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VI:

Assessment of Deciduous Dentition in Guatemalan Children*

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Most of the studies carried out in regard to the dental condition of malnourished infants and children have been mainly descriptive of changes in the enamel, presence of caries and oral hygiene.[1 4]

It is often said that deciduous teeth eruption is delayed in malnourished infants,[2 6] although to our knowledge there is little or no evidence that this is the case.[7]

The purpose of this communication is to present data regarding the pattern of decidual teeth eruption in three groups of children with different nutritional status, ranging from well nourished to severely malnourished.

Materials and Methods

A total of 715 Guatemalan infants and children of both sexes, of Mayan, "Mestizo", or Caucasian extraction were studied and classified within the following three groups: well nourished; mild-to-moderately malnourished (undernourished), and severely malnourished.

Well nourished: A total of 257 healthy children (WN), all belonging to middle and upper socio-economic groups, were selected from the private clientele of three pediatricians of the capital city of Guatemala.

None of them had recent history of moderate or severe illness. Their growth pattern conformed to the standards for normal populations.[8 9]

Undernourished: The group defined as undernourished (Un) was selected from the rural population sample studied during the Central American nutrition survey carried out by INCAP and the Office for International Research (OIR) in 1965-1968.[4]

Data were available in 311 children. In general, the parameter weight-for-age in this group was 78% of the Boston 50th percentile values, thus indicating a certain degree of growth retardation.

Malnourished: The severely malnourished (Mn) infants and children, which numbered a total of 147, were studied at the pediatric wards of three general hospitals, two of them located in Guatemala City and the third one in a village close to the same city. All of them had been clinically diagnosed as cases of severe protein-calorie malnutrition.

All of the children studied were between the ages of 3 and 48 months at the time of their examination. They were grouped by chronologic age, in months, as follows: from 3-6; 6-12; 12 18; 18-24; 24-30; 30-36; 36-42, and from 42 to 48.

Results

Table I shows the number of teeth erupted according to each age group and their respective nutritional status. During the first 18 months of life no difference was observed among the eight groups studied. However, at the age of 18 to 24 months, the group of undernourished children showed retardation in teeth eruption, and from 24 months on, the well nourished children differed from the malnourished and undernourished children in that, paradoxically, the former group presented a significant level of retardation. (Fig. 1).

For the purpose of calculating the Chi square tests, the children were grouped by age at 6 month intervals up to 30 months of age, and a single group comprised those aged 30-42 months old (Table II). Additionally, a Chi square test was carried out for the collapsed age groups from 24-42 months.

The latter included the children in the 24-30 month group, in which no significant difference was observed, even though they presented the same trend.

Discussion

Based on the present evidence, we can conclude that there is no retardation in teeth eruption in malnourished children comprised between 3 and 48 months of age. On the contrary, it appears that severely malnourished and under-nourished children above 24 months old have a greater number of erupted teeth than well nourished children of similar ages.

Summary

The number of erupted teeth was assessed in 715 Guatemalan children from 3 to 48 months of age. They were either well nourished, chronically undernourished, or severely malnourished. Teeth eruption in the severely malnourished or undernourished children was not retarded when compared to well nourished children of similar ages. On the contrary, teeth eruption in the two former groups was significantly more advanced than in the well nourished group after 24 months of age.

