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Gen. Santos Avenue, Bicutan, Taguig, Metro Manila, Philippines

## Abstract

The co-existence of dual forms of malnutrition in the Philippines is becoming an emerging problem. Previous study revealed that the prevalence of underweight child with an overweight mother in a selected urban poor community was 8.2 %.

The aim of this present study is to explore and determine the prevalence of the co-existence of underweight child with overweight mother living in an urban rich community and identifies the factors that may influence its existence in one family.

The study took place in Makati City, the commercial center in Metro Manila. The first phase of the study was an anthropometric survey of mothers with children aged 2 - 6 years old. A total of 653 mothers and 841 children were measured. Anthropometric indices used were: WAZ<-2SD for underweight, WAZ-2SD to <+2SD for normal and WAZ $\geq$+2SD for overweight among children. Among mothers, BMI $\geq$ 25 kg/m$^2$ was considered overweight while BMI < 18.5 kg/ht m$^2$ was considered as chronic energy deficiency (CED). Results showed that there were 213 (33%) mothers who were overweight and 53 (8%) were suffering CED. Among children, the prevalence of underweight was 24% (199) while overweight was 3% (24). The percentage of overweight mothers with underweight child was 18% or 49 mother -child pairs.

The second phase of the study was an in-depth study of the 49 over/underweight mother-child pairs and 53 randomly selected normal/normal pairs. Pre-tested questionnaires were used to gather socio-economic-demographic data, and mother's perception on body size; food intake using a 2-day 24-hr food recall and food behavior. Physical activity was assessed using calibrated pedometers .

Results showed that the different factors influencing the existence of over/underweight or normal/normal status in one family were: the number of livebirths in the family, availability of refrigerator, percentage adequacy of nutrient intakes of both mother and child; mother's perception of her own body size and her child's body size; preference of cookies, biscuits with cream among mothers; child's preference of kropeck and chips; consumption of milk; mothers' practice on eating the plate waste of their children; the practice of eating streetfoods. Further analysis on the factors that measure the characteristics on which the two groups are expected to differ revealed the following: mother's perception on her body size and her child's body size, mean carbohydrate intake of the mothers, and energy adequacy of the child.

The problem of over/undernutrition in one family poses enormous challenges. The results indicated the need to package nutrition messages and intensify nutrition education efforts to address both overweight among mothers and underweight among children.

Keywords: overweight, underweight, one family, urban rich community.

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Keywords: overweight, underweight, one family, urban rich community.

Table 6. Mean one-day per capita energy and nutrient intake among mothers

| Variables | Group UC/OM | Group NC/NM | Mean diff. | P |
|---|---|---|---|---|
| | Mean (±SD) | Mean (±SD) | | |
| Energy (kcal) | 2443 (±1107) | 1737 (±574) | 705 | .000 |
| Protein (g) | 80.1 (±32.4) | 61.9 (±21.9) | 18.2 | .001 |
| Fats (g) | 66 (±50) | 48 (±27) | 17.9 | .031 |
| Carbohydrates (g) | 380 (±152) | 262 (±85) | 117 | .000 |
| Calcium (mg) | 377.9 (±194.5) | 329.3 (±156.3) | 48.7 | .165 |
| Iron (mg) | 11.3 (±4.6) | 8.8 (±3.5) | 2.4 | .003 |
| Vitamin A (µg/RE) | 443.3 (±376.0) | 501.4 (±895.0) | -58.1 | .675 |
| Ascorbic Acid (mg) | 36.2 (±38.4) | 37.1 (±35.8) | -0.8 | .907 |
| Thiamin (mg) | 1.4 (±0.8) | 1.5 (±1.3) | -0.1 | .784 |
| Riboflavin (mg) | 0.8 (±0.4) | 0.7 (±0.3) | 0.1 | .061 |
| Niacin (mg NE) | 26.8 (±11.9) | 20.0 (±7.4) | 6.8 | .001 |

Table 7. Most preferred snacks by children and mothers and reasons of preference

| Foods | Group UC/OM | | Group NC/NM | |
|---|---|---|---|---|
| | No. | % | No. | % |
| Children | | | | |
| Bread | 41 | 49 | 42 | 51 |
| Carbonated beverage | 15 | 48 | 16 | 52 |
| Kropeck and chips [1] | 20 | 67 | 10 | 33 |
| Mothers | | | | |
| Bread | 44 | 48 | 48 | 52 |
| Carbonated drinks | 20 | 51 | 19 | 49 |
| Cookies and biscuits [1] | 8 | 31 | 18 | 70 |
| Reasons of preference | | | | |
| Like the taste | 32 | 46 | 38 | 54 |
| Good health | 8 | 53 | 7 | 47 |
| Affordable & accessible | 5 | 50 | 5 | 50 |

[1] *P < 0.05*

Table 6. Mean one-day per capita energy and nutrient intake among mothers

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Table 8. Types of street foods usually eaten by children and mothers

| Foods | Group UC/OM | | Group NC/NM | |
|---|---|---|---|---|
| | No. | % | No. | % |
| Children | | | | |
| Banana cue | 34 | 52 | 32 | 48 |
| Squidballs | 27 | 56 | 21 | 44 |
| Kropeck and chips | 13 | 41 | 19 | 59 |
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| Squidballs | 23 | 55 | 19 | 45 |
| Kikiam | 17 | 44 | 22 | 56 |
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Table 9. What to do with plate waste

| Practice | Group UC/OM (n=49) | | Group NC/NM (n=63) | |
|---|---|---|---|---|
| | No. | % | No. | % |
| Mother will eat it [1] | 32 | 66 | 15 | 28 |
| Give to pets | 4 | 8 | 16 | 30 |
| Throw away | 5 | 10 | 12 | 23 |
| Fed to other siblings/father | 4 | 8 | 5 | 10 |
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| Total | 49 | 100 | 53 | 100 |

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Table 10. Discriminating factors between groups

| Variables | Coefficients |
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| Mother's perception on her own body size | -0.346 |
| Mean carbohydrate intake of mother | -0.650 |
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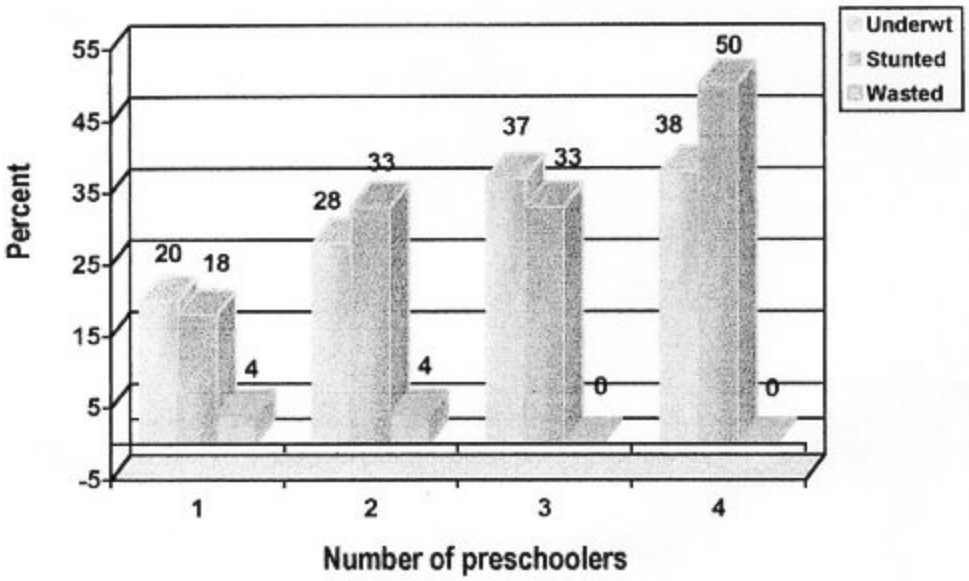



