



## **ORAL IMPACTS ON DAILY PERFORMANCES(OIDP) SCALE AMONG A GROUP OF EGYPTIAN CHILDREN IN MANSOURA CITY**

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### **ABSTRACT**

**Aim**To assess the oral impacts on daily performances (OIDP), and their relationship to dental caries and gingival diseases in an Egyptian sample of Mansoura school children aged 8- 13 years divide into tow age groups.

**Methods:** A sample of 1200 children were selected on a cross sectional study. The sample was chosen through stratified random sampling within clusters . Children were individually interviewed using the Child-OIDP including the eight-item OIDP frequency scores , and then clinically examined to assess their normative treatment needs for dental caries, and periodontal disease .

**Results:** A total of 1184 (8-13years) were participated in this study. About 63.5% of children had oral impacts during the past 3 months. Child-OIDP scores (mean =  $7.8 \pm 4.9$ ). Eating was the most reported performance, followed by cleaning teeth and maintaining emotional state in both age groups . Swelling and abscess was the most important perceived causes . Gingival diseases were of less concern in both age groups.

**Conclusions:** problematic eating and toothache were the most common impacts in Egyptian children. These results reflect needs for oral health promotion and treatment of dental caries.

**KEY WORDS:** Oral health, quality of life, Egyptian children

### **INTRODUCTION**

Oral health is an integral part of the general health and can affect an individual's life in areas such as language, social, physical and emotional functioning<sup>(1)</sup>. Furthermore, oral diseases can cause serious long-term problems regarding both social and physical health<sup>(2)</sup>.

Despite there is worldwide improvements in people's oral health, it still causing problems in both developed and developing countries. The assessment of oral health status in children and adolescents is important since poor oral health can cause negative effects on learning abilities, growth, socialization and normal daily activities in children<sup>(3)</sup>.

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Oral health goals are to promote disease-free mouths that enable people to adequately function in terms of their physical, psychological and social wellbeing. So, its main aim is to achieve a better oral health related quality of life (OHRQoL)<sup>(4)</sup>

The quality of life (QoL) measures were developed to evaluate both the physical and psychosocial impacts of oral health. It aims to quantify the extent to which dental and oral disorders interfere with daily life and well-being together with the outcomes of clinical care, such as the effectiveness of treatment interventions<sup>(5,6)</sup> The impact of chronic pain on child and family functioning had a widespread interruption in tasks of everyday life (e.g. sleep, schooling, peer relations and physical activity)<sup>(7)</sup>.

Several subjective oral health indicators have been developed. It rang from single item indicators to composite inventories or scoring systems<sup>(8)</sup>. The oral impacts on daily performances (OIDP) inventory was developed to be used in assessing the impacts on individuals' ability to perform daily activities<sup>(9)</sup>. It is a simple and valid instrument, which can be used for assessing oral health needs in population surveys<sup>(10)</sup>.

Quality of life measurement in children involves special methodological problems, such as changes in children's ability to understand at different ages, the difficulty of separating the child's perceptions from the parents and the variation in the number of activities with age<sup>(11)</sup>.

The Child-OIDP was modified to suit children's capability in relation to their intellectual, cognitive, language development, and their memory ability. The sequence of the questions has been modified. The response scales have been simplified. The recall period has been modified to 3 months.<sup>(12)</sup>

In Mansoura city; Egypt, no studies had been conducted regarding oral health related quality of life among children. The aim of this study was to assess the oral impacts on daily performances

among a group of schoolchildren using the child OIDP, in addition to assessment of the correlation between the self-rated measures and the mean OIDP scores.

## METHODS

### Study population

The study was approved by the ethical committee of Mansoura University. Permission was also obtained from the education authorities and head teachers for conducting the study. Written informed consents of the pupils' parents were also obtained.

The sample size was determined by the following equation<sup>(13)</sup>

$$ss = \frac{Z^2 * (p) * (1-p)}{d^2}$$

Ss = sample size

Z = Z value (e.g. 1.96 for 95% confidence level)

p = percentage picking a choice, expressed as decimal (.5 used for sample size needed)

d = confidence interval, expressed as decimal (set at level of 0.04)

Twelve primary schools were randomly selected from the eastern and western educational sectors in Mansoura city. About 100 children were selected randomly from each school. A cross-sectional study design was carried out on population of 1200 school children aged 8-13 years. They were divided into two age groups (group 1 aged 8-<11, and group 2 aged 11-13 years).The sample was chosen through stratified random sampling within clusters technique, given that the pupils are clustered in classrooms according to the WHO (1997)<sup>(14)</sup> recommendations.

