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"A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAM ON KNOWLEDGE REGARDING THE IMPORTANCE OF CALCIUM INTAKE IN THE DIET AMONG THE SCHOOL CHILDREN IN SELECTED SCHOOLS AT BANGALORE"

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ABSTRACT :

Calcium is an important mineral component of our diet. It is chiefly available to us in milk and milk products, certain seafood, legumes and some vegetables. Over the last 3 to 4 decades, the clinical implications of calcium deficiency are being better recognized, and also deficiency of vitamin D is found which is very essential or the calcium absorption in the body. Calcium intake is highly variable and can be difficult to assess in school-age children. It can be used in both research and clinical settings to estimate calcium intake and would serve exceptionally well as a tool for identifying children or groups of children with low calcium intake who might benefit from nutrition interventions aimed at increasing calcium intake. The aim is to assess the knowledge regarding the importance of calcium intake in the diet among the school children in selected schools at Bangalore."

OBJECTIVESOFTHESTUDY

To deter mine the knowledge regarding the importance of calcium intake in the diet among school children.
To assess the effectiveness of structured teaching program on knowledge among school children regarding the importance of calcium intake in diet.
To find the association between knowledge regarding the importance of calcium in the diet among school children with the selected demographic variables.

HYPOTHESIS

H1: There will be significant difference between the mean pre-test and mean post-test Knowledge score of children regarding the importance of calcium intake in the diet.
H2: There will be significant association between the pre-test knowledge score with selected demographic variables, such as age, sex, education, socio-economic status.

MAJOR FINDINGS AND RESEARCH

Results shown that 36(60.0%) had moderate (51-75%) knowledge scores, 24(40.0%) had Inadequate (≤ 50 %) knowledge scores and only during pre-test. Whereas in post-test 42(70.0%) participants had adequate knowledge scores and only 18(30.0%) had moderately adequate knowledge scores. The chi square value is 72.00 at 0.05% level of significance...The present study revealed that there is association of chi-square test to work out determine between the level of knowledge in selected demographic variables such as age group, Sex of the child, Class studying, Number of siblings, religion, type of family, Family income/month, Marital status of Parents, Education of Father, Education of Mother, Occupation of Father, Occupation of Mother, Leisure time activities, Common food used in food habit. In pretest out of these variables the knowledge is significantly associated with the age group($\chi2=5.48$,,$p<0.05$),sex of the child($\chi2=4.57$,$p<0.05$),Class studying($\chi2=6.00$,$p<0.05$),Number of siblings($\chi2=7.14$,$p<0.05$), type of family($\chi2=4.92$,$p<0.05$).Marital status of Parents ($\chi2=5.22$,$p<0.05$) at 0.05 level none of the other variables have found to be significantly associated with knowledge In posttest knowledge is significantly associated with the age group($\chi2=5.70$,,$p<0.05$),sex of the child($\chi2=4.00$,$p<0.05$),Number of siblings($\chi2=9.78$,$p<0.05$),religion($\chi2=6.53$,$p<0.05$).type of family($\chi2=6.17$,$p<0.05$), occupation of father($\chi2=6.72$,$p<0.05$),occupation of mother($\chi2=11.87$,$p<0.05$)
Leisure time activities ($\chi2=8.59$,$p<0.05$) at 0.05 level none of the other variables have found to be significantly associated with knowledge.

INTERPRETATION AND CONCLUSION

The findings of the study support the need for increasing knowledge regarding the importance of calcium intake in the diet. The study proved that moderate and inadequate knowledge regarding the importance of calcium intake in the diet among the school children.

INTRODUCTION :

Calcium is an important mineral component of our diet. It is chiefly available to
us in milk and milk products, certain seafood, legumes and some vegetables. Over the last 3 to 4 decades, the clinical implications of calcium deficiency are being better
recognized, and also deficiency of vitamin D is found which is very essential or the
calcium absorption in the body.