Figure 1. Rates of undernutrition by number of preschoolers

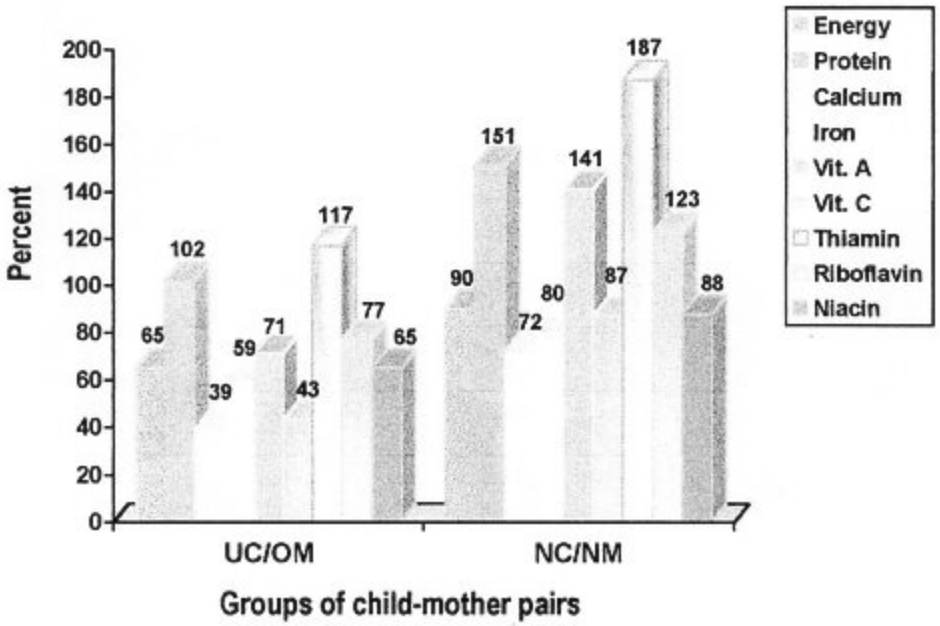
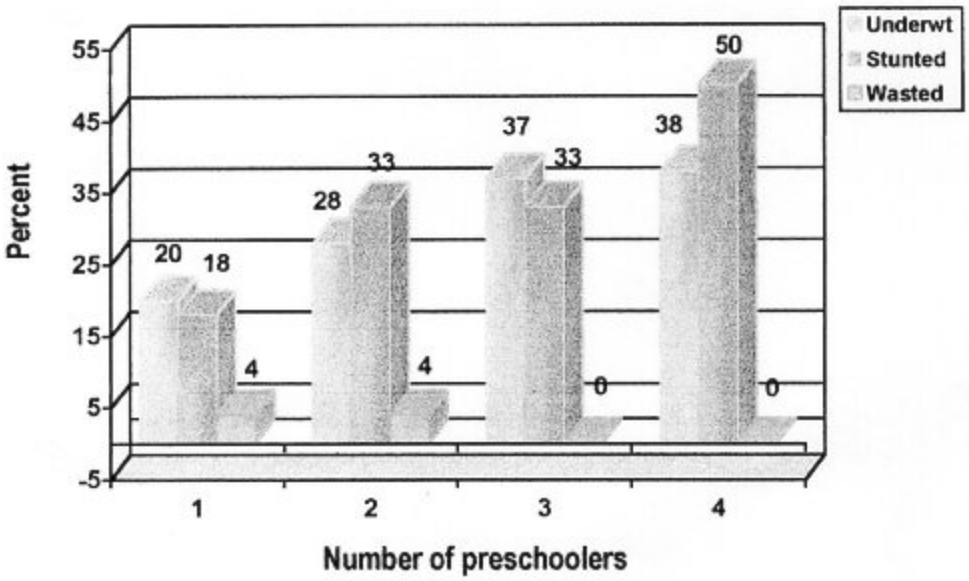



Figure 2. Percent adequacy of nutrient among children

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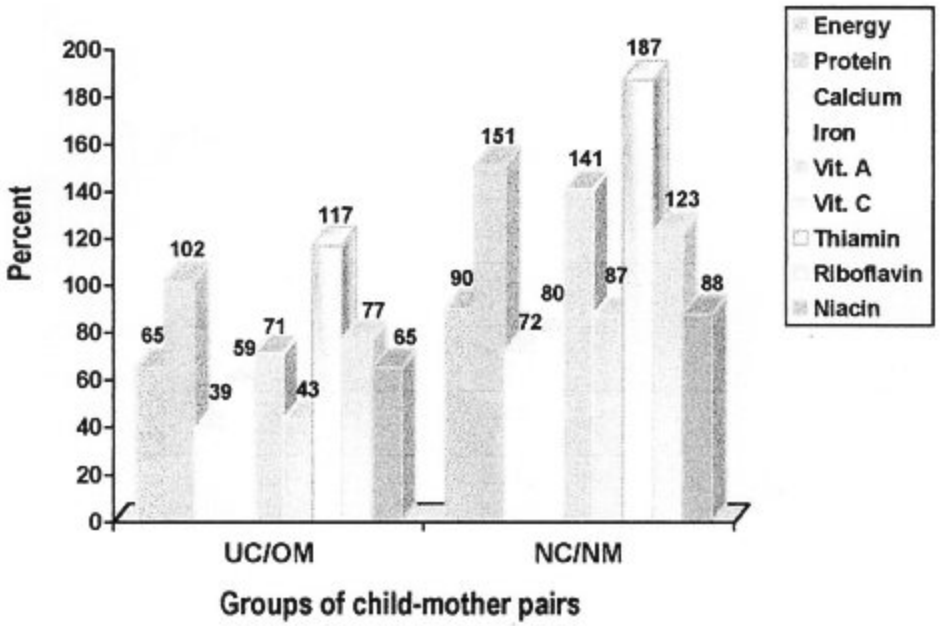


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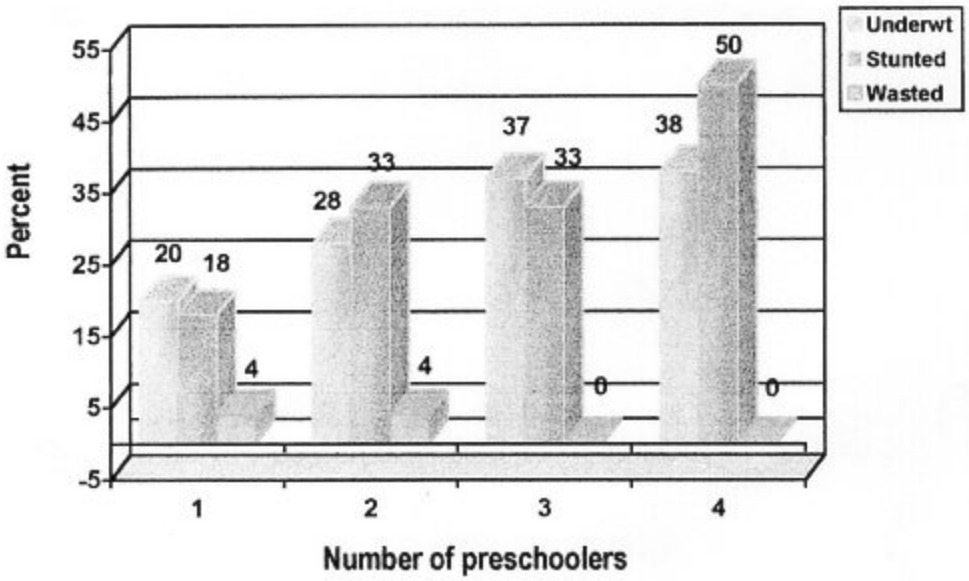


