Effectiveness of a health education programme on Sarsang primary school age regarding oral hygiene In Khanzad /Erbil City

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***Abstract*- Back ground and Objectives:** Oral hygiene is the and teeth clean to prevent dental and other oral problems, the very size of the population suggests that health care of the school children can contribute to the overall health status of the country. The health and well being of school age children have become a high profile practice of keeping the mouth issue. To assessing school age students' knowledge and practiceing toward oral health, To constructing health education program for school age children, who attended from Sarsang primary school age, To evaluate the impact of health education program upon school age childrens' knowledge and practices concerning oral health, To comparing between (pre-test study group and post-test control group) and To comparing between pre-test of both groups (study group, control group) and comparing moring with secound group.

Methods: A Quantitative, quasi-experimental study design non-probability (purposive) sampling technique was carried out through the present study with application of pre-test, first post-test and second post-test approach for study and control groups, from 2ed May 2015 to 14th July 2016 the sample consisted of 60 students, they were two Shifts (morning Shift and evening Shift) the evening Shift included 30 studentes (study group) and morning Shift included 30 studentes (control group)

Result: the studentes benifit from the implementation of education program, thier knoweledege and practice were adequatley improved and developed.

Conclusion: the education programcould be considered as a need for all primary scholl stdentes.

***Index Terms*-** health, education, school, oral hygiene,

I. Introduction

Studying on oral health status that about 82.8% of children of age group is between 5-14 years had dental caries residing conducted by Bhat Meghashyam in the coastal areas of Karnataka region in south India. [(2)] The goal of World Health Organization (WHO) is "Health for all by the year 2025" includes oral health also.[(3)] Oral health is an important aspect of the personal health of individual teeth is essential not only for mastication of food but also for good appearance and clear speech.[(4)] the school age year good dental hygiene and regular attention to dental caries is vital part of health supervision during this period.[(5)] By the age of 7 years, the child is capable of assuming responsibility for dental care including the use of dental floss. An oral health check-up is recommended every 6 months because only approximately 35% of the population visits a dentist yearly. The school system should incorporate a dental health educational programme into the curriculum. [(6)] The effectiveness of school based dental screening in many countries has come under scrutiny in recent years. It has become proposed that dental screening of children in their school achieves the aim of "Encouraging dental attendance and demand for care" and serves as "a mean of dental health and attention. [(7)] Oral health education affects the individual's oral health literacy that is imperative for better oral health. Oral health literacy emphasizes the availability of skills to obtain, understand and use information for appropriate oral health decision. [(8)]

II. METHODOLOGY

Permission was taken from appropriate authorities to conduct this study on one primary school children at Sarsang Primary School age in Khanzad/Erbil City. All of them were healthy and of comparable age (11-12years old).They were chosen on a quantitative a quasi-experimental study design non-probability (purposive) sampling technique basis was carried out through the present study with application of pre-test, first post-test and second post-test and allocated into two groups {control or morning shift(studentes were not exposed to the education dental health proggram) and study or evening shift(studentes exposed to the education dental health proggram)}.Includes 60 children, 29males and 31 females. from May 2ed 2015 to July 14th 2016 data were collected throught the use of a questionnaire tools and direct interview techniques were used as a mean of data collection consisted of three parts: socio-demographic information of students, student's knowledge regarding oral hygiene (Sources and information regarding oral hygiene, Dental caries, Oral health, Eating habits, Student's information regarding dental visiting and treatment, and Sources of drinking water) and Student's Practices regarding oral hygiene questionair and education dental health proggram which was carried out between March 20th to May 10th 2015, After study (follow up) secound week post-test and thired weeks post-test was done,

investigator again visited the same schools; questionnaire was administered to the study. the sessions were desined and schedualed for approximately (1.5 hours/day) the educational methods used for the educational proggramme were lecture-demonstration method , data show using, group disscussion and practical observed applications. Applying SPSS through F-test and Post Hoc test (Bonferroni) and descriptive analysis (frequency and percentage).

III. Results

Table 1 show that the socio-demographic characteristics of the study sample. Regarding to the students' age group, the highest percentage of them were 53.3%, 76.7% in the age group 11 years old morning and evening shifts. The majority in morning shift (53.3%) of students was female and in evening shift 50% was male and female. Type of the house indicated that the highest percentages (66.7%, 80%) were house owners in morning and evening shifts. The highest percentage (83.3%, 63.3%) were family income has <500000ID in morning and evening shifts. the highest percentage of bedroom numbers of house (53.3%, 40%) were has 2 bedrooms in morning and evening shifts. the highest percentage of mothers housewife were (96.7%, 93.3%) in morning and evening shifts. The highest percentage of mothers' education in morning shift was (50%) primary and in evening shift (46.7%) was non- educated. Concerning the highest percentage fathers' occupation (73.3%, 83.3%) were free workers in morning and evening shifts and concerning the highest percentage fathers' education (56.7%, 66.7%) were primary morning and evening shifts.

