

## ORIGINAL ARTICLE

# Correlation Between Nutritional Status Of Children Aged 12 – 36 Months And Mother's Working Status In Taman, Sidoarjo

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## ABSTRACT

**Introduction:** The correlation between child's nutritional status and mother's working status in Indonesia is still unclear. Some research report a high prevalence of low-nourished children whose mother is working, while others report a non significant correlation between child's nutritional status and mother's working status.

**Methods:** This study was case-control study, sample of low-nourished children (treatment group) & well-nourished children (control) are taken from 21 Posyandu in Taman, Sidoarjo in 2015. All data were analyzed using Chi Square test.

**Results:** There are 72 samples which are suitable with the inclusion criteria, consisted of 36 low-nourished children and 36 well-nourished children. From 72 samples, 28 children have a working mother and 44 children have a non-working mother. There was no correlation between Mother's working status ( $p=0,486$ ), Number of children in the family ( $p=0,468$ ), History of chronic disease ( $p=0,054$ ) with child's nutritional status. Level of family income, Mother's education level, History of exclusive breastfeeding, Energy consumption level, Protein consumption level were correlated with child's nutritional status with value ( $p=0,000$ ), ( $p=0,002$ ), ( $p=0,002$ ), ( $p=0,000$ ), ( $p=0,001$ ) respectively.

**Conclusion:** Mother's working status is proved that is not correlated with child's nutritional status. But, level of family income, mother's education level, energy & protein consumption level, and history of exclusive breastfeeding are significantly correlated with child's nutritional status.

**Introduction**

Children's nutrition is very important and requires a special attention, because malnutrition is an important factor in the occurrence of children's mortality and morbidity, particularly in developing countries.<sup>1</sup> Indonesia as a developing country has a fluctuative number of low nourished children, 18,4% in 2007, decreased to 17,9% in 2010 and increased again to 19,6% in 2013. According to Public Health Office of East Java, number of low-nourished children in East Java is 10,3% from all children under 5 years old. The low-nourished children are found in 38 cities, where Probolinggo has the highest rank of low-nourished

children (15,4%), while Sidoarjo placed the ninth rank with the number of low-nourished children 11,7%.<sup>2</sup>

Factors affecting child's nutrition status are level of family income, level of mother's education, number of children in the family, parenting, energy & protein consumption level, history of exclusive breastfeeding, history of chronic disease, and hygiene & sanitation of the environment.<sup>3</sup> The globalisation era requires mother to play a dual role, not only as a housewife but also as a working mother. When the mother works, the child will be left at home so this affects the time for mother to take care of her child.

The correlation between mother's working status and child's nutrition status is not clear, but a study was once



held in Kudus showed that there was a high prevalence (43%) of low-nourished children in a family with working mother. Thus, this study was conducted to determine the relationship between the nutritional status of children aged 12-36 months and mother's working status and factors other than mother's working status in Taman, Sidoarjo.

### Methods

This was an analytical-observational study with a case-control approached by comparing the case group and control group. The population were children aged 12-36 months who lived in Taman, Sidoarjo. Samples of the case group were low-nourished children and samples of the control groups were well-nourished children. Classification of nutritional status in this study were based on body weight/age which refers to the standard anthropometry reference table by Ministry of Health of Indonesia. Data of the case group in the form of child's name, parents' names and addresses were obtained from Taman Public Health Care.

After that, data of the case group was examined in this study, including mother's working status, level of family income, mother's education level, number of children in a family, history of exclusive breastfeeding, energy and protein consumption level, and history of chronic disease. Those data were obtained through a direct interview with the mothers of the child in Taman Public Health Care. Data of the control group were also obtained by direct interview with the mother of the child in the same Public Health Services as the case group with the same number of case group as well. The data was processed and analyzed by chi-square test with a significance value of  $p < 0.05$ .

### Results

The studied sample characteristics shows in (table 1). 36 (50%) children were low-nourished and 36 (50%) children were well-nourished. 28 (38,9%) children had a working mother and 44 (61,1%) children had a non-working mother. 46 (63,9%) children had mother with high education level, and 26 (36,1%) children had a mother with low education level. 44 (61,1%) had a family with number of children  $\leq 2$ , and 28 (38,9%) had a family with number of children  $> 2$ . Most of the children which were 28 (38,9%) had a moderate level of energy consumption, but there were still 19 (26,4%) children who had a deficit level of energy consumption. Most of the children which were 46 (63,9%) have a high level of protein consumption, but there were still 10 (13,9%) children who had deficit level of protein consumption. 34 (47,2%) children were exclusively breastfed and 38 (52,8%) children were not exclusively breastfed. 5 (7%) children had a history of chronic disease of the past 3 months, and 67 (93%) children did not have any.

