

## Effect of Educational Program about Dental Problems on Health Related Quality of Life for Children.

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### Abstract:

**Back ground:** Oral health related quality of life (OHRQOL) reflects people's comfort when eating, sleeping, and engaging in social interaction. Poor oral health affects social activities and child quality of life, such as attending school and interacting with other people. **Aim of this study** was to determine the effect of educational program about dental problems on health related quality of life for children. **Subjects and Method:** A Quasi experimental research design was used at pedodontic clinic, Faculty of Dentistry, Tanta University. A convenient sample of 60 school age children with dental problems. **Tools:** Three tools were used to collect the required data Structured interview schedule (Tool I): to assess child knowledge and practice regarding to oral health and dental problems. Oral Assessment Scale (OAS) (Tool II): to assess oral health of school age children. Oral health related to quality of life scale (Tool III): to assess the effect of oral health on children quality of life . **Results** showed that, before program 56% had poor knowledge and practice about oral health and dental problems while after program 66.7% had good knowledge and practice. Regarding child quality of life, nearly two third (65 %) of children had poor quality of life pre- program while as half of them ( 51.6 %) had good quality of life after three months of program implementation. **Conclusion:** The educational program has a positive effect on improving childrens knowledge, practice and their quality of life. **Recommendations:** Establish continuous educational programs for mothers and their children as well as nurses working in dental clinic to improve their information. School curriculum should be containing information about oral health and dental problems to improve awareness of school age child about it .

**Key words:** Educational Program, Dental problems, Quality of Life

## **Introduction**

Oral Health is the standard of oral and related tissue health that enables individuals to eat, speak, and socialize without active disease, discomfort, or embarrassment and contributes to general wellbeing. their self-esteem; and satisfaction with respect to oral health. OH is the result of interaction among oral health conditions, social and contextual factors, as well as the rest of the body<sup>(1,2)</sup>.

Oral health related quality of life has no strict definition. However, there is general agreement that it is a multidimensional concept<sup>(3)</sup>.

School age children have 20 primary teeth sometimes called “baby” or “milk” teeth that begin erupting around 6 months of age and continue to erupt through about 2 years of age. Primary teeth are essential for good nutrition, language development, self-esteem, and as placeholders for permanent teeth<sup>(4)</sup>.

Inadequate dental care results in the most common dental problems such as dental caries, malocclusion, gingivitis and Trauma, especially tooth avulsion<sup>(5,6)</sup>. Good oral and dental hygiene help prevent bad breath, tooth decay ,gum disease and tooth loss. It can keep the teeth as the child gets older<sup>(7)</sup>.

The impact of oral diseases on the quality of life is very obvious. The psychological and social impact of such diseases on daily life is easily comprehensible which makes them of considerable importance. Any disease that could interfere with the activities of daily life may have an adverse effect on the general quality of life. Therefore the notion of oral health related quality of life (OHRQOL) is the product of many observations and research<sup>(8,9)</sup>.

The nurse has historically been the one to receive a child in pain, determines the source of the discomfort, renders care as appropriate and makes the necessary referral. The nurse can enhance dental and oral health by increasing parental information about the importance of sound of nutrition practices, regular dental check up, proper oral hygiene at varying age<sup>(10)</sup>.

**The aim of this study was to:** determine the effect of educational program about dental problems on health related quality of life for school age children.

## **Subjects and Method**

### **Research Design:**

A quasi experimental research design was used in this study

### **Setting:**

The study was conducted at pedodontic clinic, Faculty of Dentistry, Tanta University.

**Subjects:**

A convenient sample of 60 school age children with dental problems and their mothers were included from the previously mentioned setting. They were attended for dental management.

**Tools of data collection:**

Three tools were used to collect the necessary data.

**Tool (I): Structured interview schedule:**

It was developed by the researcher after reviewing the related literature to assess child knowledge and practice regarding to oral health . It includes three parts:

**Part (1):** Demographic characteristic of:

- a- **Children such as:** age, sex, birth order and educational level.
- b- **Mothers such as:** educational level, occupation, monthly income and family size.

**Part (2): childrens' knowledge about :**

- a- Dental health: definition of oral health, types, numbers and importance of healthy teeth and harmful behaviors related to child teeth.
- b- Dental problems such as: dental caries, gingivitis, bad breath, teeth bleeding, dental injury and discoloration of teeth.
- c- Preventive measures to avoid dental problems .