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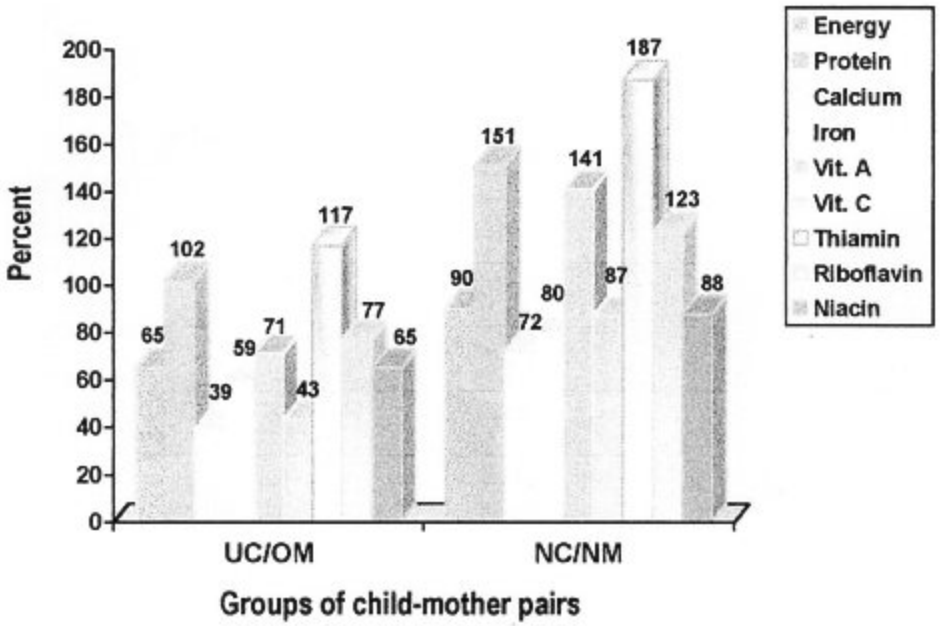


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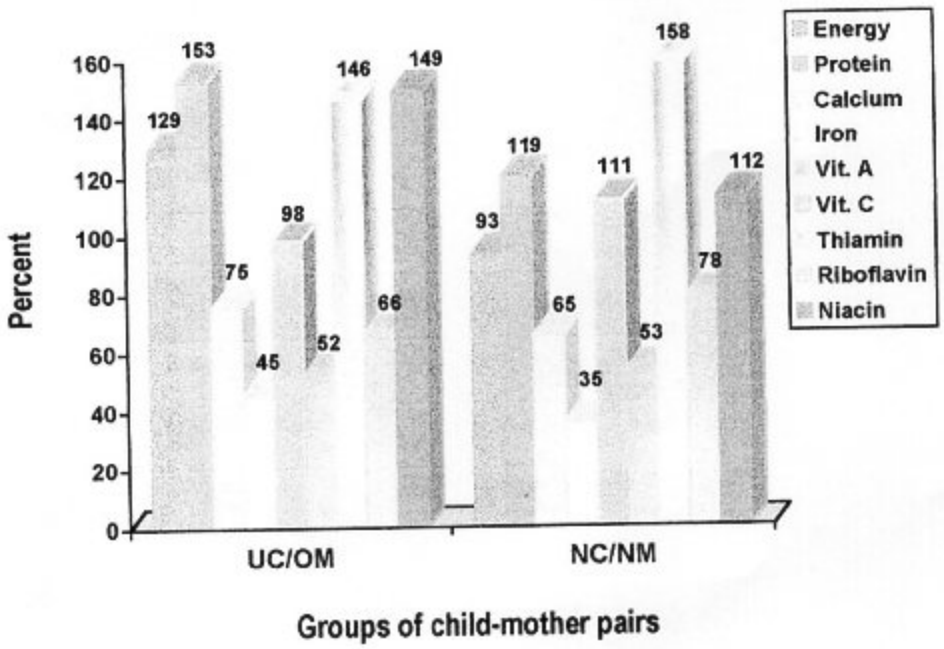



Figure 3. Percent adequacy of nutrients among mothers

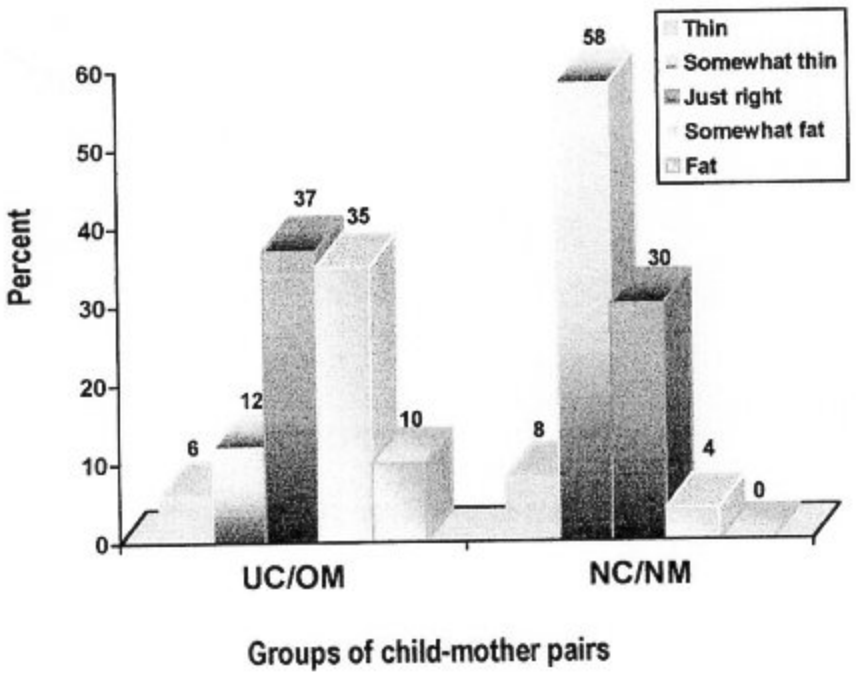
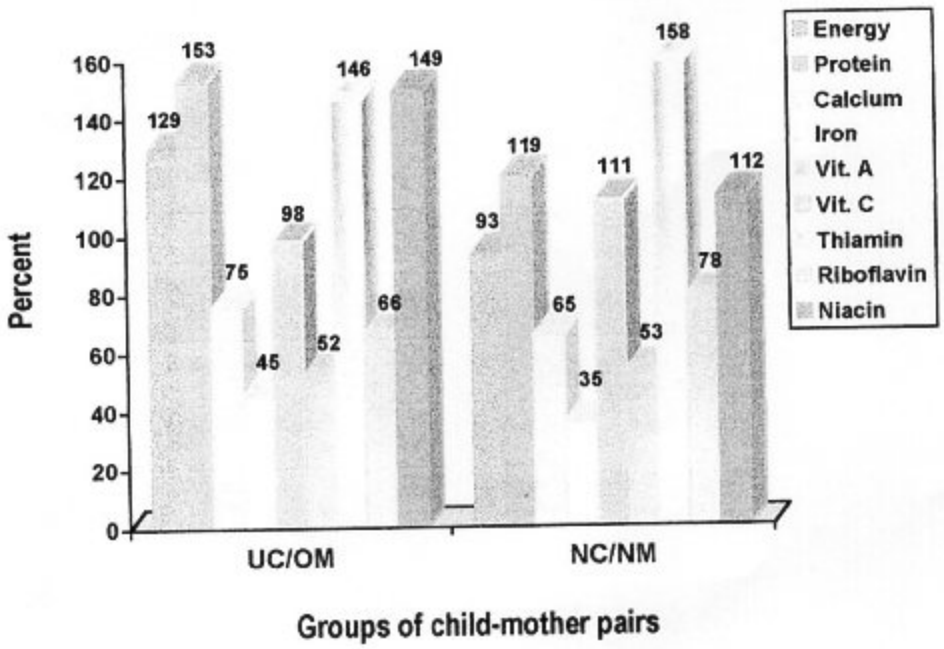