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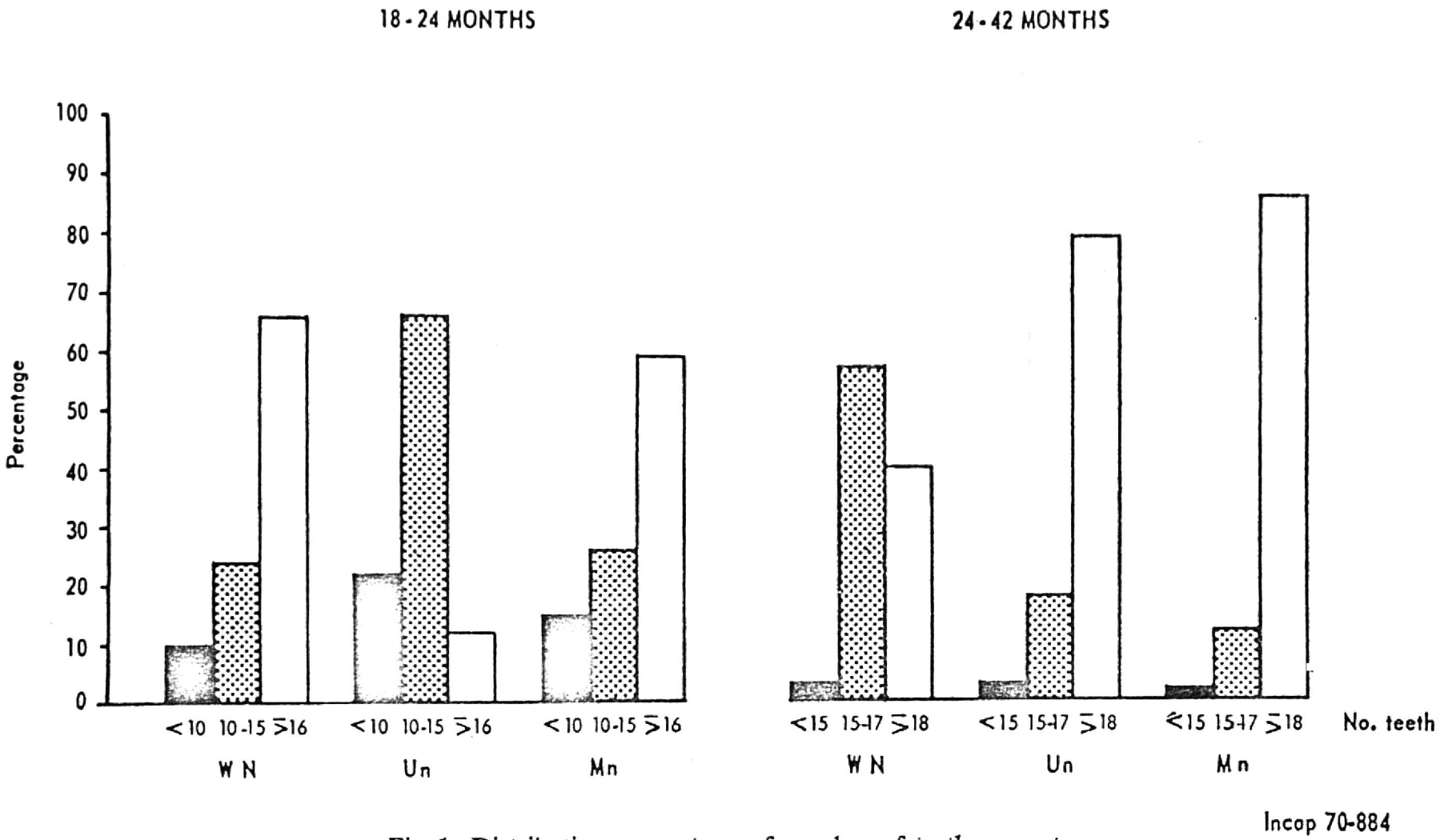

Fig 1: Distribution percentage of number of teeth present according to age groups and nutritional status.

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TABLE I. Distribution of total number of teeth present according to age groups and nutritional status

No of teeth	Age groups (months)																							
	3 — 6			6 — 12			12 — 18			18 — 24			24 — 30			30 — 36			36 — 42			42 — 48		
	WN	Un	Mn	WN	Un	Mn	WN	Un	Mn	WN	Un	Mn	WN	Un	Mn	WN	Un	Mn	WN	Un	Mn	WN	Un	Mn
0	35	27	5	22	17	11	5	–	–	1	–	–	–	–	–									
1	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–									
2	4	1	1	10	9	4	4	–	3	–	–	1	–	–	–									
3	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–									
4	–	–	–	2	3	2	3	3	1	–	–	2	–	–	–									
5	–	–	–	3	1	2	2	1	3	–	–	–	–	–	–									
6	–	–	–	6	3	2	5	6	2	–	–	–	–	–	–									
7	–	–	–	–	–	1	3	–	2	–	–	–	–	–	–									
8	–	–	1	4	6	1	19	14	12	3	4	–	1	–	–									
9	–	–	–	–	–	–	1	2	1	–	1	1	–	3	–									
10				–	–	–	1	5	5	–	4	–	–	–	–									
11				–	–	–	–	–	1	–	1	–	–	–	–									
12				–	–	2	13	5	5	8	12	1	–	–	–									–	1	–
13							–	–	1	–	–	1	–	–	1										
14							1	1	5	1	2	2	–	1	–	1	–	–							
15							–	–	–	–	12	3	–	–	–	–	–	–							
16							7	–	2	25	–	12	15	24	2	16	3	–	4	2	–	3	1	1
17							–	–	–	–	–	1	1	–	2	–	–	–							
18							–	1	–	–	–	1	–	1	3	–	1	–							
19										–	–	–	–	1	–	–	1	–	–	–	2			
20										–	5	2	4	10	2	10	21	11	5	51	12	9	43	7
Total	39	28	7	48	40	27	64	38	43	38	41	27	21	40	10	27	26	11	9	53	14	12	45	8

WN = well nourished
Un = undernourished
Mn = malnourished

TABLE II. Chi square tests among the groups studied

Age groups months	x^2	Statistical significance
3 – 6	4·16	N.S.
6 – 12	1·514	N.S.
12 – 18	6·960	N.S.
18 – 24	27·346	**
24 – 30	4·187	N.S.
30 – 42	57·31	**
24 – 42	42·735	**

N.S. = Not significant
** = Highly significant