**Scoring system for children knowledge for each question:**

- Correct and complete answers were scored 2.
- Correct and incomplete answers were scored 1 .
- Incorrect or no answers were scored 0 .

**Total scores for children knowledge:**

- Less than 50% were considered poor knowledge.
- From 50% to less than 70% were considered fair knowledge.
- 70% and more were considered good knowledge.

**Part (3): children reporting practice related to oral health hygiene includes:**

frequency and importance of tooth brushing, periodical dental checkup and dietary habits .

**Scoring system for children reporting practice:**

- Reporting done correctly and completely were scored 2 .
- Reporting done correctly but incomplete were scored 1 .
- Incorrect or not done were scored 0 .

**Total scores for children reporting practice:**

- Less than 50% were considered poor practice.

- From 50% to less than 70% were considered fair practice.
- 70% and more were considered good practice.

### **Tool II: Oral Assessment Scale (OAS) :**

This scale was adopted by Ullman 2009<sup>(11)</sup> and used twice by the researcher before and after three months of program implementation to assess oral health of school age children .It includes five items (lips, tongue, saliva, oral mucosa and teeth). It was done on three point Likert scale (3-2-1) and analyzed as continuous rang from (5-to 15). It was categorized as following:

- mild dysfunction if it was 5-7 .
- Moderate dysfunction if it was 8-11.
- sever dysfunction if it was 12 -15.

### **Tool III: Oral health related to quality of life scale (OHRQoL):**

It was adopted by Slade, 1997<sup>( 12)</sup> and modified by the researcher .it was used twice before and after three months of program implementation to assess the effect of oral health on children quality of life. It consists of fourteen items (has problem pronouncing words, feel the sense of taste worsened, has painful aching in the mouth, find uncomfortable to eat any food to be self-confidence, feel tense, has an unsatisfactory diet, has to interrupt meals, find difficult to relax to be a bit

embarrassed, to be irritable with other people, has difficulty in school achievement, feel that life in general was less satisfactory, and to be totally unable to function).

- Responses was done on 3 point Likert scale . Each item was given three different scores ranging from never (1) to often (3).The total scores range from 14 to 42. scores of 21 or more has been associated with oral impact on quality of life.

### **Method**

-The study was carried out after getting an official permission from the responsible authorities.

#### **- Ethical considerations:-**

Children and their mothers were informed about the purpose of the study .consent was obtained for the participation. privacy and confidentiality were considered. mothers reassured that, the collected information were used only for the purpose of the study and they have the right to withdraw at any time.

- A pilot study was carried out on 10% of the study sample. It was done before starting data collection to verify the applicability, feasibility, and clarity of the study tools.

-Tools of the study were tested for content validity by 5 jury experts in the field of

pediatric nursing, Faculty of Nursing, and Pedodontists, Faculty of dentist, Tanta university.

## **-Three tools were used for data collection.**

### **A structured interview schedule (Tool I) to collect:**

-Demographic characteristics of children and their mothers, children knowledge related to oral health, and dental problems and children reporting practice related to oral hygiene.

### **- Oral Assessment Scale (OAS) (Tool II).**

It was used twice by the researcher before and after three months of program implementation to assess oral health of school age children related to their lips, tongue, saliva, oral mucosa and teeth. using lickert scale.

**Oral Health Related to Quality of Life Scale (OHRQOL)(Tool III).** It was used two times by the researcher. Each child was asked about the frequency that he or she experienced an impact on 14 daily activities. Responses were done on a 3-point Likert scale ranging from never (1) to often (3) .

-total score from 14 to 42.

-scores of 21 or more has been associated with oral impact on quality of life.

- Each child interviewed individually or with care giver in the dental clinic to

collect the required data using **tool I part 1 and 2**. The time required for each interview was about 30- 45 minutes.

- Children reporting practice related to oral hygiene were assessed twice Before and after Three months of program implementation using **tool I part 3**.

- Oral assessment scale (**Tool II**) was used twice by the researcher before and after Three months of program implementation to assess five item of oral health (lips, tongue, saliva, oral mucosa and teeth) .

- The effect of oral health on children quality of life was assessed twice by the researcher before and Three months after program implementation using **OHRQoLscale (tool III)**. It contain 14 item.