Figure 4. Mother's perception on her own body size

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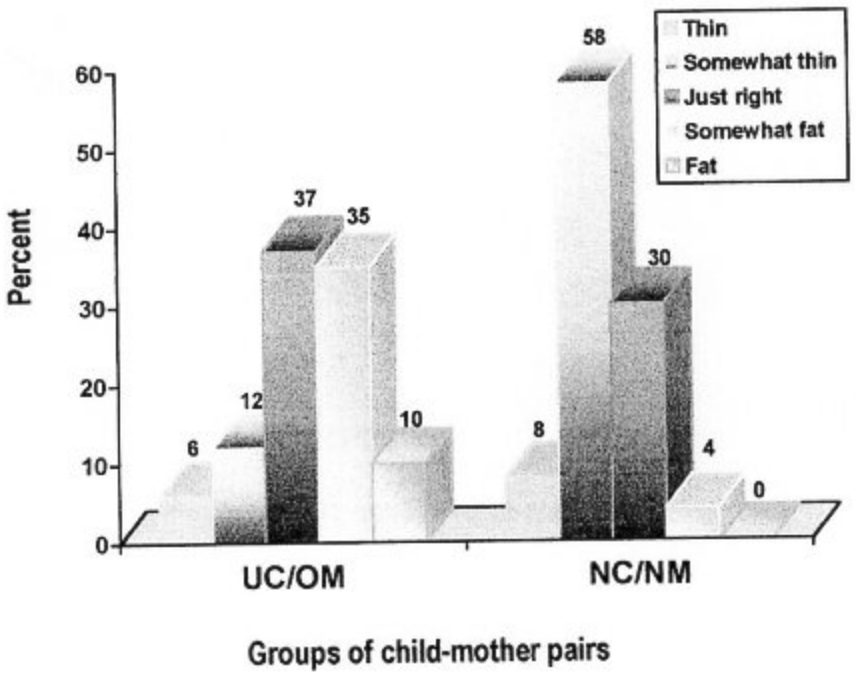


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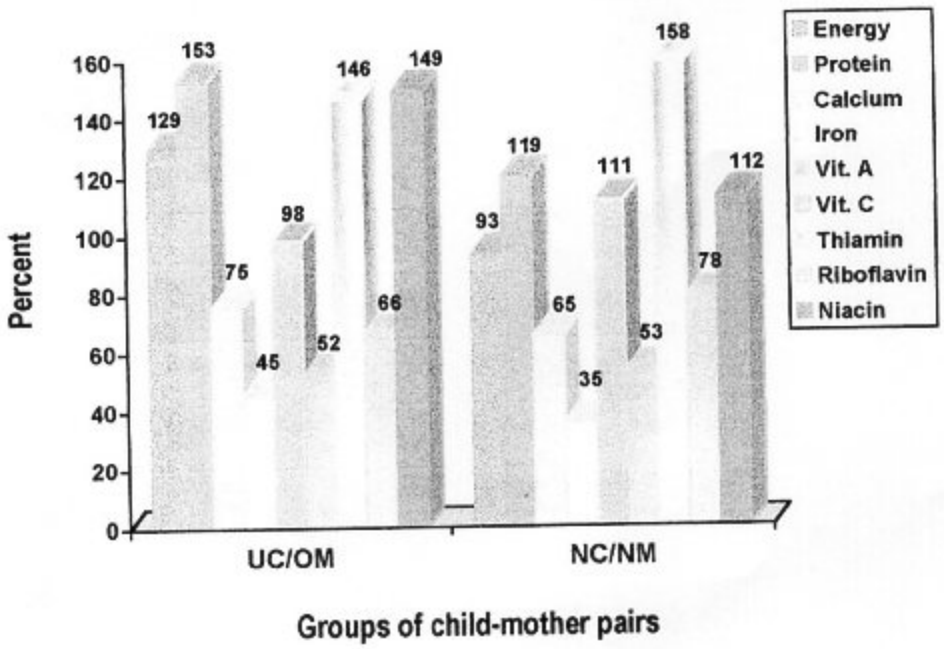


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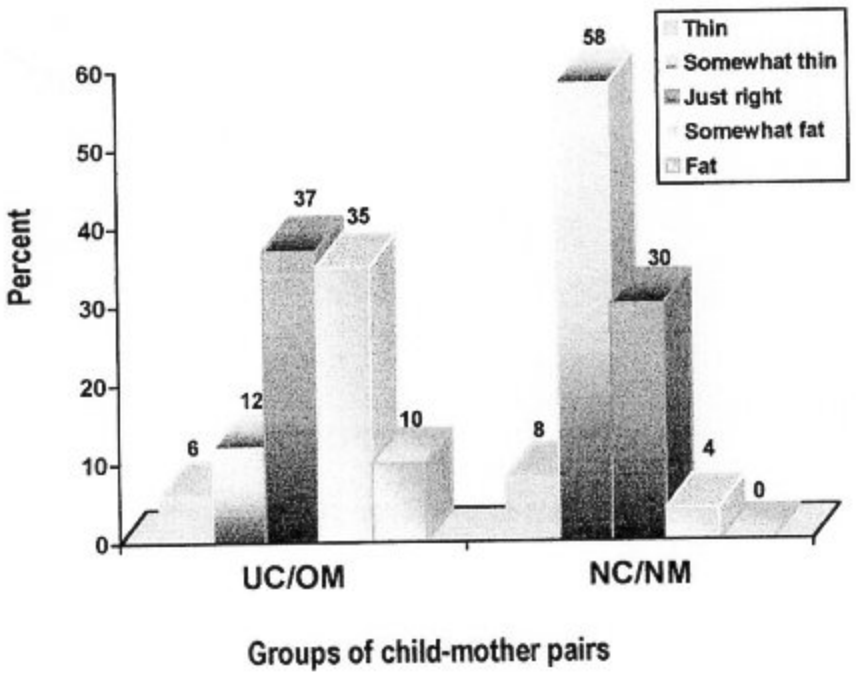