Calcium is a mineral used by the body to keep our bone and teeth strong. It also plays a role in muscle contraction and transmission of impulses through central nervous system, regulation of heart beat and in blood clotting.

Calcium is 5th most abundant element found on earth it is the most prevalent mineral found in the human body between 1Kg- 1.4 Kg of calcium usually contained in an average healthy man. Approximately 99% of calcium is also located in bones teeth in the form of calcium phosphate. The main source of calcium are dairy product, milk, yoghurt & cheese and also smaller amount, can be found in green leafy vegetable like broccoli & spinach, almond, brazil nuts fish with small bone.

As we consider school children, it is important to include calcium in diet to build bone while they are still growing. If they are not getting sufficient calcium in diet it can make their body draw it from the bones, which makes them weaker & more easily broken. If not enough calcium is supplied at a young age leads to problems later in life such as osteoporosis (a condition characterized by weak bones).

Optimum nutrition can be attained by eating 3 meals a day and two nutritious
snakes, as well as limiting the intake of high sugar and high fat food. Consuming
generous amount of fruits, vegetables, lean meats, and low fat dairy products, which also includes 3 servings of milk, cheese or yogurt will meet the calcium requirements. Adequate nutrition for small children will also ensure their full potential and provide stepping stone to healthy life.

NEED FOR THE STUDY

Many studies are done to find the importance of calcium in diet for school children. Among those some are mainly suggesting that intake of calcium is very essential for the bone health and teeth especially in school children. Children will come across deficiency of many micro nutrients, among those deficiencies calcium deficiency is considered with immense importance.

Recently conducted study supports the possibility of low bone mass may it contribute to fracture in children moulding et al reported by Wishek & Frisch, first to report as the high calcium intake were associated with protective against fracture in the adolescent boys and girls . Here the comparative study was conducted between 100 girls (3-15 years of age) with the distal forearm fracture, compared with the age matched control girls. The results reported that the girls belongs to age groups 11-15 years of old were of lower calcium intake in the diet After the 4 years follow up of the same study shows that girls contributed to increase increased rate of bone fracture

Same kind of study conducted among the boys with distal forearm fracture, the investigator found that increased number of fracture is found in those children who avoid milk in their daily diet.

OBJECTIVES

OBJECTIVES OF THE STUDY:-

1. To determine the knowledge regarding the importance of calcium intake in the diet among school children.
2. To assess the effectiveness of structured teaching program on knowledge among school children regarding the importance of calcium intake in diet.
3. To find the association between knowledge regarding the importance of calcium in the diet among school children with the selected demographic variables.

OPERATIONAL DEFINITIONS:-

EFFECTIVENESS:-
It refers to the significant changes brought by the structured teaching program in terms of knowledge gained by the children which is assessed by the pre test and post test knowledge score.

KNOWLEDGE:-
It refers to improvement in the knowledge regarding the importance of calcium intake in diet among school children as assessed by the response to the structured knowledge questionnaire.

STRUCTURED TEACHING PROGRAMME:-

It is a series of systematically organized teaching method in order to teach school children regarding the importance of calcium intake in the diet. The content in this type of teaching include meaning, sources, nutritional requirements deficiencies and preventive measures. It is intended to provide information within 45 min with the help of AV Aids like flash cards, charts flip charts, power point presentation used to the children for individual teaching. This will be prepared by the researchers and validated by the experts.

CALCIUM: -

Calcium is a mineral that is essential for many aspects of health including the health of bones and teeth, and a normal heart rhythm.

CALCIUM INTAKE IN DIET:-

It refers to the recommended dietary allowance of calcium i.e. average daily intake sufficient to meet the nutrient requirements. It is up to 2,500 3000mg of calcium from dietary sources and supplements appear to be safe for children and adolescence.

