in rural areas are inclined to have higher household dietary diversity than those who live in urban areas. Moreover, households with female as well as more educated household heads (i.e., financial managers) tended to have a more diverse diet than the male-headed households and households with less educated heads.

For the nutritional status of the children (6 to 60 months old), the results suggest that there is a higher prevalence of malnutrition (except for wasting and severe wasting cases combined based on weight-for-length/height) among beneficiary households. These results imply that there are still nutrition problems among children, especially in beneficiary households, that need to be addressed.

In conclusion, beneficiary households of 4Ps had better diet quality in terms of diversity than non-beneficiary households. However, the advantage of having a more diverse diet has not fully addressed the malnutrition problem among children as it was still widely prevalent in beneficiary households. Perhaps, exploring and integrating other strategies such as combining cash transfer with nutritious supplementary food and intensifying the current nutrition-related conditionalities of the program may help improve the nutritional status of the children.

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Statement of Authorship

All authors have approved the final version submitted.

Author Disclosure

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