### Data collection

Data were collected using self-administered questionnaires, and clinical oral examinations. One trained and calibrated researcher used a

self-administered questionnaire based on Arabic translation of **Brown and Al-Khayal**<sup>(15)</sup> to collect information about the impact of oral conditions on daily performance during the past 3 months. The questionnaire consisted of 2 parts. The first part included questions regarding the socio-demographic data (age, gender, and the parental education) in addition to the self-reported indicators (oral health, and oral problems namely toothache, food impaction, gingival diseases, and bad odor). The self-reported oral health were recorded on 5 point scale ranged from 1: excellent to 5 very poor, while oral problems were recorded as present or absent). Perceived oral treatment needs were recorded as existing need no needs, and I don't know.

The second part of the questionnaire was assigned for recording the impacts using the child-OIDP index. It assessed the serious oral impacts on eight daily performances namely, eating, speaking, cleaning mouth, relaxing, smiling, studying, emotion and social contact. If a child reported an impact on any of the eight performances, the frequency of the impact was recorded on a scale ranged (from 1-5), where 1 means (affected less than once a month or never) -2 means (once or twice a month), 3 means (once or twice a week), 4 means (3-4 times a week), and 5 means (every day or almost every day). If no impact was reported, then a zero score was assigned. Incomplete questionnaires were excluded.

The oral examinations were conducted by calibrated researchers (intra- and inter-examiner kappa values were 0.88, and 0.91 respectively). All participants were examined for caries experience using DMFT index<sup>(16)</sup> (caries was diagnosed according to WHO criteria<sup>(14)</sup>), and the gingival condition was assessed using Loe and Sillness gingival index<sup>(17)</sup> under artificial light using a disposable mouth mirrors and dental probes.

### Statistical Analysis

For child-OIDP, an impact was considered if it was recorded at a moderate or severe level. The

number of impacts per person was calculated by the so-called "simple count method"<sup>(18)</sup>. The sum of these scores was converted into percentage format. The overall impacts score is the sum of all 8 performances (ranging from 0 to 40). Data were analyzed in SPSS, Version 16.0.

### RESULTS

The number of participated children was 1184. About 16 questionnaires were excluded, (98 % response rate). A total of 56 % of the sample was male. The prevalence of children had oral impacts on their daily life during the last 3 months was 63.5%.

For both age groups, the most prevalent impacts were eating difficulty (44.9% and 35.6% for the first and second group respectively), followed by cleaning teeth (31.4, and 35.6% respectively), then smiling (30.7%, and 27.3% respectively). The same variables were also the most reported impacts among males and females (table 1)

The clinical status of the selected children is presented in Table 2. The children were in the mixed dentition stage, with a mean number of the present primary teeth ( $8 \pm 6.1$  and  $6.9 \pm 2.4$ ) for both age groups. On the other hand, the mean number of the present permanent teeth were ( $13.5 \pm 4.1$ , and  $15.6 \pm 6.2$  respectively). They had a low mean DMFT and GI index either for age groups and gender.

The main cause of impacts was swelling and abscess (44%). Second is mobility of primary teeth (37.8%), followed by bad odor (34.1%) and malposed teeth (31%). However, the least common perceived cause of impacts findings were bleeding gums (13.4%) and broken teeth (8.1%). (Fig 1)

The Child-OIDP impact score increased with the decline of the children's oral health status from healthy to unhealthy. The mean Child OIDP score was (2.1) for children who were unsatisfied with their oral health, while for satisfied children it was (13.7). There was a statistical significant difference

( $P < 0.0001$ ). Children who reported no treatment need had a mean OIDP score (4.7), while those reported treatment need had mean OIDP score higher than 19 ( $P < 0.0001$ ). The correlation between Child-OIDP and the self-rated oral health (ranged from 17.4 to 3.7) was statistically significant ( $P < 0.0001$ ). (table 3)

The Child-OIDP scores were correlated to the socio-demographic variables in a predicted manner; the higher the Child-OIDP score was related to gender (9.5) then mother education (9.4). The mean Child-OIDP score in this study was (7.8). (Table 4).

