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Level of Knowledge on Prevention of Calcium Deficiency Among Adolescent Girls

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ABSTRACT

Approximately 99% of total body calcium is found in the skeleton. Bone mass accrual continues from infancy through to early adulthood until peak bone mass is calcium intake is important for bone health throughout the lifespan and for the prevention of osteoporotic fractures in later years. Calcium intake of children and adolescents in Asia, especially in India, is relatively low in comparison to their Western counterparts. Various studies from India report low calcium intake and hypocalcaemia among young girls, emphasizing the importance of increasing calcium intake in children and adolescents. Hence this study was aimed to assess the knowledge regarding prevention of calcium deficiency among adolescent girls. The objectives of the study were to assess the knowledge regarding prevention of calcium deficiency among adolescent girls and to associate the knowledge level with selected demographic variables. The study was conducted in the Mahabalipuram village. A non- experimental descriptive research design was used. A total of 30 samples were selected by using systematic random sampling. The knowledge level of the samples was assessed using a structured questionnaire. The collected data were analysed using the descriptive statistics and inferential statistics. The study results revealed higher proportion (90%) of adolescent girls are having inadequate knowledge regarding prevention of calcium deficiency, there is also a significant relationship between age, religion, occupational status of mother and their knowledge score at the level of p<0.005. The study concludes that the nurse working at primary health centre should educate the adolescent girl during her school health programmes. Periodic health awareness camps should be organized at the village level targeting the adolescent girls. These awareness programmes will help to improve the knowledge among adolescent girls

KEYWORDS : Knowledge, calcium deficiency, adolescent girls.

INTRODUCTION:

India is known for its traditional, cultural and lingual diversity. It is a vast tropical country extending from 8.4º N latitude to 37.6° N latitude. Majority of its population lives in areas receiving ample sunlight throughout the year and hence there was disbelief that calcium deficiency is uncommon in India. However from the data available in the published literature, calcium deficiency is very common in India in all the age groups and both sexes across the country (**Vicrum londry, 2010).** Calcium deficiency is not only a problem in India but also countries like Pakistan, China, middle-East and Africa. It is relatively less common in Japan, USA, Canada and South-east Asia. ***Joanna et al* (2008)** revealed that deficiency of calcium in adolescence would lead to poor bone structure and lesser calcium reserves in the body. Calcium deficiency in adolescence pre-disposes women for osteoporosis later in life. Osteoporosis is a major public health problem; 40per cent of women will sustain an osteoporotic fracture. Maximizing peak bone mass at skeletal maturity may be one of the most important protective measures against fracture in later life. This period is a 'window of opportunity' especially for girls to build good calcium reserves and reduce the possibility of developing osteoporosis in adulthood. An increase in milk consumption among adolescent girls resulted in significant gains in bone mineral. According to a 2010 study published in *The Journal of Nutrition*, 86% of teen girls do not get enough calcium in their daily diets. While you may believe calcium is just a concern for older women, most are surprised to learn that teen girls actually require more calcium per day than even their mother or grandmothers. Calcium plays an important role in strengthening bones and teeth, as well as helping muscles (including the heart) and nerves function properly. With 95% of peak bone mass present by age 20, experts in bone health agree that getting the proper amount of daily calcium during these adolescent years is crucial. Many studies are carried out regarding age incidence, deficiency of Vitamin D, and deficiency of calcium. But few studies have been carried out in India on assessment of knowledge on prevention of calcium deficiency. Hence, this study was planned.

MATERIALS AND METHODS:

Research approach: quantitative descriptive research approach

Research design: non – experimental descriptive design

Settings of the study: Mahabalipuram village, Thirukazhukundam Block, Kancheepuram District

Population: adolescent girls in the age group of 13 - 19yrs.

Sample: adolescent girls in the age group of 13 - 19yrs who have met the inclusion criteria

Sample size: 30 adolescent girls in the age group of 13 - 19yrs who have met the inclusion criteria

Sampling Technique: systematic random sampling

Criteria for Selection of Sample:

Inclusion criteria: The inclusion criteria for the present study were:

- Adolescent girls who are willing to participate
- Adolescent girls who can understand and speak Tamil and English
- Adolescent girls in Annal Gandhi and Annal Ambadekar street of Mahabalipuram village

Exclusion criteria: The exclusion criteria for the present study were:

- Adolescent girls not available at the time of study.
- Adolescent girls with physical and psychological illness.
- Adolescent girls not available when randomly selected

Development and description of the tool: A structured interview schedule was developed based on the objectives of the study; through review of literature on related studies, journals, and books; opinion from the experts. The instrument used in this study consists of two sections which are as follows:

SECTION A: demographic data

SECTION B: It consisted of multiple choice questions which were pre-

pared to assess the knowledge regarding prevention of calcium deficiency among adolescent girls.

Method of scoring and interpretation: Each correct answer carries "1" mark and wrong answer carries '0' mark. The maximum score is '30'and the minimum score is '0'. According to the scores obtained by the samples, it was categorized as follows by the investigators.

- >76% - Adequate knowledge
- 51-75% - Moderately adequate knowledge
- < 50% - Inadequate knowledge.

Method of data collection: the data was collected using structured interview schedule.

RESULTS AND DISCUSSION:

The collected data were entered in data sheet and analyzed using descriptive and inferential statistics. The distributions of the demographic data of the study participants are majority (43%) of adolescent girls are in the age group of 16-17yrs. Majority (53.3%) of adolescent girls are Hindu. Majority (43%) of adolescent girls are educated up to higher secondary school level. Majority (26%) of adolescent girls mothers are educated up to primary school& middle school level. Majority (36%) of adolescent girls fathers are educated up to primary school level. Majority (33%) of adolescent girls mothers are house wife. Majority (36%) of adolescent are having their monthly family income of Rs 4810-8009. Higher proportion (93%) of adolescent girls are having vegetarian as their dietary pattern. Majority (33%) of adolescent girls fathers are professionals. More than half the proportions (53%) of adolescent girls are from nuclear family

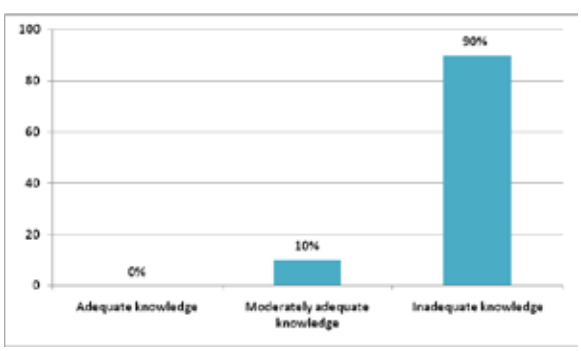

Table 1: shows the knowledge level of adolescent girls regarding the prevention of calcium deficiency.

Regarding the association between the knowledge level and the variables there is a significant relationship between age, religion, occupational status of mother and their knowledge score at the level of $p<0.005$. There was no signification with respect to other variables

CONCLUSION:

It is therefore conceivable that one approach to reducing the risk of osteoporosis may be provision of adequate calcium knowledge and intake during the formative years. By discovering what perceptions and concerns influence calcium consumption among adolescents, researchers can develop educational strategies that translate the benefits to adolescents in general. Further on discussion with these adolescent girls it was found that gender inequality is prevailing in the community. This would mean that more girls have low intakes, and that the problem is more severe than realised. Further research is needed to identify and change the attitudes and behaviours leading to low calcium intake, and to determine how best to communicate the important nutrient contribution of dairy products as part of a healthy diet.

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