DELIMITATIONS:-
Study will be limited to

1. Children of selected school at Bangalore.
2. Children of age group 6-14 years of age.

HYPOTHESIS:-
H1: There will be significant difference between the mean pre-test and mean post-test Knowledge score of children regarding the importance of calcium intake in the diet.
H2: There will be significant association between the pre-test knowledge score with
Selected demographic variables, such as age, sex, education, socioeconomic status etc

CONCEPTUAL FRAMEWORK
Conceptual framework is an abstraction that is assembled together in some
Rational scheme by virtue of their relevance to a common theme.
Conceptual framework is a theoretical approach to the study of problems that are
Scientifically based, which emphasizes the selection, arrangement and classification of its concepts. A conceptual framework states functional relationship between events and is not limited to statistical relationships.
The conceptual framework of the present study was developed by the investigator
based on Bertanlanffy’s general system theory. This consists of components like,

- Input
- Throughput
- Output
- Feedback

Bertanlanffy’s general system theory (1968) describes a set of interacting components of a boundary that filters the type and rate of exchange of energy, materials and information with the environment.

They are characterized by,

- Input of energy into the system.
- Through put during which the system process, changes and recognizes imported energy.
- Output of energy into the environment in the form of goods, services and intellectual products.
- Feedback by which a part of the output returns to the system.

In the present study the school children were considered as an open system because they receive the information from the environment. The system uses this input to maintain homeostasis.

Input
The first component of a system is input, which is the information energy or matter that enters a system. For a system to work well, the input should contribute to achieve the purpose of the system. It refers to development of the structured teaching programme, self-administered knowledge questionnaire, and questionnaire related to demographic variables. These factors were taken into consideration on input for evaluation of effectiveness in bringing out change in the knowledge level of school children.

 Throughput/ process

The action needed to accomplish the desired task. To achieve the desired task in this study that is to assess the effectiveness of the structured teaching programme regarding the importance of calcium intake in the diet the following process was adopted. The knowledge should be assessed before and after the self-administered knowledge questionnaire. The structured teaching programme was administered by implementing the lecture method.

 Output

After the throughput process and the input, the system returns output to the
environment in an altered state, the end result or product of the system. Output varies widely depending on the type and purpose of the system affecting the environment. Here the output refers to the outcome in knowledge based on comparison of pre-test and post test knowledge score. If the knowledge level is found negative outcome, rectification can be done by strengthening the existing knowledge through continuous monitoring, which is not under the purview of the study.

 Feedback

The process of communicating was found in evaluation of the system. Feedback can
be measured by the output whether the knowledge is positive outcome or negative
outcome that is if the school children gain adequate knowledge after the administration of structured teaching programme on the importance of calcium intake in the diet. The developed structured teaching programme will be considered as a useful method to update the school children knowledge of importance of calcium intake in the diet. If the knowledge gained was inadequate it refers to be reassessed which is not included in the study

REVIEW OF LITERATURE :

Review of literature is a key step in research process. Review of literature refers
to an extensive, exhaustive and systematic examination of publications relevant to the research project .Before any research can be started whether it is a single study or an extended project, literature reviews of previous studies and experiences related to proposed investigations should be done. One of the most satisfying aspects of the literature review is the contribution it makes to the new knowledge, insight and general scholarship of the researcher.

SECTION A: Review of literature on Knowledge of children regarding the intake of
calcium in diet:-

A study was conducted on appendicle bone mass in children with high
prevalence of low dietary calcium intake. The aim of the study was to determine the bone mass of the distal one third of the radius. A random sample of children in the same community is compared with bone mass measurement with those black children living in a similar rural community but without the evidence of the dietary calcium deficiency. A sample of 306 boys and 345 girls between the age of 1 to 20 years were included in the study The study result showed that Hypocalcaemia is found in 65% of boys and 5% of girls while the evaluated values are recorded in 20 and 26 % of boys and girls respectively.

As per the conclusion of the study it states that after adjusting the difference in age, weight and height, bone mineral density and bone mineral apparent density (BMAD) were significantly lower and bone width greater in study group children than in the control children.