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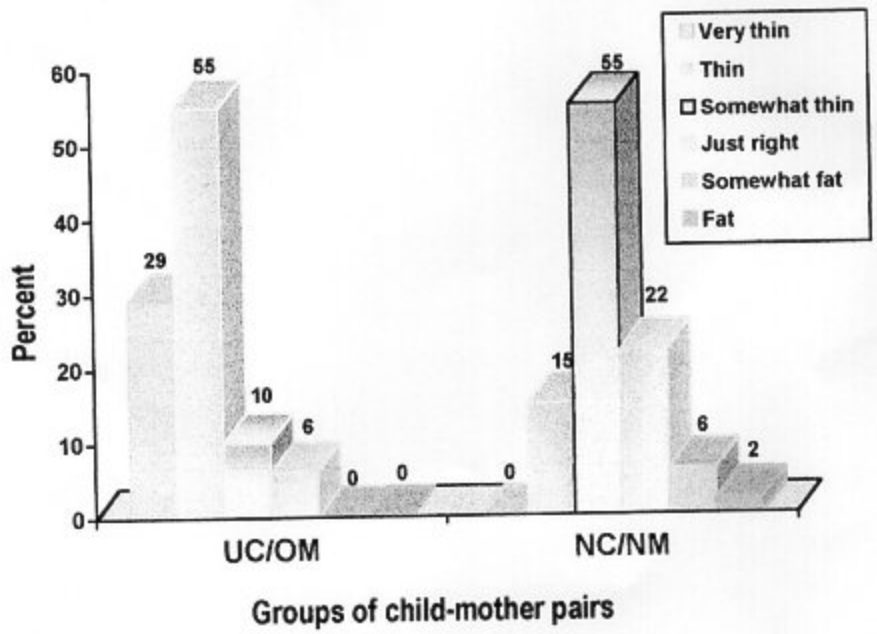



Figure 5. Mother's perception on her child's body size

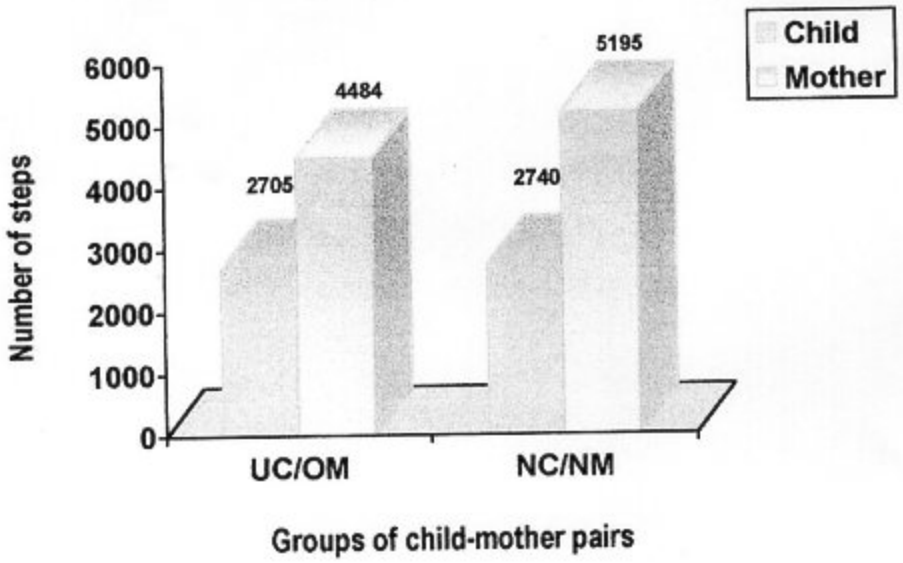
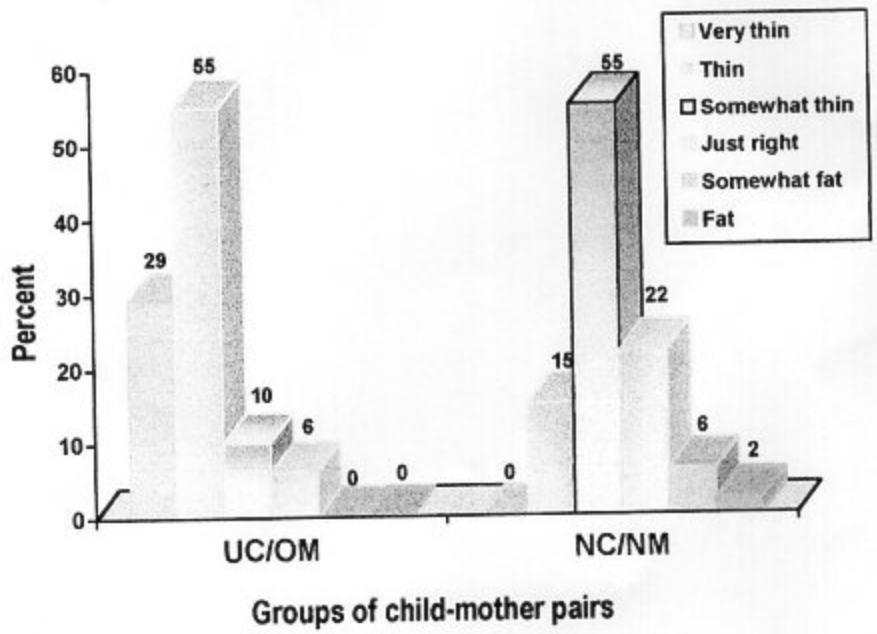



Figure 6. Pedometer reading of child-mother pairs for 8 hrs during day

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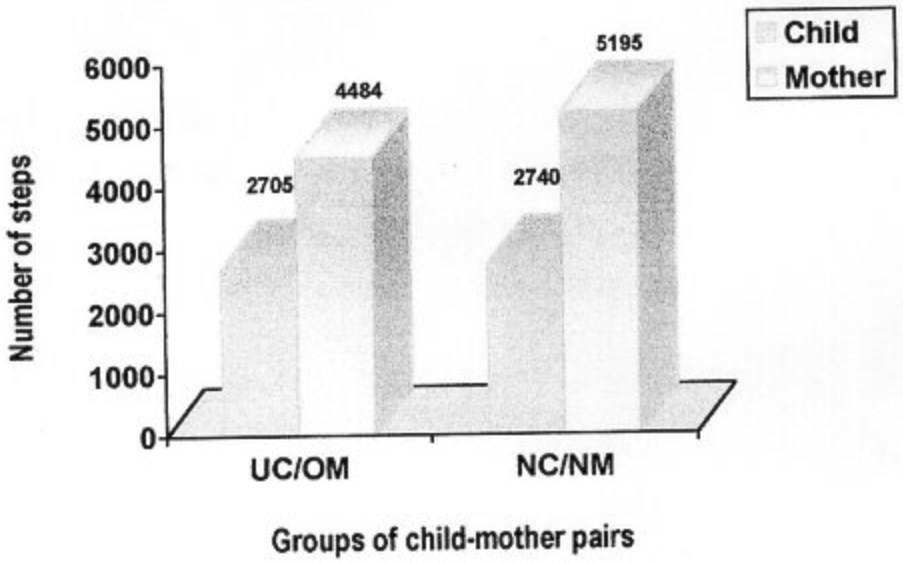


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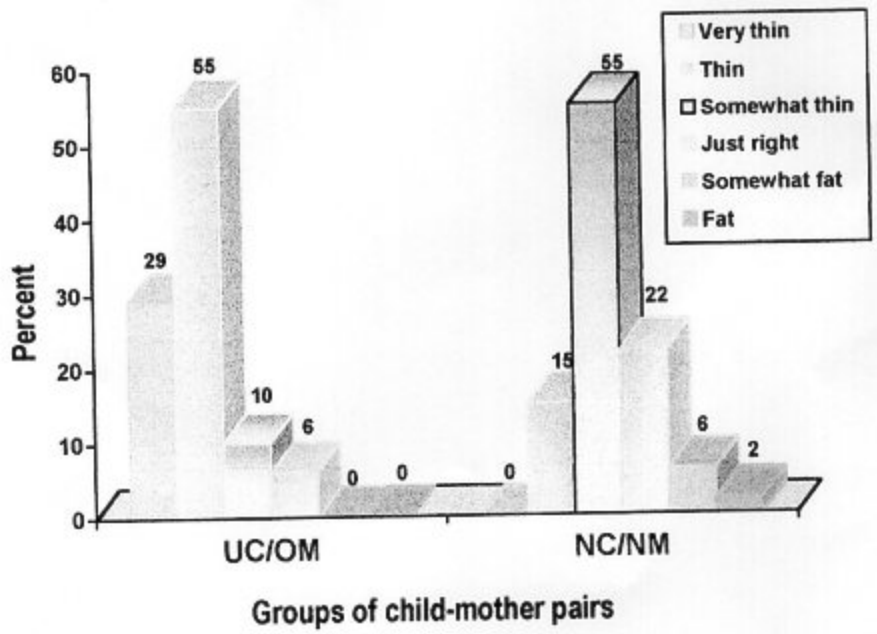