- Three point lickert scale was used never (1) ,occasionally (2), and often (3). The total score was calculated from 14-42 .The total scores of 21 or more it had been affect quality of child life.

### **- program constriction**

Based on children needs the program was developed. Five sessions were conducted in the pediatric dental clinic using different teaching strategies such as lecture, group discussion, pictures, posters, role play and demonstration .

**Session I :**

Definition of dental health, structure of the oral cavity.

**Session II :**

Focused on: definition of dental caries, stages, clinical manifestation, and how to prevent this problem.

**Session III :**

About: definition and clinical manifestation of gingivitis and how to avoid this problem.

**Session IV :**

Concentrated on: definition, causes, and prevention of dental injury and trauma.

**Session V :**

Includes oral hygiene using tooth brush correctly, and how to use msiwak.

- The program was evaluated immediately and after three months of program implementation using the same tools of pre test.

**Statistical analysis:**

The collected data were organized, tabulated and analyzed using SPSS software. For quantitative data, mean and standard deviation were calculated. For qualitative data, using Chi-square test ( $\chi^2$ ). For comparison between means of two groups of parametric data Z value of Mann-Whitney test was used. For comparison between more than two means of parametric data, F value of ANOVA test

was calculated. For comparison between more than two means of non-parametric data, Kruskal-Wallis ( $X^2$  value) was calculated. Correlation between variables was evaluated using Pearson's correlation coefficient (r).

**Results**

Table (1) shows percentage distribution of studied children regarding to socio demographic characteristics. It was found that, more than half of the studied children (55 %) their age 9 years, about one quarter (23 %) 7 year and 22 % from 11 to 12 years. Regarding to their sex , it was noticed that, more than half of them (53,3 %) were females and 46,7% were male .

It was found that, 40 % of studied children were the second children in the family , 20% were first one and 25 % were the third one .All of them in primary education . It was observed that, nearly two third (65%) of children from rural area , while the rest 35% from urban area.

Figure(1) presents total scores of children knowledge about oral health and dental problems pre , immediate and after three months of program implementation .It was noticed that, there was an improvement in total scores of children knowledge immediately and after three months of program implementation as (85%) and (81,67%) respectively had good scores

while as pre program most of them (88,33%) had poor scores. with statistical significant difference.( $P < 0,05$ )

Figure ( 2) illustrates total scores of children reporting practices before and after three months of program implementation. it was found that pre program nearly two third of children (63,4%) had poor practice while as two third (66,7%) had good practice after three months of program implementation with statistical significant difference.(  $p = 0,05$  ).

Figure (3) shows Correlation between total scores of children knowledge and practice before and after three months of program implementation. It was noticed that, before program slightly more than half (55% ) had poor knowledge and practice about oral health and dental problems while after program two third (66,7%) had good knowledge and practice.

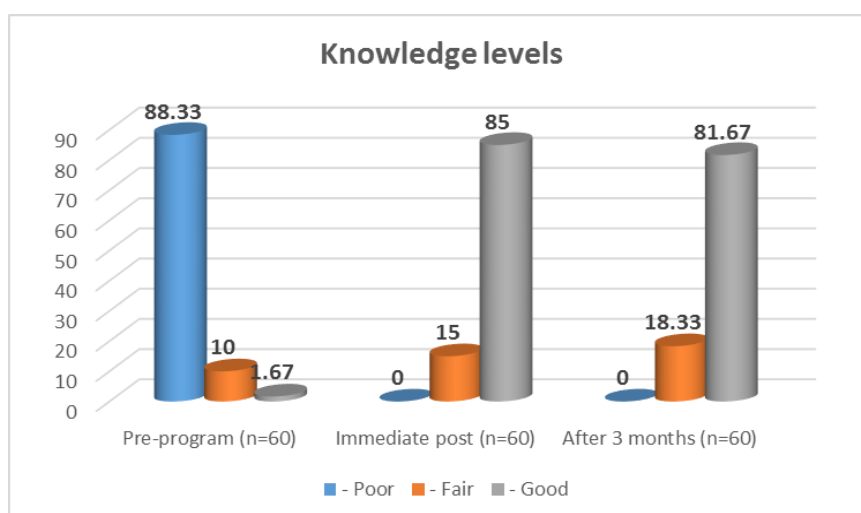
Table (2) and figure(4 )demonstrates Total scores of oral health assessment using oral assessment scale. it was observed that , nearly same percentage of children pre and post program had mild dysfunction 41,67% and 40% respectively . while as, 56,67% and 58,33 respectively had moderate dysfunction and the same percentage had sever dysfunction 1,67% . No statistical significant .

