

## Traumatize anterior teeth, dento-facial anomalies among deaf person in the middle region of Iraq

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### Abstract:

This study was designed to determine the type and prevalence of traumatic dental injuries, antero-posterior molar relation among (519) deaf persons and (532) school students at 5-16 years of age in the middle region of Iraq. The study showed that the prevalence of traumatic dental injuries were 6.94% for deaf persons and 5.83% for schools students. Males showed a higher percentage of traumatized teeth than females in institutions and school students. Enamel dentine fracture without pulp exposure was the most predominant type among deaf persons while simple enamel fracture was the most predominant among schools students. The majority of deaf persons and schools students demonstrated normal type of occlusion 57.42%, 55.64% respectively. Deaf person showed significantly with percentage of 4.62% mesial full cusp deviation from normal antero-posterior molar relation compared to school students 2.07%.

### Key words:

Deaf children , Dental trauma , Dental anomalies

### Introduction:

Injuries to the teeth of children or adults present unique problems in diagnosis and treatment, they may involved the enamel only or may lead to multiple type of trauma affecting both soft and hard oral tissues.<sup>(1)</sup> There were no abnormal dental findings associated with deafness and impaired hearing<sup>(2)</sup> yet many authors showed that the prevalence of traumatic dental injuries, were higher than normal population<sup>(3,4)</sup>, malocclusion (dentofacial anomalies) were defined as an irregularity of the teeth or mal relationship of the dental arches beyond the accepted range of normal. The prevalence of malocclusion varies widely in different countries of the world<sup>(5)</sup> so the purpose of this study

was to investigate the distribution and severity of traumatic dental injuries dentofacial anomalies (Antero-posterior molar relation) among deaf persons compare to schools students according to gender in the same geographical area.

### Materials and methods

The sample of this study consist of 519 (319 males), (200 females) deaf persons and 532 (322 males), (210 females) students at 5-16 years of age which was divided into three age groups and recorded according to last birthday<sup>(6)</sup>. There were chosen from five governorates randomly to represent the middle region of Iraq (Anbar, Babylon, Salah AL-Deen, Diyala and Kerbala);

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Permission was obtained from the Ministry of education and from the ministry of Work, Social Affair of Iraq. The children and adolescents were examined in the only institution found in each five governorates while a random sample was selected from Baghdad two from each sector (Rassfa and Karkh). Examination of samples was conducted in each institution and school, utilizing sportable chair under standardized condition, plane mouth mirror No<sub>4</sub> (6) were used along with sickles sharp explorers no (00), containers one for used instruments, other for sterilizing one.

Communication with deaf persons achieved by using sign language with assistance of the teacher (7)

Measurements of type and prevalence of truma in permanent anterior teeth was recorded according to GarciaGodoy (1981) (8) examination done without radiograph.

Dentofacial anomalies were performed according to criteria of WHO (1997) (6) which was used for permanent teeth only. The data were analyzed using z-test. The differences were considered significant when probability was less than 5% level.

## Results:

The percentage of traumatized deaf persons were found (6.94%) compared to schools (5.83%) with no statistically significant difference. Deaf males were reported to be affected more than females, this difference was found to be statistically not significant, while it was recorded to be statistically highly significant in schools  $Z=2.740$  ( $P < 0.01$ ) table (1), from the same table the higher percentage of injured deaf persons and students were observed at age (9-12) years, while it was decreased at age (13-16) years in both institutions and schools.

**Table (1):** Distribution of deaf persons and students with traumatized teeth by age groups and gender in institutions and schools.

Age Year	Institution						School					
	Male		Female		Total		Male		Female		Total	
	No	%	No	%	No	%	No	%	No	%	No	%
5-8	1	0.94	0	0.00	1	0.61	1	0.93	0	0.00	1	0.58
9-12	14	10.37	11	10.58	25	10.46	16	11.94	4	3.77	20	8.33
13-16	23	10.26	2	5.41	10	8.70	9	11.25	1	2.44	10	8.26
Total	23	7.21	13	6.50	10	6.94	26	8.07*	5	2.38	31	5.83

\*P < 0.01

Table (2) reveled that in institutions the most common type of dental injury was enamel dentin fracture without pulp exposure followed by simple enamel fracture then enamel dentin fracture with pulp exposure at lower percentage, while in schools the

simple enamel fracture was the major type of dental injury followed by enamel dentin fracture without pulp exposure then enamel dentin fracture with pulp exposure, Table (3) illustrates that 57.42% of deaf persons and 55.64% of students demonstrate normal type of

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occlusion (straight terminal molar sagittal plane) with no statistically significant differences.