A study on positive effect on consumption of fruits and vegetables, calcium intake
on bone mineral accuracy in boys during growth from childhood to adolescence The
main aim of the study was to ascertain the role of consumption of milk products and
vegetables and fruits in the accrual of total – body bone mineral content (TBBMC) in
boys and girls from childhood to late adolescents. Sample of the study is about 85 boys and 67girls aged 8-20years of age. A longitudinal study was conducted and the dietary intake was assessed by 24 hours recall. The result shows that the most boys met recommended milk product intake and few subjects (<30%) consumed vegetables and fruits in recommended amounts. The study concludes that in addition to adequate dietary calcium intake appropriate intake of vegetables and fruits, which have beneficial effect on TBBMC in boys, aged 8-20 years.

The study was conducted on the effect of high calcium dairy food on bone health
in pre-pubertal children at Newzeland. This was a randomized controlled study and aim was to assess the effect of calcium enriched, coca flavoured product on bone density, bone growth and bone size among the boys and girls 8-10 years of age (in Newzeland). The sample of 154 pre-pubertal boys and girls (aged 8-10 years) were randomly selected are those receives a high calcium dairy drinks/controlled drink reconstitute with water for 18 months. After every 6 months for the first 18 months they were followed with supplementation. There were no significant changes found in the result. The body compositions are also remained same. It shows that calcium supplementation in children with high habitual dietary calcium intake appears no additional effects on bone mass. The conclusion of study says, calcium supplementation needs for those targeted children with low habitual dietary calcium intake.

SECTION B: Review of literature based on effectiveness of structured teaching

programme:-

A study was conducted on the evaluation of daily intake of calcium and vitamin D

in healthy children method used in this study was randomized control study and that was conducted with 2 group of children the main aim to demonstrate the efficacy of calcium and vitamin D. The sample of the study was healthy children (50% mean age of 10 years) at the baseline vitamin D intake was obtained in all subjects (median 0.79µg/die, IQR 1.78; range 0.01-5.02) This condition is associated with calcium intake <70% of daily recommended intake in 82 subjects (55%). At baseline serum 25(OH)D level when low (<30ng/ml) in all study subjects and after 4 months of nutritional interventions. This study concludes as adequate calcium and vitamin D intake are difficult to obtain through dietary counselling alone, in paediatrics; oral supplementation is a reliable strategy to prevent this condition.

A hospital based study revealed that the prevalence of clinical evidence of vitamin
D deficiency in 5-15 yrs. old children has been shown to be 0.19 per cent though
objective diagnostic criteria were not mentioned. In children of Indian origin residing in South Africa, the prevalence of knock knees and bow legs with gaps of 2.5 cm or more was 6.1-19.4 per cent. In Asian migrants in the United Kingdom, the prevalence of clinical vitamin D deficiency in children and adolescents was shown to be 5 to 30 percent, while in studies using biochemical and radiological variables, prevalence was 12.5 to 66 percent.

METHODOLOGY :

‘’Consciousness is an electrochemical function of the nervous system. Insert a new chemical into the brain and consciousness changes radically”- Sigmund Freud Research methods are the techniques or methods utilized by researchers in performing research operations. Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically.
This chapter presents the methodology adopted by the investigator to find out the knowledge regarding the importance of calcium intake in the diet among the school children in selected schools at Bangalore. It includes the Research approach, Research design, Setting, Population, Sampling criteria for sample selection, Sampling technique, Description of tool, Testing of tools, Pilot study, Procedure for data collection, Plan for data analysis.