Figure (5) presents total scores of children quality of life before, and after three months of program implementation. It was clear that, pre program nearly two third (65,00%) of children had poor quality of life compared by half of them (51,6 %) had good quality of life after three months of program implementation.

Figure (6) Correlation between total scores of children knowledge , practice and oral health related to their quality of life before and three months after program implementation. It was observed that, there were an improvement in children knowledge and practice and their quality of life, no statistical significant difference between children knowledge , practice, oral health and child quality of life.

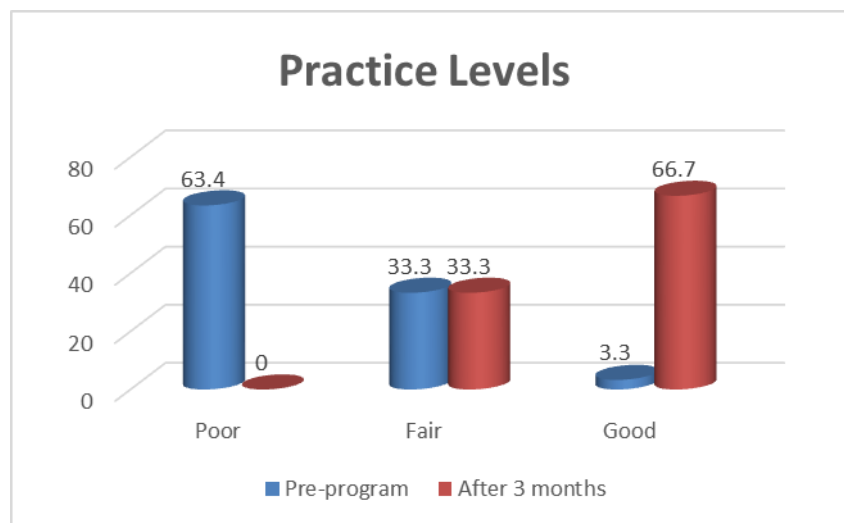
**Table 1: Percentage distribution of studied children regarding to their socio demographic characteristics.**

Socio Demographic characteristic	Studied children (60)	
	Number (No)	Percentage (%)
<b>Age in years</b>		
7-	14	23.0
9-	33	55.0
11-12	13	22.0
Mean±SD	10.42±1.40	
<b>Sex</b>		
-Male	28	46.7
-Female	32	53.3
<b>Birth order</b>		
-First	12	20.0
-Second	24	40.0
-Third	15	25.0
-Fourth	6	10.0
-Fifth and more	3	5.0
<b>Educational level</b>		
-Primary	60	100.0
<b>Residence</b>		
	-Urban	21 35.0
	-Rural	39 65.0