TABLE (1) Prevalence of oral impacts on daily performances (Child-OIDP) in the study sample

Variable	Age			Gender		
	Group (N=449) n %	Group 2(N=735) n %	P value	Males(N=672) n %	Females(N=512) n %	P value
Eating	202 (44.9%)	309(42%)	0.53	280 (41.7%)	231 (45.1%)	0.46
Speaking	49 (10.9%)	(8.6%)63	0.23	75 (11.1%)	43 (8.4%)	0.15
Cleaning	141 (31.4%)	262 (35.6%)	0.29	220(32.7%)	178 (34.6%)	0.61
Sleeping	56 (12.5%)	119 (16.2%)	0.13	75 (11.2%)	89 (17.4%)	0.008*
Emotion	67 (14.9%)	92 (12.5%)	0.3	72 (10.7%)	85 (16.6%)	0.01*
Smiling	138 (30.7%)	201 (27.3%)	0.35	181 (26.9%)	160 (31.3%)	0.23
Studying	16 (3.5%)	34 (4.6%)	0.39	23 (3.4%)	26 (5.03%)	0.17
Social	17 (3.8%)	40 (5.4%)	0.22	28 (4.1%)	26 (5.07%)	0.48
At least one of the above	%63.5					

TABLE (2) Dental status of the study sample

Variable	Age			Gender		
	Group 1 (n=449) mean±SD	Group 2 (n=735) mean±SD	P value	Males (n=672) mean±SD	Females (n=512) mean±SD	P value
Number of present primary teeth	8.2±6.1	6.9±2.4	0.00*	7.3±5.8	6.7±4.6	0.054
Dft	3.1±1.8	1.9±1.4	0.00*	2.7±0.9	2.1±1.3	0.001*
Number of present permanent teeth	13.5±4.1	15.6±6.2	0.00	12.9±5.8	15.1±4.6	0.00*
Total of DMFT	0.84±0.37	0.71±0.19	0.00*	0.76±0.2	0.68±0.23	0.00*
GI index	0.82±0.69	0.89±0.54	0.06	0.78±0.58	0.86±0.61	0.02*

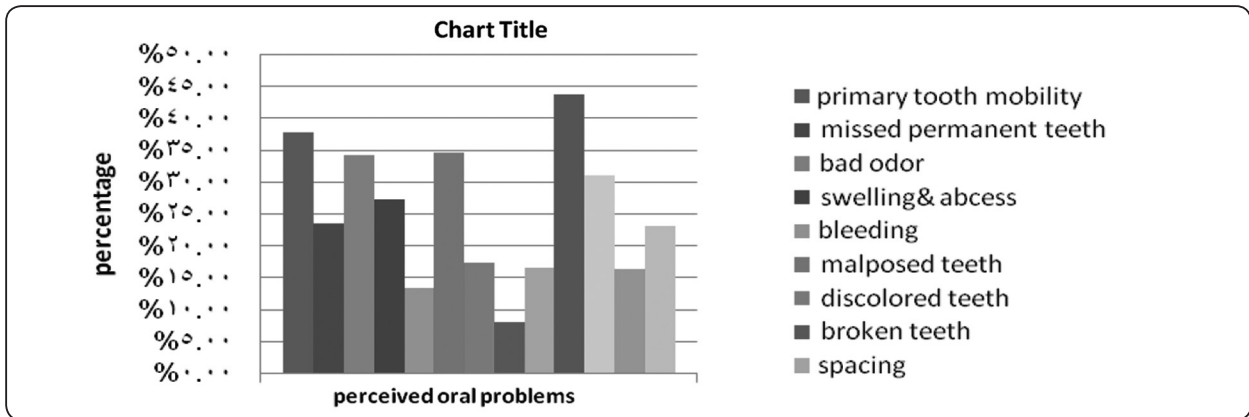


Fig. (1) Perceived oral problems among Egyptian schoolchildren

TABLE (3) Correlation between Mean child OIDP scores and the self- rated oral health status and needs