SAMPLE SIZE ESTIMATION
Researcher conducted “A study to assess the effectiveness of structured teaching program on knowledge regarding the importance of calcium intake in the diet among the school children in selected schools at Bangalore.” The sample size was calculated based on comparison of means with standard deviation (6.3) of the pilot study findings assuming 80% power, at 0.05 level of significance and 3.0 differences. Z1-

RESULTS :

Property may be destroyed and money may lose its purchasing power; but character, health, knowledge and good judgment will always be in demand under all conditions. - Roger Babson Analysis is the process of organizing and synthesizing the data in such a way that research questions can be answered and hypothesis is tested. The purpose of the analysis is to reduce the data in an intelligible and interpretable form, so that the relation of research problem can be studied and tested. (Basavantappa.B.T.Nursing research. Jaypee brothers, New Delhi, 1998) This chapter presents the analysis and interpretation of data collected from 80 school children’ s in selected schools at Bangalore .by using self-administered knowledge questionnaire. The purpose of the data analysis is to translate the information collected during the course of the study into interpretable form so that the research question could be answered. Data gathered was analyzed using descriptive and inferential statistics. The analysis of the data of present study has been organized in relation to the objectives and
hypothesis of the study.

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HYPOTHESIS:-

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H2: There will be significant association between the pre-test knowledge score with Selected demographic variables, such as age, sex, education, socioeconomic status ORGANISATION OF FINDINGS

DISCUSSION :

The discussion brings the research report to a closure. A well-developed discussion section “makes sense” of the research results. This is the most important section of any research report.

The findings of the present study have been discussed with reference to the objectives, hypothesis pertaining to the research problem. The findings of the study are discussed with reference to the results obtained by other investigator.

The study was descriptive in nature. It was conducted among school children in selected schools at Bangalore. The primary purpose of the study was to find out the knowledge of school children towards importance of calcium intake in the diet. The study was conducted during the period to.
The instrument used for the study consisted of 2 sections.
Section-1: Socio demographic variables.
Section-2: Knowledge questionnaire.

CONCLUSION :

Calcium is an important mineral component of our diet. It is chiefly available to us in milk and milk products, certain seafood, legumes and some vegetables. Over the last 3 to 4 decades, the clinical implications of calcium deficiency are being better recognized, and also deficiency of vitamin D is found which is very essential or the calcium absorption in the body. Calcium intake is highly variable and can be difficult to assess in school-age children. It can be used in both research and clinical settings to estimate calcium intake and would serve exceptionally well as a tool for identifying children or groups of children with low calcium intake who might benefit from nutrition interventions aimed at increasing calcium intake.

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 To assess the effectiveness of structured teaching program on knowledge among school children regarding the importance of calcium intake in diet.
 To find the association between knowledge regarding the importance of calcium in the diet among school children with the selected demographic variables.

This chapter suggested ways and means that could be adopted in the future to improve the knowledge regarding importance of calcium intake in the diet among school children and prevent the calcium risk among them. This chapter dealt with limitations, suggestions, and recommendations of the study.

SUMMARY :

This chapter deals with the summary of the study. It discusses the Statement of the problem, Objectives, Hypotheses, Assumptions and Major findings of the study. The purpose of the study was to assess the effectiveness of structured teaching programme on knowledge regarding the importance of calcium intake in the diet among the school children in selected schools at Bangalore. The study was conducted in selected schools at Bangalore about 60 school children elected by using Simple random sampling technique. The investigator obtained the permission from the Principal from selected schools at Bangalore for conducting the study.

STATEMENT OF THE PROBLEM

“A study to assess the effectiveness of structured teaching program on knowledge regarding the importance of calcium intake in the diet among the school children in selected schools at Bangalore”

OBJECTIVES OF THE STUDY

1. To determine the knowledge regarding the importance of calcium intake in the diet among school children.
2. To assess the effectiveness of structured teaching program on knowledge among school children regarding the importance of calcium intake in diet.
3. To find the association between knowledge regarding the importance of calcium in the diet among school children with the selected demographic variables.

ASSUMPTIONS

The investigator assumes that:
 It is assumed that children will gain some knowledge regarding the importance of calcium in the diet among school children.
 It is assumed that knowledge of children may vary with selected demographic variables such as, age, sex, education. Socio economic status.