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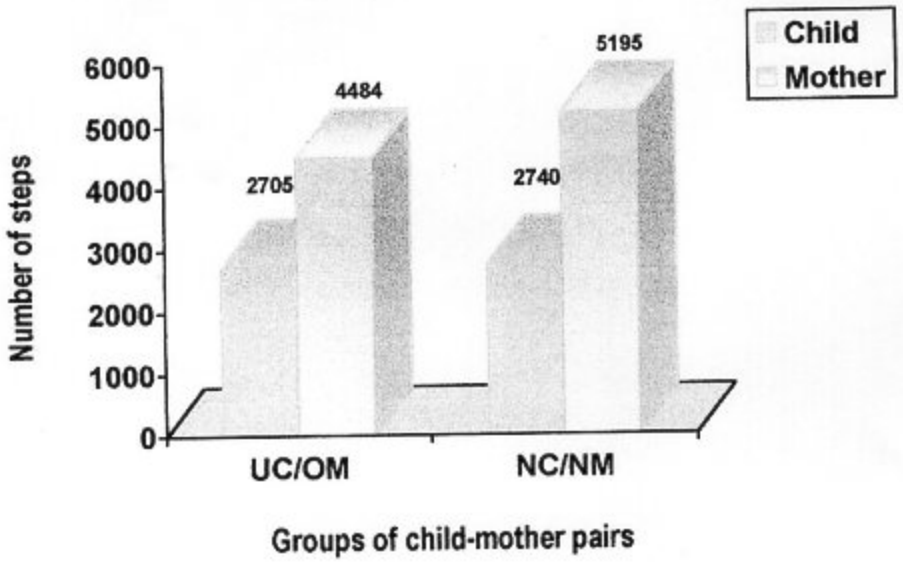


Figure 6. Pedometer reading of child-mother pairs for 8 hrs during day

**Introduction:**

The co-existence of under and overnutrition in the same household presents a conceptual conundrum. Generally, these conditions are thought to result from environmental conditions that affect the entire household with undernutrition particularly reflecting a lack of income and poor diets. An overweight mother in the household indicates that income is apparently enough for her to acquire sufficient calories to be overweight. She may not be eating "well" – that is, her diet may not be of high quality in terms of nutrient content and percentage of energy – but she is certainly eating "enough" in terms of calories. On the other hand, undernutrition in her child indicates a deficit in energy or nutrients on child's intake. Since this condition exists in the same family/household, it could also be that under certain conditions intrahousehold factors become more important than the environmental factors. In both cases improvements in feeding practices are called for. The most appropriate response would be changes in intrahousehold resource allocations and improvement in the quality of the diet, with better, and not necessarily more food. The co-existence of dual forms of malnutrition in the same family is, therefore, viewed as both a societal and individual level phenomenon.

The aim of this present study is to explore and determine the prevalence of the co-existence of overweight mother with underweight child and identifies possible factors that may influence its existence in one family.

**Methods:**

This study was a descriptive analytical study with purposive sampling technique conducted in 3 Barangays in Makati City, with the high prevalence of undernutrition and overnutrition among children, as reflected in their quarterly weighing report. Makati City is a highly urbanized city and the center for trade in Metro Manila. It is however, not free from the problem of having shanties amidst high buildings

Prior to the implementation of this research, proper administrative and community coordination at all levels was conducted for easy mobility and accessibility to the families.

A screening activity to identify possible participants for study was conducted. All mothers with 2 - 6 year old child/children were gathered in a central area for anthropometric measurements. A total of 653 mothers and 841 children (some mothers have two children), not suffering from any sort of infection by clinical examination participated in the survey. A brief orientation on the research protocol was discussed to all the mothers.

Weight of children and mothers was measured and recorded to the nearest 0.1 kg using a Detecto weighing scale (Webb City, Mo. U.S.A). Subjects wore lightweight clothings and no shoes. Height was measured and recorded to the nearest 0.1 cm using a microtoise (Depose, France) posted flat against a wall[5].

Anthropometric Z-scores were computed for all children (841) relative to the WHO/NCHS reference population[6,7]using the Fox pro Software Package (1989). The cut-offs used were as follows: WAZ $<$ -2SD for underweight ; WAZ -2SD to $<$+2SD was used to define children with normal nutritional status; and WAZ $\geq$ + 2SD for overweight.

Body Mass Index (BMI) was used to determine the nutritional status of all mothers. BMI cut-offs used to define overweight was BMI $\geq$ 25 kg/m$^2$ and underweight or chronic deficiency as BMI $\leq$ 18.5 kg/m$^2$.

An in-depth study on selected subjects: mothers who were overweight with underweight child (UC-OM) and mother-child pairs who were both having normal – normal nutritional status (NC-NM). There were 49 UC-OM pairs and 53 randomly selected NC-NM pairs. It was intended to have equal number of respondents per

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Pre-tested structured questionnaires were developed to collect the variables of interest for both mother and child pairs: socio-economic-demographic data, food intake, food behavior, perception of mothers on body size, and physical activity. All information on children was recorded as reported by the mothers.

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Physical activity for both child and mother pairs were measured using pedometers with proper instructions on how and when to use it. Pedometers were tied around the waist of the child or mother with a belt starting at 6:00 h to 18:00 h. Pedometer readings were recorded by the mothers and were validated by the Researchers the following day.

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Descriptive statistics were generated for all variables. A chi-square test was used to determine associations between two proportional variables while student t-test was employed to determine significant differences in mean values of different variables between the two groups. Discriminant analysis was used to determine the factors on which the groups are expected to differ. Data were analyzed with *Statistical Package for Social Sciences (version 9, 1999)*, SPSS Chicago. Significance was set at $P < 0.05$.

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This study was guided by Council for International Organizations of Medical Sciences (CIOMS, WHO, 2003). It was approved by the Food and Nutrition Research Institute – Institutional Ethics Review Committee.

***Results:***

*Profile of Subjects:*

During the screening a total of 653 mothers and 841 children (some mothers with 2 children) were measured. The mean age of the mothers was 31.9 years with a mean weight of 54.0 kg and a mean height of 151.5 cm. The mean BMI was 23.5 kg/m$^2$. The prevalence of overweight using BMI was 32.6%.

Among children, the mean age was 46.7 months with a mean weight of 14.2 kgs, and mean height was 95.9 cm. Mean weight of males (14.5 kg) was significantly higher than females (13.9 kg). However, the prevalence of underweight was significantly higher among males (26.9%) than females (20.1%).

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Fig. 1 shows that the prevalence of undernutrition (e.g. underweight and stunting) in the family was higher when families have higher number of preschoolers.

