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Assessing the Impact of Structured Vitamin A Education on Mothers of Young Children in Kuppam

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Abstract: For young children, particularly those under five, Vitamin A is vital for health and development. It proves indispensable, supporting robust growth, strengthening immunity, protecting healthy vision, and ensuring skin integrity. Ensuring adequate Vitamin A intake is key to supporting optimal development, providing crucial protection against infections, and significantly contributing to overall well-being. Against this backdrop, the present study sought to determine the efficacy of a carefully designed teaching intervention on maternal knowledge regarding Vitamin A requirements, sources, deficiency, and preventive measures. This research involved mothers of under-five children residing in selected areas within Kuppam, Chittoor district, Andhra Pradesh. The initial assessment revealed that knowledge levels were quite limited; a large majority (86.8%, n=118) possessed only moderate knowledge, while a notable portion (11.8%, n=16) demonstrated inadequate understanding, with very few mothers (1.5%, n=2) showing adequate knowledge. Following the intervention, the post-test results showed a dramatic improvement. A substantial majority (93.4%, n=127) now exhibited adequate knowledge, contrasting sharply with the small percentages reporting moderate (0.7%, n=1) or inadequate (5.9%) understanding. A paired t-test confirmed this significant shift, with the mean post-test knowledge score (25.06 ± 2.900) being statistically significantly higher than the mean pre-test score (6.13 ± 4.279), evidenced by a t-value of 42.782 (p < 0.001).

Keywords: *Effectiveness, Planned Teaching, Knowledge, Vitamin A, Under Five, Mothers.*

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I. INTRODUCTION

Vitamin A is genuinely critical for the healthy growth and robust immune systems of young children. It plays a vital role in maintaining clear vision, strong immune function, and skin integrity. Adequate intake supports optimal development, effectively protecting against infections and promoting overall well-being. Conversely, Vitamin A deficiency can tragically cause night blindness, significantly increase infection risk, and even prove fatal. Recognizing this, the World Health Organization recommends routine supplementation for children 6-59 months in areas where deficiency poses a public health problem. Concerningly, many children in India, especially in rural and underprivileged areas, suffer from this deficiency. Addressing the issue requires crucial prophylactic measures like supplementation programs and educating mothers on Vitamin A-rich foods.

II. MATERIALS AND METHODS

➢ *Research Approach and Design*

We utilized a descriptive, cross-sectional design to gauge mothers' current understanding.

➢ *Setting and Population*

The present study was conducted at rural areas of Kuppam like Beggilipale, and Nalagampalli which are 2-3 kilometers away from the PES College of Nursing, Kuppam, Chittoor dist, Andhra Pradesh. These villages consist of approximately of 150 families.

➢ *Sample Size and Sampling Technique*

The sample size was calculated as 136 mothers, using Cochran's formula based on Utilizing convenient sampling, individuals were recruited based on their availability and willingness. The sample size derived from a 3.8% expected prevalence, a 95% confidence level, a 5% margin of error,

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and a 10% addition for anticipated non-response, referencing prior comparable studies.

➢ *Inclusion and Exclusion Criteria*

Mothers with children under five years living in the selected rural areas of Kuppam, utilizing Anganwadi services, and willing to give informed consent. Mothers unable to understand or respond to questionnaires in Telugu, Tamil, or English were excluded.

➢ *Data Collection Tool*

A detailed questionnaire was prepared, organized into two sections:

- *Section A:*

Consist of socio demographic data of the study subject like age, education, religion, marital status, education status, income.

- *Section B:*

A questionnaire assessed mothers' understanding of Vitamin A requirements, sources, deficiency, and prophylaxis among those with children under five years, focusing on foundational knowledge.

➢ *Validity and Reliability*

Content validity was established through expert review encompassing nursing, medicine, and statistics. Reliability, assessed during a pilot with ten excluded mothers, yielded a Cronbach's Alpha of 0.75.

➢ *Ethical Considerations*

Ethical clearance obtained from the IRC and Institutional Human Ethics Committee, PESIMSR Kuppam, allowed researchers to explain the procedure and secure patient attenders' written consent.

➢ *Data Collection and Analysis*

Data were meticulously tabulated and analyzed using SPSS. Descriptive statistics summarized demographics and knowledge levels (frequency, percentage, mean, SD). Inferential tests, like the Chi-square, explored associations between knowledge and demographics. Statistical significance was determined by a p-value below 0.05.

III. RESULTS

➢ *Demographic Profile of Participants*

A total of 136 mothers participated. The majority 41(30.1%) of the children were belongs to age group between 2-3 years months, majority 77 (56.6%) of the mothers belongs to age group <25 years, majority 66 (46.3%) of the mothers are having primry education, majority 82 (60.3%) of mothers are unemployed, majority 52 (38.2%) are having income below 10000, about 44.9 (44.9%) of mothers having two children, 80(58.8%) of mothers having nuclear family, about 76 (55.9%) of mothers received information, about 108 **(**79.4%) are doesn’t having vitamin a deficiency.

➢ *Knowledge Levels Regarding Nutritional Supplements*

Evaluating 136 mothers' pre-test knowledge regarding Vitamin A revealed only 2 (1.5%) had adequate understanding. A substantial 118 (86.8%) showed moderate knowledge, while 16 (11.7%) were inadequate. Post-test results demonstrated significant improvement: 127 (93.4%) achieved adequate knowledge, 1 (0.7%) had moderate, and 8 (5.9%) remained inadequate.

➢ *Association Between Knowledge Levels and Demographic Variables*

The study revealed no significant association between the knowledge of mothers of under-five children regarding vitamin A (including its requirements, sources, deficiency, and prophylaxis) and any demographic factors. This suggests that demographic characteristics did not play a significant role in influencing their understanding of vitamin A-related information.

IV. DISCUSSION

This study revealed alarmingly low baseline vitamin A knowledge (1.5% adequate) among mothers of under-five children, largely unemployed and with primary education. Crucially, a significant educational intervention dramatically improved knowledge, with 93.4% achieving adequacy post-test. Importantly, no significant association was found between knowledge levels and any demographic factors, indicating the intervention's broad effectiveness across diverse groups. These findings underscore the critical need and positive impact of targeted vitamin A health education, regardless of socioeconomic background.

V. CONCLUSION

A study revealed a striking knowledge gap among mothers of young children concerning vitamin A, with only 1.5% demonstrating adequate understanding. However, a targeted educational initiative proved exceptionally effective, elevating adequate knowledge to 93.4%. Significantly, this knowledge gain was independent of demographic factors, highlighting the universal benefit of such programs. This powerfully reinforces the critical role of accessible health education in enhancing maternal grasp of essential child nutrition.

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