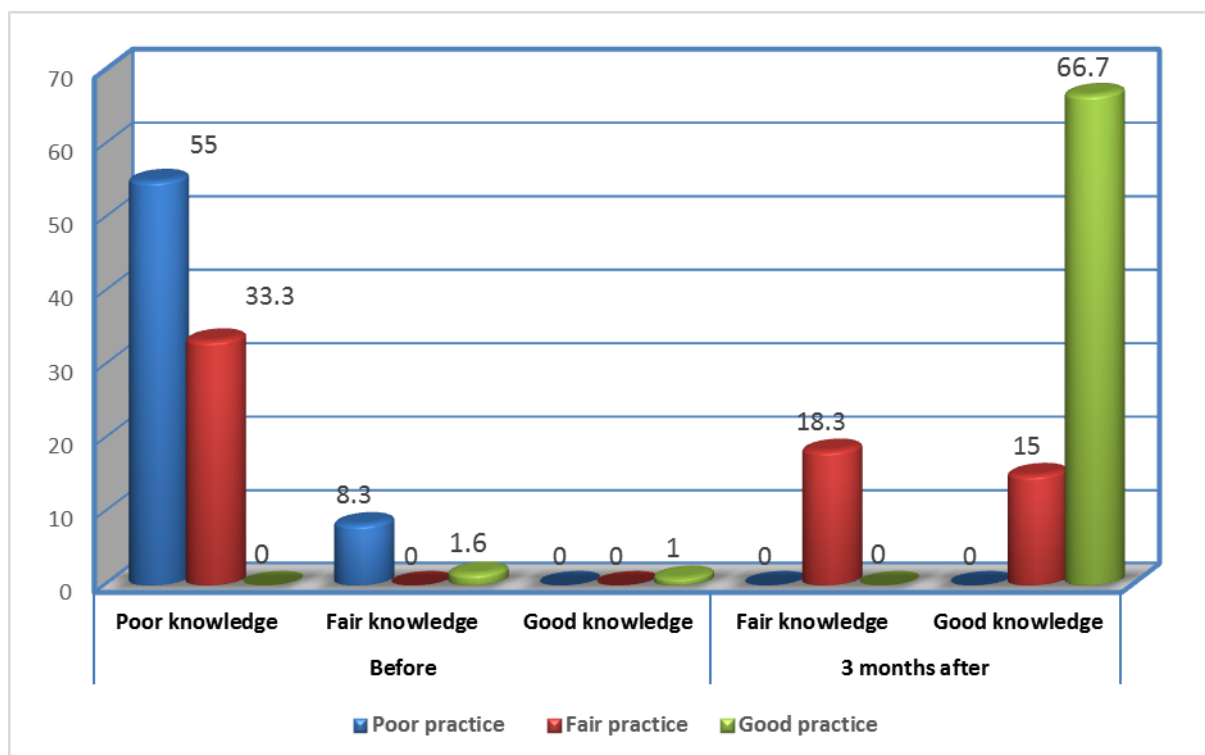


**Figure 1: Total scores of children knowledge pre , immediate and after three months of program implementation .**





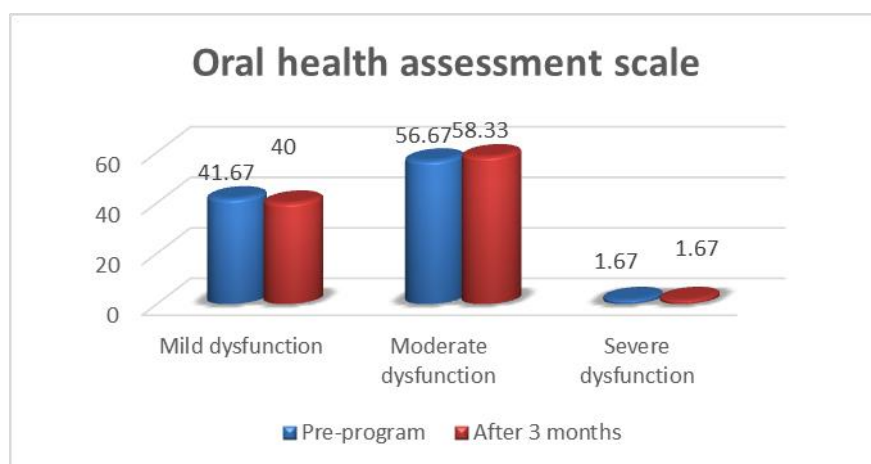
**Figure 2: Total scores of children reporting practice before and after three months of program implementation.**