CONCEPTUAL FRAME WORK

Conceptual framework is an abstraction that is assembled together in some rational scheme by virtue of their relevance to a common theme. Conceptual framework is a theoretical approach to the study of problems that are scientifically based, which emphasizes the selection, arrangement and classification of its concepts. A conceptual framework states functional relationship between events and is not limited to statistical relationships. The conceptual framework of the present study was developed by the investigator based on Bertanlanffy’s general system theory

BIBLIOGRAPHY :

1. Bhatia Department of Endocrinology, Sanjay Gandhi Postgraduate Institute of Medical Sciences Lucknow, India Indian Jmed Res 127, March2008, PP269- Dietary Calcium intake a critical reappraisal 273 V. http://icmr.nic.in/ijmr/2008/march/0309.pdf.
2. https://healthy-kids.com.au/kids/high-school-2/calcium/
3. http://www.essayempire.com/customessay/health-research-papers/anatomyphysiology- paper-topics/7093.html
4. https://healthy-kids.com.au/kids/high-school-2/calcium/
5. Vitamins-and supplements/lifestyles guide -11/Supplement- guidecalciumwww. webmed.com/.
6. http://nutritionfoundationofindia.org/PPT-2011/Seven17-18teen/Dr-BSesikeran. pdf)
7. http://bellamysorganic.com.au/blog/calcium-and-its-importance-in-a-childsdiet/#. Vu1rg-J97IU)
8. Medical Author:CoburnHobar, MDeditor: WILLIAM C. SHIEL JR., MD, FACP, FACRhttp://www.emedicinehealth.com/osteoporosis_and_calcium/page7_em.ht ml
9. Nutrition for school children www.myvmc.com /life styles/nutrition for schoolchildren
10. http://www.healthline.com/health/calcium-deficiency-disease#Treatment5 119
11. Risks of Calcium Deficiency in Kids.http://www.indiaparenting.com/food-andnutrition/ 56_6122/risks-of-calcium- deficiency-in-kids.html
12. https://schoolnutrition.org/uploadedFiles/5_News_and_Publications/4_The_Journ al_of_Child_Nutrition_and_Management/Fall_2005/6-garden.pdf
13. https://www.myvmc.com/lifestyles/nutrition-for-school-children
14. http://www.healthybones.com.au/Resources/Calcium%20Planner.aspx.
15. www.fasebj.org/doi/abs/10.1096/fasebj.30.1_supplement.1172.14
16. www.stanfordchildrens.org/en/topic/default?id=school-aged-child-nutrition--90...
17. The most important function of Vitamin D is that it regulates the amount of calcium and phosphorous in the body - both are elements that are vital for strong bones, teeth and also to keep your muscles healthy. Updated : March 29, 2018 14:40 IST
18. Kids Health> Parents> Growth & Development> Feeding & Eating> Calcium and Your Child. http://kidshealth.org/en/parents/calcium.html
19. http://www.indianpediatrics.net/dec2007/dec-893-895.html
20. Eshraghian4 ;ArezooRezazadeh 1 ; Saloumeh Armin 5 ; HomaHaidari 5 ; TelmaZowghi5 Calcium Intake, Major Dietary Sources and Bone Health Indicators in Iranian Primary School Children NasrinOmidvar 1,*; Tirang- Reza Neyestani 2 ; MajidHajifaraji3 ; Mohammad-Reza http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4505966/pdf/ijp-25-177.pdf
21. VarunAggarwal, Anju Seth, SatinderAneja, Bhawna Sharma, PitamberSonkar, SatveerSingh, Raman K. Marwaha Volume: 97 Issue: 10 , Role of Calcium Deficiency inDevelopment of Nutritional Rickets in Indian Children: A Case 120 Control Study The Journal of Clinical Endocrinology & Metabolism.Published online:14 Aug 2012 http://press.endocrine.org/doi/10.1210/jc.2011-3120
