Effect of Nutrition on Dental and Skeletal Maturation Stage: A Brief Report

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Citation

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Abstract

Animal studies have shown that under-nourishment alters skeletal maturation stage and growth.[1,2] Malnourished children have shown significantly slower skeletal maturation rate and delayed puberty.[3,4] Tooth eruption has a poor correlation with general body and facial growth as compared to skeletal maturation.[5] In our previous study we reported that calcification pattern of the mandibular second molar has been highly correlated with skeletal maturation events[6].

To our best knowledge, no previous study in Indian has simultaneously analyzed the possible influence of growth stunting on skeletal maturation and dental development evaluated through radiographs in preaddesents and adolescents. The objective of this study was to evaluate whether malnutrition status was associated with maturation stages of the medium phalanx of the third finger (MP3) and dental development of mandibular second molar in north Indian children.

A sample of 40 school children aged between (B-16) years were selected from out patient Department Govt Dental College, PGIMS, Rohtak (India). All the children were from at least one previous generation of ancestors without any clinically determined chronic medical disease or syndrome. Skeletal maturation was evaluated through a periapical radiograph of the MP_3 from the hand (Dept of Orthodontics, Govt Dental College, PGIMS, Rohtak (India). The maturation stage selective to the peak of high velocity was determined for each individual using five-point ordinal scale as in the previous study.[8] Demirijian et al. classification for the mandibular second molar was used. All the data were analyzed with SPSS statistical (SPSS 7.0).

Figure 1

Table 1: Skeletal maturation stage of the MP and dental development stage of second molar.

	E	F	G	H
Skeletal F	13	34	15	5
Maturation FG	2	17	32	1.2
Stage G	1	3	46	23
H	0	2	15	80
I	0	0	5	13

There was a highly statistically significant difference for skeletal maturation and dental developmental stage in gender ($p<0.01$) while no statistically significance difference for skeletal maturation and dental developmental stage according to nutrition was found. Malnutrition was not associated with dental developmental and skeletal maturity stages in north of India.

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