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# Saponin maintaining and dose determining in carica papaya leaf cookies as a breast milk booster (Galactagogue)

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## Abstract

Background: Papaya leaf has been proven to increase breastmilk production as the saponin content increases oxytocin level. However papaya leaf has a bitter taste, therefore cookies form is a good alternative to increase compliance. Saponin content has to be maintained and the dose should be determined to be an effective breastmilk booster (galactagogue). Objective: This study aimed to find the best process in 1. Minimizing the bitter taste of papaya leaf, 2. Maintaining saponin content of cookies, 3. Finding the highest dose of acceptable cookies, and 4. Determining the amount of cookies has to be consumed by lactating mothers as a breastmilk booster. Method: For minimizing the bitter taste of Carica papaya leaf we compared the pH level of mashed papaya leaf after three different treatments. For saponin maintaining, we compared two different temperature and duration of baking processes. Hedonic tests were performed to find the dose of papaya leaf cookies which were acceptable. The number of cookies should be consumed was calculated based on amount of saponin in the cookies, which had been shown to have an effective outcome. Findings: This study found that Carica papaya leaf which was boiled twice in 60°C for 10 minutes had the lowest pH compared to be soaked in 2.5% volume of quicklime (calcium oxide) solution or 10 minutes boiled in the cooked rice water. Baking Carica papaya leaf cookies in 60°C for 70 minutes could maintain saponin content compared to be baked in 130°C for 35 minutes. Hedonic test results showed that there was no significant differences in acceptability levels of Carica papaya leaf content between the groups. A hundred gram cookies with 40% carica papaya leaves contained 3.67g saponin, thus for 1.8g saponin intake/ day in two cookies of 25g should be consumed. Conclusion: The best method in reducing the bitter taste of Carica papaya leaf cookies was by boiling in 60°C for 10 minutes. Saponin content in the cookies could be maintained by 60°C for 70 minutes baking. The highest dose but acceptable taste of carica papaya leaf cookies was 40%. Two pieces of 25g carica papaya leaves cookies can be consumed as galactagogue. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

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Breastmilk booster; Carica papaya; Cookies; Galactagogue; Saponin

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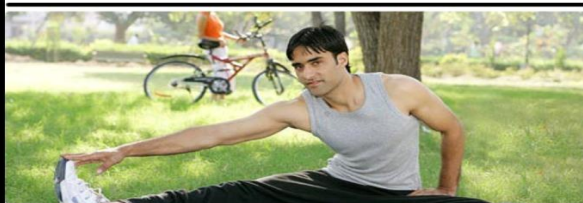
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# Influence of Socio-Demographic and Clinical Variables on the Frequency of Acute Respiratory Infections among Under-five Children

Abhilash Venunathan<sup>1</sup>, Bijoy Philip<sup>2</sup>, Kandasamy Muthugounder<sup>3</sup>, Reetha Ismail<sup>4</sup>, Prathima Prakasam<sup>3</sup>

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## Abstract

**Background:** Acute Respiratory Infection (ARI) is a major cause of morbidity and mortality among young children. They account for nearly 3.9 million deaths every year globally. ARI accounts for 30-40% of the hospital outpatient visits by children under five years of age. About 156 million new episodes of childhood clinical pneumonia occurred globally in 2000, more than 95% of them in developing countries. Of all the pneumonia cases occurring in those countries, 8.7% are severe enough to be life-threatening and require hospital admission. Various risk factors have been identified across the globe such as low birth weight, lack of exclusive breastfeeding, crowding – more than seven persons per household, exposure to indoor air pollution, incomplete immunization, under-nutrition, and HIV infection.

## Objective:

- To find out the association between socio-demographic variables and frequency of acute respiratory infections among under-five children.
- To find out the association between clinical variables and frequency of acute respiratory infections among under-five children.

**Method:** A cross sectional study was conducted among 400 under-five children admitted in various hospitals of northern part of Kerala, South India from January 2016- December 2016. Socio-demographic and clinical data was collected by using a Socio-Demographic and Clinical Variable Portfolio. One year follow up was done to identify the frequency of acute respiratory infections among the study participants.

**Results:** A significant association ( $p < 0.05$ ) was found between frequency of Acute Respiratory Infections (ARI) and age of children, domicile, method of waste disposal, smoking habits of parents, birth weight and nutritional status.

**Keywords:** Socio-Demographic and Clinical Variables, Acute Respiratory Infections, Under-five children.

## Introduction

Acute Respiratory Infections (ARI) among children is one of the major threat to the health care systems of the developing countries<sup>1</sup>. Acute Respiratory Infections are considered as a main cause of mortality and morbidity among the children under five years of age especially in Indian subcontinent. As per the recent data

from Indian health statistics shows that nearly 19 % of mortality and 8.2 % of morbidity in under five children due to respiratory problems<sup>2</sup>. A huge variety of factors were influencing the occurrence of Acute Respiratory Infections (ARI) among the children. That is why Acute Respiratory Infections (ARI) among children are one



# Impact of Vitamin D Supplementation on Anthropometric, Glycemic and Lipemic Profile in Subjects with Type 2 Diabetes: A Randomized Control Trial

Arti Muley<sup>1</sup>, Uma Iyer<sup>2</sup>

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## Abstract

**Background:** Vitamin-D Deficiency is linked with pathogenesis and progression of diabetes, hypertension, and cardiovascular diseases through various vitamin-D receptors present on tissues and organs in the body. Literature suggests, vitamin-D replenishment improves concentration of lipids and insulin secretion in subjects with type-2 diabetes mellitus (T2DM) and established vitamin-D deficiency. This randomised control trial aimed to study the impact of vitamin-D3 granules on anthropometric measurements, glycemic and lipid parameters in T2DM subjects.

**Method:** 70 T2DM subjects of age 30-65y, having serum 25(OH)D levels <20ng/ml were randomly divided in two groups; supplementation group (n=40) receiving weekly 60,000 IU vitamin-D3 granules for 8 weeks and the control group (n=30). The anthropometric (waist & hip circumference, BMI) and blood pressure measurements were recorded. Fasting blood samples were taken for estimation of 25(OH)D, lipid profile and HbA1c, before and after supplementation period. Analysis was done using SPSS v20 by independent and paired t-test.

**Results:** The mean serum vitamin D levels of supplementation and control group were 12.1±3.3 and 10.9±3.3 respectively. After the supplementation significant rise in 25(OH)D levels was seen in supplemented group as compared to controls. A significant decrease in weight, waist-circumference, total cholesterol & LDL-C was observed in supplementation group, post intervention, while HbA1c levels decreased non-significantly.

**Conclusion:** Vitamin-D supplementation improved the anthropometric and lipid parameters among the subjects, thus suggesting a beneficial role on cardio-metabolic profile of the T2DM subjects.

**Key words-** 25(OH)D levels, type-2 diabetes mellitus, supplementation, adults, India

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## Introduction

Vitamin-D inadequacy is a worldwide problem with potential consequences for many chronic diseases, including obesity, cardiovascular disease and type 2 diabetes mellitus (T2DM). Evidence shows that vitamin-D status is important to regulate some pathways related to diabetes development, thus making vitamin-D deficiency (VDD) more evident in diabetic subjects. A



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Dengan ini menyatakan penelitian tersebut telah memenuhi persyaratan etik dan setuju untuk dilaksanakan dengan memperhatikan prinsip-prinsip yang dinyatakan dalam Pedoman Nasional Etik Penelitian Kesehatan (PNEPK) Departemen Kesehatan RI 2011.

Semarang, 04 Juni 2018  
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