22. Craviar T, Pettifor J M, Thacher T D,MeinserC,Arnand J, Fischer PR. Rickets an overview and future direction, with special reference to Bangladesh. A summary of the Rickets Convergence Group meeting Health PoplNutr.2008 Mar;26(1):p.112-21.http://www.ncbi.nlm.nih.gov/pubmed/18637536
23. http://www.healthybones.com.au/Resources/Calcium%20Planner.aspx
24. Tanaka H.Nutrition and bone health during childhood.Clin Calcium. 2008Oct;18(10):1504-9. https://www.ncbi.nlm.nih.gov/pubmed/18830048
25. Times News network Bones brittle, but not spirit Times of India, Bangalore, Monday, June 22, 2009
26. http://www.indianpediatrics.net/dec2007/dec-893-895.html
27. Pettifor JM1, Moodley GP.1Department of Pediatrics, University of the Witwatersrand, Johannesburg, South Africa J Bone Miner Res. Appendicular bone mass in children with a high prevalence of low dietary calcium intakes. 1997 Nov; 12(11):1824-32 http://www.ncbi.nlm.nih.gov/pubmed/9383687
28. Prashanth Prakash,1Priya Subramaniam,2 B.H. Durgesh,3 and Sapna Konde4 Prevalence of early childhood caries and associated risk factors in preschool children of urban Bangalore, India: A cross-sectional study. Eur J Dent. 2012 Apr; 6(2): 141–152. PMCID: PMC3327493. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3327493/
29. Denise. F. Polit, Nursing research, Principles & methods, 7th edition, page no: 88 – 89. 121
30. Pettifor JM1, Moodley GP.1Department of Pediatrics, University of theWitwatersrand, Johannesburg, South Africa J Bone Miner Res. Appendicular bone mass in children with a high prevalence of low dietary calcium intakes. 1997 Nov;12(11):1824-32.
31. Vatanparast H1, Baxter-Jones A, Faulkner RA, Bailey DA, Whiting SJ1College of Pharmacy and Nutrition, University of Saskatchewan, Saskatoon, Canada.Positive effects of vegetable and fruit consumption and calcium intake on bone mineral accrual in boys during growth from childhood to adolescence: the University of Saskatchewan Pediatric Bone Mineral Accrual Study.vatan.h@usask.ca .Am J ClinNutr. 2005 Sep;82(3):700-6.
32. Gibbons MJ1, Gilchrist NL, Frampton C, Maguire P, Reilly PH, March RL, Wall CR. 1CGM Research Trust, PO Box 731, Christchurch, New Zealand. The effects of a highcalcium dairy food on bone health in pre-pubertal children in New Zealand. m.j.gibbons@massey.ac.nz. Asia Pac J ClinNutr. 2004; 13(4):341-7.
33. Winzenberg TM1, Shaw K, Fryer J, Jones G. Cochrane Database Syst1University of Tasmania, Menzies Research Institute, Private Bag 23, Hobart, TAS, Australia, 7001. Calcium supplementation for improving bone mineral density in children.tania.winzenberg@utas.edu.au
34. Nasrin Omidvar,1,* Tirang-Reza Neyestani,2 Majid Hajifaraji,3 Mohammad- RezaEshraghian,4 Arezoo Rezazadeh,1 Saloumeh Armin,5 Homa Haidari,5 and Telma Zowghi5Calcium Intake, Major Dietary Sources and Bone Health Indicators in Iranian Primary School Children. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4505966/ 120
35. Aggarwal V1, Seth A, Aneja S, Sharma B, Sonkar P, Singh S, Marwaha RK ClinEndocrinolMetab. Role of calcium deficiency in development of nutritional rickets in Indian children: a case control study. 2012 Oct;97(10):3461-6. doi: 10.1210/jc.2011-3120. Epub 2012 Aug 14. http://www.ncbi.nlm.nih.gov/pubmed/22893720