Self-rated measure	Mean child OIDP±SD	Correlation p value
Satisfaction with oral health Satisfied (n = 258) Not satisfied (n = 926)	13.7 ± 7.4 2.1 ± 1.6	P = 0.001*
Perceived oral treatment needs No need (n = 167) Existing needs (n = 919) Do not know (n = 98)	4.7 ± 3.1 19.5 ± 8.4 3.9 ± 3.2	P = 0.00*
Self-rated oral health Very poor (n = 54) Poor (n = 113) Fair (n = 378) Good (n = 422) Excellent (n = 217)	17.4 ± 9.5 15.9 ± 9.1 9.9 ± 4.8 4.6 ± 1.8 3.7 ± 1.1	P = 0.002*

TABLE (4) Correlation of OIDP scores and socio demographic data

Variables	Mean OIDP scores± SD	p value
Age	7.8± 4.9	0.79
Gender	9.5 ± 4.7	0.58
Mother education	9.4 ± 2.6	0.00*
Father education	8.7 ± 2.7	0.005*

**DISCUSSION**

The Child-OIDP score was purposefully designed to link the specific oral problems leading to the impacts on quality of life, thereby associating the impacts to the specific oral condition that may need attention<sup>(18)</sup>. This unique characteristic has permitted the Child-OIDP to be used in the assessment of oral health needs as well as in prioritizing dental health care services<sup>(19-22)</sup>. The Child-OIDP is an applicable, short, quick, easy, reliable method that has proved to be a valid measure<sup>(12)</sup>.

The Child-OIDP has been previously studied in a different populations. In this study, the Child-OIDP was conducted on a sample of schoolchildren ( aged 8-13 y) in Egypt (Mansoura city).The translation was based on the validated previous Arabic translation<sup>(15)</sup>. The cross-cultural adaptation was done according the recommendations of Guillemin et al<sup>(23)</sup>.

The results of this study showed that, eating performance was the most frequently impact in both age and gender groups. It was consistent with previous studies in France and Uganda ( 23- 25). The next most common impact in Egyptian children referred to difficulties on cleaning teeth and smiling. Females and elderly children more commonly reported difficulties in maintaining usual emotional state and smiling. This might reflect an

increasing role of psychosocial performances with gender and increasing age<sup>(26)</sup>. The most prevalent impact in Brazilian children was related to difficulty in smiling, laughing and showing teeth without embarrassment<sup>(27)</sup>, but this was focusing on the traumatic injuries of anterior teeth study

The prevalence of oral impacts was high, as 63.3% of the children reported one oral impact at least that affected their daily life in the past 3 months. This is comparable with the results obtained in 11–12-yr-old Thai children (89.8%)<sup>(28)</sup>. However, in France the prevalence observed was higher than in older adolescent populations (14–16)<sup>(29)</sup>. The younger age of the children participated in the present study could explain this higher prevalence. Moreover, it is difficult to compare the prevalence of oral impacts between countries, as the variations can be related to many cultural factors, as already shown in adults<sup>(30)</sup>

Swelling and abscess, mobility of primary teeth, bad odor and malposed teeth were the most commonly reported impacts on daily life. These findings disagree with the study performed in Thailand. The present findings indicate that dental caries and oral ulcers might be important causes of oral impacts among Egyptian adolescents<sup>(30)</sup>.

On the other hand, gingival problems had a minimum effect on the impacts, both in terms of prevalence and scores. This may be due to the young age groups of the children in the present study<sup>(31)</sup>. This results contradict with the results of Bernabe et al<sup>(32)</sup> in which the gingival problems were severe and prevalent.

The mean scores of the Child-OIDP in this study was (7.8). It was similar to the mean scores of previous studies that included the same age group; in Uganda it was (8.9)<sup>(25)</sup>; while in France and Sri Lanka it was (6.3 and 7.7 respectively)<sup>(24,26)</sup>.

However, this study faced some limitations where the younger aged children had some difficulties in understanding the purpose of the

study and the items of the questionnaire. This was reflected on some difficulties in expressing their problems. To overcome this problem, the researchers explained the questionnaire items clearly. For better understanding changing the pattern of oral impacts throughout the life course, further studies on larger scales are needed.

## CONCLUSIONS

Egyptian children showed high prevalence. Eating, cleaning teeth and smiling were the most commonly reported impacts by both age and gender groups. Swelling and abscesses were the most detected cause of oral impacts among the participated Egyptian children. Gingival problems were less prevalent for both age and gender groups. Health promotion, prevention and caries treatment are the main oral health aims in Egyptian children.

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