

Abstract

Calcium needs of adolescents from approximately nine to twenty years of age. This period represents the time of greatest skeletal growth and achieve peak bone mass. Calcium intake, physical activity and socio economic affect on bone mineral density and low bone density during adolescent period will leads to fractures in later life. The objective of this study was to determine relationship between calcium in take and bone mineral density of adolescent girls in rural sector and determine the relationship between lifestyle factors between bone mineral density among school girls in rural sector. Study was carried out as cross sectional study. Total of 567 school girls age between 11 to 16 years were selected from Pannala Education Division. Dietary information, physical activity records, general information and consumption frequency of foods were gathered. Anthropometric data, weight, height, waist and hip circumference, bone mineral density (BMD) and bore mineral content (BMC) were measured. Only 150 questionnaires were analyzed (30 from each grade). Mean calcium intake 387.7mg (\pm 175.8) was significantly lower than the recommended value ($P=0.000$) but difference of mean calcium intake of different age group were not significant ($P> 0.05$). Calcium intake does not significantly affect on BMC & BMD, ($p=0.192$), ($p=0.598$) respectively. Physical activity significantly affect on BMC. ($p= 0.024$). weight and body mass index (BMI) had a significant relationship with BMD ($p=0.000$), ($p=0.002$) respectively. Both family income and education level of the parents were not significantly influenced on calcium intake ($P=0.131$) and ($P =0.846$) respectively. Iron intake significantly higher than recommended value ($p=0.000$). Most age groups Vitamin C intake also higher than the RDA value. Milk powder was the major calcium source and 13.4g consumed per day. Dietary calcium intake does not significantly affect on BMD and BMC. But physical activity weight and BMI had a significant effect on BMD of adolescent girls in rural sector.