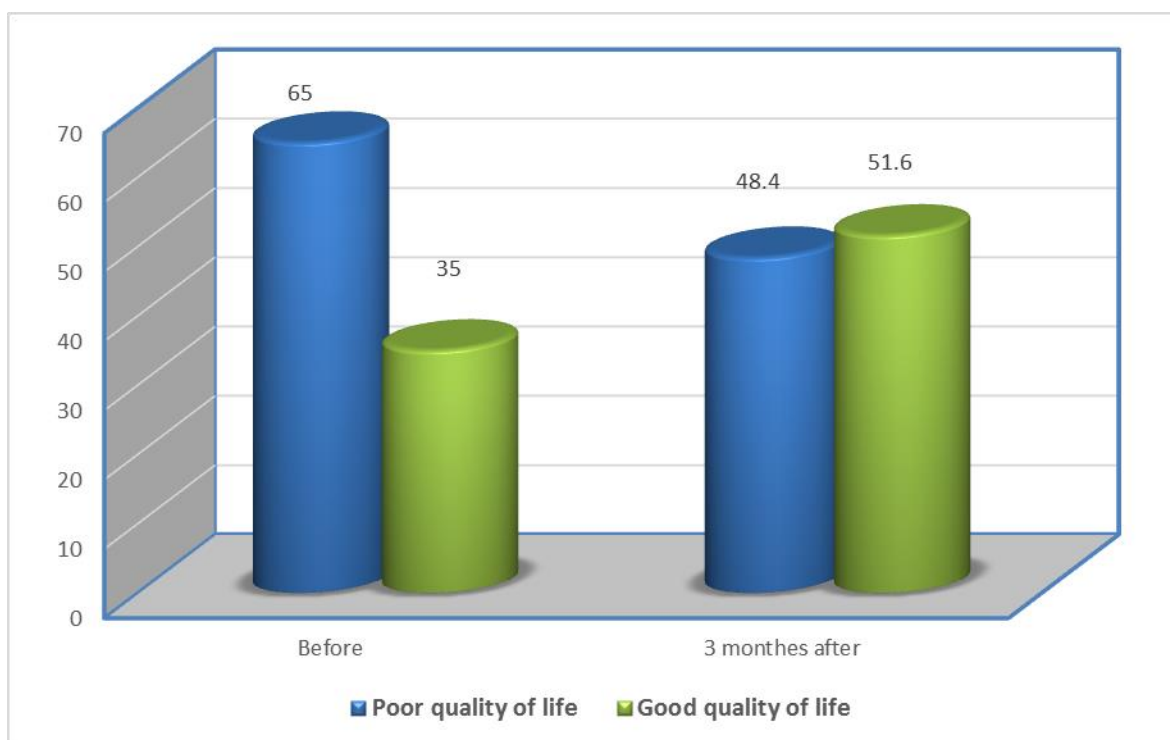
**Figure 3 : Correlation between total scores of children knowledge and reporting practice before and after three months of program implementation.**

**Table 2: Total scores of oral health assessment for studied children using oral assessment scale before and after three months of program implementation.**

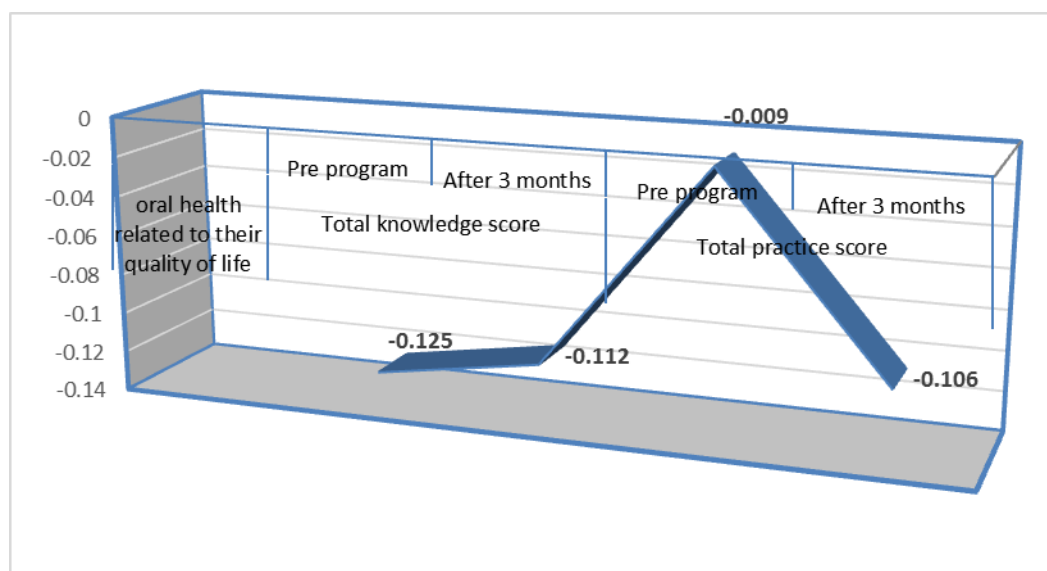
Items of assessment	Pre-program (N=60)		After 3 months (N=60)		$\chi^2$	P value
	No	%	No	%		
-Mild dysfunction (٥-٧)	25	41.67	24	40.00	0.035	0.983
-Moderate dysfunction (٨-١١)	34	56.67	35	58.33		
-Severe dysfunction (١٢-١٥)	1	1.67	1	1.67		
Mean +SD	7.82±1.21		7.88±1.26		.10 • P value = t = -1.66	