**Table (2):** Distribution of traumatized teeth in institutions and schools by age group and type of trauma.

Institutions								
Age year	1		2		3		Total	
	No	%	No	%	No	%	No	%
5-8	1	100.00	0	0.00	0	0.00	1	100.00
9-12	13	38.24	19	55.88	2	5.88	34	100.00
13-16	8	66.67	4	33.33	0	0.00	12	100.00
Total	22	46.81	23	48.94	2	4.26	47	100.00
Schools								
Age year	1		2		3		T	
	No	%	No	%	No	%	No	%
5-8	1	100.00	0	0.00	0	0.00	1	100.00
9-12	14	58.33	8	33.33	2	8.33	24	100.00
13-16	5	45.45	4	36.36	2	18.18	11	100.00
Total	20	55.56	12	33.3	4	11.11	36	100.00

1= simple enamel fracture

2= Enamel-Dentin fracture without pulp exposure

3= Enamel-Dentin fracture with pulp exposure

Distal half cusp relation was observed in situations which form (28.90%) while (29.89%) was found in school students with no statistically significant difference was observed, while deaf persons with mesial full cusp

relation was (4.62%) and 2.07% of student were observed to have this relation, this difference was found to be statistically significant ( $Z = 2.310$ ,  $P < 0.05$ ).

**Table (3):** Distribution of Deaf and Students According to Type of Occlusion.

	Institutions			Schools		
	Gender	No	%	Gender	No	%
Normal	M	166	52.04	M	170	52.80
	F	132	66.00	F	126	60.00
	T	298	57.42	T	296	55.64
Distal Half Cusp	M	106	33.23	M	103	31.99
	F	44	22.00	F	56	26.67
	T	150	28.90	T	159	29.89
Mesial Full cusp	M	14	4.39	M	5	1.55
	F	10	5.00	F	6	.86
	T	24	4.62	T	11	2.07

## Discussion:

Trauma to children's occurs quite frequently. In this study the prevalence of traumatic dental injuries among deaf persons was less than that recorded by Al-Ganabi (11.87%)<sup>(9)</sup>, Also in schools the percentage of traumatized children was less than that reported by AL-Hayalyi (29.6%),<sup>(10)</sup> Ahmed (9.45%)<sup>(11)</sup>. Females had a lower percentage of fractured teeth than males in institutions with no statistical significant difference while a highly significant differences were found between both gender in schools and this finding was in disagreement with Ahmed (2002)<sup>(11)</sup>. This may be attributed to greater activity of males in schools (fighting sports). While at home they are under observation of their families. Although enamel dentin fracture without pulp exposure was most common type of injuries among deaf. While simple enamel fracture was most common type among students in schools but prevention of traumatic injuries is more important than treatment and reflect the level of education of children and parents.

The majority of deaf persons and students in schools show normal type of occlusion and this finding was in according with Nouri, 1996<sup>(12)</sup> Deaf persons are considered normal unless hearing defect is due to a syndrome, 28.90% of deaf persons were reported to have half cusp distal deviation from the normal antero-posterior molar relation compared to 29.89% of schools students and this finding was more than other studies in comparison with age as Nouri (1996)<sup>(12)</sup> on auditory handicapped (7-16 years) and AL-Huwaizi (2002)<sup>(13)</sup> among 13 years normal children.

Variation in tooth position and relation can occur from one individual to another in established normal dentitions<sup>(5)</sup> small percentage of deaf persons and schools students were found to have full cusp mesial to its normal relation and this may be due to early missing of deciduous teeth which result in mesial drifting of lower first permanent molar gives rise to postural CI III<sup>(14)</sup>

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