Table 1 presents the different forms of malnutrition experienced by child -mother pairs. The WAZ - BMI dual forms of malnutrition combinations in descending order are: normal/over (78%), normal/under (74%), under/normal (26%), under/over (18%).

Table 2 presents the profile of the selected 49 UC - OM pairs and 53 NC - NM pairs who were included in the in-depth study. The mean age of children was significantly higher in the UC - OM group than in the NC - NM group. However, mean weight among children in the NC - NM was higher than in the UC - OM. Height was similar in both UC - OM and NC - NM. Among mothers, mean age and height were similar in both groups but weight and BMI were significantly higher in the NC - NM than UC - OM.

*Socio-Economic-Demographic Data:*

The top 3 commonly available appliances the respondents have at home were: TV, radio and refrigerator (Table 3). The percentage of families with refrigerator and its use as the main type of food storage was significantly associated with nutritional status ($p<0.05$). The mean monthly family income of the UC-OM group was Php 7,151.02 with an average food expenditure per day of Php160.83. Among the NC - NM group, the mean monthly income was Php 9,170.94 with an average food expenditure of Php 163.95. The number of livebirths was found to be associated with nutritional status (Table 4).

*Dietary Intake:*

Children in the UC - OM group have a mean energy intake of 980 kcal, which is significantly lower than the NC/NM group (1300 kcal). Nutrient intake like proteins, fats, carbohydrates, calcium, iron, vitamin A, ascorbic acid, thiamin, riboflavin and niacin were also significantly lower than in the NM-NC group (Table 5). Percent adequacy of nutrients revealed that only proteins (102%) and thiamin (117%) were above the RDA in the UC-OM group while protein (151%), vitamin A (141%), and riboflavin (123%) in the NC/NM group (Fig. 2).

The intakes of calcium, vitamin A and riboflavin among mothers in both UC-OM and NC-NM groups were similar (Table 6). Percent nutrient adequacy for energy, proteins, thiamin and niacin were higher than the RDA among the UC-OM group while proteins, vitamin A, thiamin, and niacin for the NC-NM group. Percent nutrient adequacy for iron and vitamin C were the lowest among all the nutrients in both groups (Fig. 3).

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In children, the top 3 most preferred and usually eaten snack foods were: bread, carbonated beverages, and kropeck or chips. The preference and eating of kropeck/chips was associated with the nutritional status ($p<0.05$). Among mothers the same snack foods were most preferred and eaten but instead of chips, biscuits and cookies were taken and was found to be related with nutritional status ($p<0.05$). The reasons given why mothers and their children preferred these foods were similar: their children like the taste, these foods were good for health, and accessible/affordable (Table 7). The types of street foods usually eaten by children were: banana cue, squidballs and kropeck, while mothers eat kikiam, and also banana cue and squidballs . Both mothers and children have no food avoidance (Table 8).

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*Mother's Perception on Body Size*

Mother's perception on her own body size was significantly related to their nutritional status ($P<0.05$). In the UC - OM group, about 55% perceived that they were thin to just right while in the NC - NM group, 66% considered themselves as thin to somewhat thin, about 4% said they were somewhat fat (Fig. 4).

Mothers' perception on her child's body size was significantly related to their child's nutritional status ($P<0.05$). Mothers in the UC - OM group said that their children were: very thin (29%), thin (55%), somewhat thin (10%), and just right (6%). In the NC - NM group, 15% said that their children were thin; 55% were somewhat thin; 22% just right and 8% somewhat fat to fat (Fig.5).

*Total Energy Expenditure:*

Energy expenditure of children in the UC – OM group as measured by pedometers revealed that there was no significant difference between the two groups for both mothers and children (Fig 6)

In summary of the results, the different factors discriminating or distinguishing the two groups from each other were the perception of mothers on her body size and her child's body size; energy adequacy of the child and mean carbohydrate intake of the mothers. (Table 10)

**Conclusion and Recommendations:**

The problem of under/overnutrition in one family poses enormous challenges. Although this study cannot make an inference of the whole population of the people living in an urban-rich community, the results indicated that there is a need to develop public health programs that focus on healthy diet and lifestyle patterns that will lead to optimal health outcomes.

Developing countries like the Philippines may fight both under and overnutrition simultaneously with strong public health messages that would contribute to good health for all. We should consider the different factors that need to be changed at every level of the environment in which the people live: the politicians, institutions, community, and individuals.

The development of public health messages could focus on the different factors influencing nutritional status which were found in this present study: the number of livebirths in the family, availability of refrigerator as food storage, percentage adequacy of nutrient intakes of both mother and child; mother's perception of her own body size and her child's body size; preference of cookies, biscuits with cream among mothers; child's preference of kropeck and chips; consumption of milk; mothers' practice on eating the plate waste of their children; the practice of eating streetfoods. The most important factors to be considered would be the: mother's perception on her body size and her child's body size, mean carbohydrate intake of the mothers, and energy adequacy of the child.

Problem-based nutrition messages should be designed with reference to the Dietary Guidelines for Filipinos and the Recommended Energy and Nutrient Intakes (FNRI, 2003).

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*Acknowledgement:*

This study was supported by the U.S. Japan Cooperative Medical Society Program through the National Institute of Health and Nutrition represented by Dr. Heizo Tanaka, Director General and Dr. Yasuhiro Matsumura, Deputy Director, Division of Health Informatics and Education. Specifically, we extend our thanks and gratitude to the Local Government Executives and Staff of Makati City and the different Barangays covered in this study.

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The development of public health messages could focus on the different factors influencing nutritional status which were found in this present study: the number of livebirths in the family, availability of refrigerator as food storage, percentage adequacy of nutrient intakes of both mother and child; mother's perception of her own body size and her child's body size; preference of cookies, biscuits with cream among mothers; child's preference of kropeck and chips; consumption of milk; mothers' practice on eating the plate waste of their children; the practice of eating streetfoods. The most important factors to be considered would be the: mother's perception on her body size and her child's body size, mean carbohydrate intake of the mothers, and energy adequacy of the child.

Problem-based nutrition messages should be designed with reference to the Dietary Guidelines for Filipinos and the Recommended Energy and Nutrient Intakes (FNRI, 2003).

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*Mother's Perception on Body Size*

Mother's perception on her own body size was significantly related to their nutritional status ($P<0.05$). In the UC - OM group, about 55% perceived that they were thin to just right while in the NC - NM group, 66% considered themselves as thin to somewhat thin, about 4% said they were somewhat fat (Fig. 4).

Mothers' perception on her child's body size was significantly related to their child's nutritional status ($P<0.05$). Mothers in the UC - OM group said that their children were: very thin (29%), thin (55%), somewhat thin (10%), and just right (6%). In the NC - NM group, 15% said that their children were thin; 55% were somewhat thin; 22% just right and 8% somewhat fat to fat (Fig.5).

*Total Energy Expenditure:*

Energy expenditure of children in the UC – OM group as measured by pedometers revealed that there was no significant difference between the two groups for both mothers and children (Fig 6)

In summary of the results, the different factors discriminating or distinguishing the two groups from each other were the perception of mothers on her body size and her child's body size; energy adequacy of the child and mean carbohydrate intake of the mothers. (Table 10)

**Conclusion and Recommendations:**

The problem of under/overnutrition in one family poses enormous challenges. Although this study cannot make an inference of the whole population of the people living in an urban-rich community, the results indicated that there is a need to develop public health programs that focus on healthy diet and lifestyle patterns that will lead to optimal health outcomes.