Table 1. Frequency of Variables

Variables	Frequency (%)
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Child's Nutritional Status	
Well-nourished	36 (50%)
Low-nourished	36 (50%)
Mother's Working Status	
Working	28 (38,9%)
Non working	44 (61,1%)
Mother's Education Level	
High (> 9 years of education )	46 (63,9%)
Low (< 9 years of education )	26 (36,1%)
Level of Family Income	
High (> Rp. 302. 735,00)*	58 (80,6%)
Low (< Rp. 302. 735,00)*	14 (19,4%)
Number of Children in the Family	
$\leq 2$ children	44 (61,1%)
$> 2$ children	28 (38,9%)
Energy Consumption Level	
High	
Moderate	17 (23,6%)
Low	28 (38,9%)
Deficit	8 (11,1%)
	19 (26,4%)
Protein Consumption Level	
High	
Moderate	46 (63,9%)
Low	14 (19,4%)
Deficit	2 (2,8%)
	10 (13,9%)
History of Exclusive Breastfeeding	
Yes	34 (47,2%)
No	38 (52,8%)
History of Chronic Disease	
Yes	
No	5 (7%)
	67 (93%)

\*Indonesia Central Bureau of Statistic, 2014

Correlation between variables are displayed in table 2. Correlation between mother's working status and child's nutritional status was statistically not significant ( $p=0,486$ ). Correlation between level of family income and child's nutritional status was statistically significant ( $p=0,000$ ). Correlation between number of children in the family and child's nutritional status was not significant ( $p=0,468$ ). Correlation between mother's education level and child's nutritional status was statistically significant ( $p=0,002$ ). Correlation between energy consumption level and child's nutrition status was significant ( $p=0,000$ ). Correlation between protein consumption level and child's nutritional level was significant ( $p=0,001$ ). Correlation between history of exclusive breastfeeding and child's nutrition level was significant ( $p=0,002$ ). Correlation between history of

chronic disease and child's nutrition status was not significant ( $p=0,054$ ).

Table 2. Correlation between Variables

Variables	Child's Nutrition Status		P
	Well	Low	
Mother's Working Status			
Working	16 (44,4%)	12 (33,3%)	0,468
Non working	20 (55,5%)	24 (66,7%)	
Level of Family Income			
High	36 (100%)	22 (61,1%)	0,000
Low	0 (0%)	14 (38,9%)	
Number of Children in The Family			
≤2	24(66,7%)	20 (55,6%)	0,468
>2	12(33,3%)	16 (44,4%)	
Mother's Education Level			
High	26 (72,2%)	12 (33,3%)	0,002
Low	10 (27,8%)	24 (66,7%)	
Energy Consumption Level			
High & Moderate	35(97,2%)	10 (27,8%)	0,000
Low & Deficit	1 (2,8%)	26 (72,2%)	
Protein Consumption Level			
High & Moderate	36 (100%)	24 (66,7%)	0,001
Low & Deficit	0 (0%)	12 (33,3%)	
History of Exclusive Breastfeeding			
Yes	24 (66,7%)	10 (27,8%)	0,002
No	12 (33,3%)	26 (72,2%)	
History of Chronic Disease			
Yes	0 (0%)	5(13,9%)	0,054
No	36 (100%)	31(86,1%)	

### Discussion

Working is related to family income. Mother who works can increase the family income, on the other hand, it will reduce the frequency of interaction with the child left at home. Statistical test results in table 2 shows no significant correlation between the mother's working status and child's nutritional status. Results of this study supported the statement that a working mother increased family income, so that mother could prepare the primary needs of her child better, especially she had a high level

of education and extensive knowledge in maintaining the health of her child.<sup>4</sup>

Beside mother's working status, this study results also showed no statistically significant relationship between child's nutritional status and the number of children in the family, and history of chronic disease. A previous study showed that a worsening food consuming could happen to the families whose members were 6 or more. So the family with 4-6 members was not experiencing a worsening food consuming, especially when the family had high income.<sup>5</sup>

However, the results of statistical tests showed that there was a significant relationship between child's nutritional status and level of family income, mother's education level, energy and protein consumption level, and history of exclusive breastfeeding. In spite of its relationship with child's nutritional status, level of family income also related to employment, education, and also the level of family welfare. With sufficient income, all primary needs of the family members can be fulfilled, especially for the child.<sup>6</sup> Mother's education levels are also related to child's nutritional status. A study said that mothers with higher education levels had the skills, knowledge, and a better choice in determining the nutrients and maintaining the health of their children.<sup>7</sup>

Energy and protein consumption level also clearly had an important role in affecting child's nutritional status, because, the nutrients including protein and energy, which were needed by the body for growth, producing energy, and regulate physiological functions of the body. So, if the lack of nutrients happens continuously, it can directly affects the growth of the children.<sup>8</sup> Exclusive breastfeeding also affect child's nutritional status, because exclusively breastfed-children had an immunity against infection better than children who were not exclusively breastfed.

### Conclusion

There was no significant relationship between child's nutritional status and mother's working status. But, there was a significant relationship between child's nutritional status and level of family income, mother's education level, energy & protein consumption level, and history of exclusive breastfeeding. Further study with greater samples and factors affecting child's nutritional status is suggested.

### Conflict of Interest

The author stated there is no conflict of interest.

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