**Figure (4 ) Total scores of oral health assessment before and after three months of program implementation.**



**Figure (5) Total scores of children quality of life before, and after 3 months of program implementation**



**figure (6): Correlation between total scores of children knowledge , practice and oral health related to their quality of life before and three months after program implementation.**

## Discussion

OHRQoL is defined as a multidimensional construct that reflects children's comfort when eating, sleeping, and engaging in social interaction; their self-esteem; and their satisfaction with respect to their oral health.

Regarding child age affected by dental problems, the present study revealed that, more than half of the studied children with dental problems their age range from 9 to 11 years and it was more among female children than male and rural areas more than urban area. This result was contradicted with sudha 2005<sup>(13)</sup> who found that, dental problems were higher at 5 to 6 years compared by 8 to 10 years and 11 to 13 years age group and Abd Elaziz (2011)<sup>(14)</sup> who reported that, more than half of children with dental problems came from urban areas and the most common affected age were from 8 to 9 years. It could be due to increase awareness of oral hygiene among those children at this age or it may be explained that the permanent teeth which were erupted during this stage more resistant to caries process and other dental problems than the primary teeth.

on the other hand it was in harmony with Sanic & Hasangie (2008)<sup>(15)</sup> who reported that, dental state of permanent teeth in children aged from 7 to 9 years show a significant differences between the

children from rural and urban areas. From my point of view it could be explained that, children in rural areas had more untreated dental problems reflecting difficulty accessing dental care in these places.

Regarding child knowledge about oral health and dental problems, the findings of the present study revealed that, pre program the majority of studied children had poor knowledge in all items of oral health. while as after program implementation their knowledge were improved. This may be attributed to the effect of good education, communication and interaction of children during session in addition child during this stage had the curiosity to learn and willing to communicate and interact with others. it was observed that after three months of program implementation children knowledge improved but slightly reduced. This retention of knowledge might be explained by the fact that knowledge retention is usually affected by time.

Concerning total scores of children knowledge about dental problems and oral health, the majority of children had poor scores pre program meanwhile children had fair and good scores after program. This could be attributed that the content of program was developed based on child needs, the clarity and simplicity of the

content using attractive audio visual aids, availability of the researcher for more clarification, using simple language. All these factors play important role in facilitating child understanding

scLina et al (2010) <sup>(19)</sup> studied children knowledge about oral health and reported that, children knowledge still need to be improved, thus the present study suggested that the awareness about the importance of oral health needs to be enhanced among school age children through continuous implementing regular program with follow up .

The present study emphasized that, children with dental problems who received the instructions of designed program had significantly improvement of their health related to quality of life compared by pre program. The improvement includes, child had less toothache, abilities to eat also sleep and daily function were improved. In addition their school function and attendance were improved.

On the same line some studies reported that oral clinical indicator should be associated with oral health related quality of life out come. Kuposova et al<sup>(20)</sup> and Malden et al <sup>(21)</sup> reported , dental problems affects children's oral health related their quality of life with a significant reduction

problems reported with physical, mental, and social functioning.

WHO 2005<sup>(22)</sup> reported, oral health affects general health caused by pain and changing what people eat, taste food, look, speech, enjoying life and their social interaction with others. On the same line Cunnion 2010 <sup>(23)</sup> stated that , toothache is usually caused by dental problems, moreover Biazevic et al 2008 <sup>(24)</sup> reported that prevalence of oral disease, physical and psychological influence of these aggravating circumstances of children life, concerning the joy of living, possibility of speaking and social interaction. Children who had good knowledge had good practice and gain good quality of life .Contentious educational program to child and their mothers and continuous regular follow up play an important role in improving child quality of life.

### **Conclusion:**

Based upon the finding of the present study, it can be concluded that:

The educational program had a positive effect on improving children knowledge; reporting practice as well as their quality of life.

### **Recommandations**

based upon the finding of the present study the following recommendations were suggested;

- Establish continuous educational programs for mothers and their children as well as nurses working in dental clinic to improve their informations .
- School curriculum should be contained information about oral health and dental problems to improve school age child awareness about it.

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