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Table 1. Nutritional status of child-mother pairs involved in the screening activity

| Nutritional Status of Children (n=841) | Nutritional Status of Mothers BMI | | |
|---|---|---|---|
| | Under | Normal | Over |
| | No. (%) | No. (%) | No. (%) |
| WAZ | | | |
| Underweight | 18 (26) | 132 (26) | 49 (18) |
| Normal | 52 (74) | 357 (71) | 209 (78) |
| Overweight | 0 | 13 (3) | 11 (4) |
| Total | 70 (100) | 502 (100) | 269 (100) |
| HAZ | | | |
| Stunted | 24 (34.3) | 133 (26.3) | 50 (18.8) |
| Normal | 46 (65.7) | 366 (72.5) | 210 (78.9) |
| Tall | 0 | 6 (1.2) | 5 (2.3) |
| Total | 70 (100) | 505 (100) | 266 (100) |
| WHZ | | | |
| Wasted | 3 (4.3) | 22 (4.4) | 6 (2.2) |
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Table 2. Profile of selected child-mother pairs

| Variables | Group UC/OM (n=49) | Group NC/NM (n=53) | Mean Diff. | P |
|---|---|---|---|---|
| | Mean (SD) | Mean (SD) | | |
| Children | | | | |
| Age (mo) | 52.3 (14.03) | 46.6 (13.7) | 5.68 | .042 |
| Weight (kg) | 12.8 (1.9) | 14.7 (2.3) | -1.9 | .000 |
| Height (cm) | 95.3 (8.6) | 97.4 (8.3) | -2.1 | .214 |
| Mothers | | | | |
| Age (y) | 31.9 (6.5) | 33.4 (7.8) | -1.47 | .306 |
| Weight (kg) | 59.9 (8.3) | 48.1 (4.7) | 11.8 | .000 |
| Height (cm) | 150.4 (5.9) | 152.1 (5.3) | -1.7 | .126 |
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Table 3. Economic profile of selected child mother pairs

| Variables | Group UC/OM | | Group NC/NM | |
|---|---|---|---|---|
| | No. | % | No. | % |
| With appliances | | | | |
| Television | 41 | 84 | 47 | 86 |
| Radio | 22 | 45 | 30 | 57 |
| With refrigerator [1] | 16 | 33 | 31 | 46 |
| Main type of food storage | | | | |
| Refrigerator [1] | 16 | 33 | 31 | 59 |
| Screened or closed cabinet | 6 | 12 | 6 | 11 |
| On top of the table with cover | 27 | 55 | 16 | 30 |

[1] *P < 0.05*

Table 4. Demographic profile of selected child mother pairs

| Variables | Group UC/OM | Group NC/NM | Mean diff. | P |
|---|---|---|---|---|
| | Mean (±SD) | Mean (±SD) | | |
| Number of pregnancies | 4.1 (±1.9) [1] | 3.4 (±2.0) | 0.73 | .069 |
| Number of livebirths | 3.84 (±1.85) | 3.09 (±1.78) | 0.74 | .042 |
| Total Income per month (Php) | 7,152.02 (±3254.1) | 9,170.94 (±7175.12) | 2019.9 | .068 |
| Average food expenditure/ day | 160.83 (±61.11) | 163.95 (±59.43) | 3.11 | .490 |

Table 5. Mean one-day per capita energy and nutrient intake of children

| Variables | Group UC/OM | Group NC/NM | Mean diff. | P |
|---|---|---|---|---|
| | Mean (±SD) | Mean (±SD) | | |
| Energy (kcal) | 980 (±376) | 1300 (±413) | -230.38 | .000 |
| Protein (g) | 30.9 (±11.9) | 43.7 (±14.9) | -12.78 | .000 |
| Fats (g) | 28 (±18) | 38 (±20) | -10.4 | .008 |
| Carbohydrates (g) | 151 (±58) | 195 (±58) | -44 | .000 |
| Calcium (mg) | 234.6 (±133.5) | 435.2 (±300.7) | -200.6 | .000 |
| Iron (mg) | 5.7 (±2.7) | 7.5 (±3.7) | -1.83 | .006 |
| Vitamin A (µg/RE) | 260.3 (±163.2) | 504.8 (±381.8) | -244.5 | .000 |
| Ascorbic Acid (mg) | 17.9 (±22.8) | 32.7 (±33.2) | -14.9 | .009 |
| Thiamin (mg) | 0.9 (±0.59) | 1.4 (±1.11) | -0.5 | .007 |
| Riboflavin (mg) | 0.6 (±0.7) | 0.9 (±0.6) | -0.3 | .018 |
| Niacin (mg NE) | 9.3 (±5.2) | 12.1 (±5.2) | -2.8 | .008 |

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|---|---|---|---|---|
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| With appliances | | | | |
| Television | 41 | 84 | 47 | 86 |
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| With refrigerator [1] | 16 | 33 | 31 | 46 |
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| On top of the table with cover | 27 | 55 | 16 | 30 |

[1] *P < 0.05*

Table 4. Demographic profile of selected child mother pairs

| Variables | Group UC/OM | Group NC/NM | Mean diff. | P |
|---|---|---|---|---|
| | Mean (±SD) | Mean (±SD) | | |
| Number of pregnancies | 4.1 (±1.9) [1] | 3.4 (±2.0) | 0.73 | .069 |
| Number of livebirths | 3.84 (±1.85) | 3.09 (±1.78) | 0.74 | .042 |
| Total Income per month (Php) | 7,152.02 (±3254.1) | 9,170.94 (±7175.12) | 2019.9 | .068 |
| Average food expenditure/ day | 160.83 (±61.11) | 163.95 (±59.43) | 3.11 | .490 |

Table 5. Mean one-day per capita energy and nutrient intake of children

| Variables | Group UC/OM | Group NC/NM | Mean diff. | P |
|---|---|---|---|---|
| | Mean (±SD) | Mean (±SD) | | |
| Energy (kcal) | 980 (±376) | 1300 (±413) | -230.38 | .000 |
| Protein (g) | 30.9 (±11.9) | 43.7 (±14.9) | -12.78 | .000 |
| Fats (g) | 28 (±18) | 38 (±20) | -10.4 | .008 |
| Carbohydrates (g) | 151 (±58) | 195 (±58) | -44 | .000 |
| Calcium (mg) | 234.6 (±133.5) | 435.2 (±300.7) | -200.6 | .000 |
| Iron (mg) | 5.7 (±2.7) | 7.5 (±3.7) | -1.83 | .006 |
| Vitamin A (µg/RE) | 260.3 (±163.2) | 504.8 (±381.8) | -244.5 | .000 |
| Ascorbic Acid (mg) | 17.9 (±22.8) | 32.7 (±33.2) | -14.9 | .009 |
| Thiamin (mg) | 0.9 (±0.59) | 1.4 (±1.11) | -0.5 | .007 |
| Riboflavin (mg) | 0.6 (±0.7) | 0.9 (±0.6) | -0.3 | .018 |
| Niacin (mg NE) | 9.3 (±5.2) | 12.1 (±5.2) | -2.8 | .008 |

Table 3. Economic profile of selected child mother pairs

| Variables | Group UC/OM | | Group NC/NM | |
|---|---|---|---|---|
| | No. | % | No. | % |
| With appliances | | | | |
| Television | 41 | 84 | 47 | 86 |
| Radio | 22 | 45 | 30 | 57 |
| With refrigerator [1] | 16 | 33 | 31 | 46 |
| Main type of food storage | | | | |
| Refrigerator [1] | 16 | 33 | 31 | 59 |
| Screened or closed cabinet | 6 | 12 | 6 | 11 |
| On top of the table with cover | 27 | 55 | 16 | 30 |

[1] *P < 0.05*

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