Table 1: Demographic information of students

Age of the student	Morning Shift		Evening Shift	
	F	%	F	%
11	16	53.3	23	76.7
12	14	46.7	7	23.3
Sex of student				
Male	14	46.7	15	50
Female	16	53.3	15	50
Type of the house				
Owner	20	66.7	24	80
Rent	10	33.3	6	20
Family income				
<500000	25	83.3	19	63.3
≥500000	5	16.7	11	36.7
Family members				
4-8	26	86.7	22	73.3
9-13	4	13.3	7	23.3
14-18	0	0	1	3.3
Number of bedrooms of the house				
1	8	26.7	8	26.7
2	16	53.3	12	40
3	5	16.7	6	20
4	1	3.3	4	13.3
Mother Occupation				
Employee	0	0	2	6.7
Housewife	29	96.7	28	93.3
Retired	1	3.3	0	0
Mother Education				
Non-Educated	13	43.3	14	46.7
Primary	15	50	12	40
Secondary	2	6.7	2	6.7
Diploma	0	0	1	3.3
Bachelor	0	0	1	3.3
Father Occupation				
Employee	8	26.7	4	13.3
Free Worker	22	73.3	25	83.3
Retired	0	0	1	3.3
Father Education				
Non-Educated	5	16.7	4	13.3
Primary	17	56.7	20	66.7
Secondary	6	20	3	10
Diploma	0	0	2	6.7
Bachelor	2	6.7	1	3.3

Table 2 show that (80%, 100%) morning and evening shifts of the study sample were receving information about mouth care, respectively from their dentist (43.3%) morning shift and parents (66.7%) evening shift. were receiving information about dental caries (83.3%) morning and evening shifts. the best source of information from their parents (53.3%, 43.3%) morning and evening shifts.

Table 2: Sources and information regarding oral hygiene

Have you received any information about how to take your mouth?	Morning Shift		Evening Shift	
	F	%	F	%
Yes	24	80	30	100
No	6	20	0	0
If yes who told you?				
N/A	6	20	0	0
Parents	10	33.3	20	66.7
Dentist	13	43.3	8	26.7
Teacher	1	3.3	1	3.3
Friends	0	0	0	0
Nurse	0	0	0	0
Media	0	0	1	3.3
Have you received any information about dental caries?				
Yes	25	83.3	26	83.3
No	5	16.7	4	13.3
Who is the source?				
N/A	5	16.7	4	13.3
Parents	16	53.3	13	43.3
Dentist	9	30	10	33.3
Teacher	0	0	2	6.7
Friends	0	0	0	0
Nurse	0	0	0	0

Media	**0**	**0**	**1**	**3.3**

Table 3 shows that 80% of pre-test morning shift has incorreect answer about dental caries while 76.7% of first post-test morning shift has incorrect answer about dental caries, althow 90% of secound post-test morning shift has correect answer about dental caries. Regarding oral health the highest percentage of correect answer are (86.7%, 100% , 93.3%) in pre-test, first post-test, and secound post-test morning shift.concerning the eating habits (83.3%, 86.7%) of pre-test and first post-test morning shift has incorrect answer, (93.3%) secound post-test morning shift has correct answer. in regarding sources of drinking water the highest percentage of correect answer are (60%,63.3%,76.7%) in pre-test, first post-test, and secound post-test morning shift. (96.7%) of pre-test and first post-test morning shift has fair knowledge regarding oral hygiene (66.7%) secound post-test morning shift has good knowledge regarding oral hygiene and (63.3%, 70%) of pre-test and first post-test morning shift has fair practices regarding oral hygiene (73.3%) secound post-test morning shift has good practices regarding oral hygiene

Table 3: Student's knowledge, overall knowledge, and overall practice regarding oral hygiene

Dental caries	**Morning shift observations**					
	Pre-test		**Post-test First**		**Post-test Second**	
	F	**%**	**F**	**%**	**F**	**%**
Correct	**6**	**20**	**7**	**23.3**	**27**	**90**
Incorrect	**24**	**80**	**23**	**76.7**	**3**	**10**
Oral health						
Correct	**26**	**86.7**	**30**	**100**	**28**	**93.3**
Incorrect	**4**	**13.3**	**0**	**0**	**2**	**6.7**
Eating habits						
Correct	**5**	**16.7**	**4**	**13.3**	**28**	**93.3**
Incorrect	**25**	**83.3**	**26**	**86.7**	**2**	**6.7**
Sources of drinking water						
Correct	**18**	**60**	**19**	**63.3**	**23**	**76.7**
Incorrect	**12**	**40**	**11**	**36.7**	**7**	**23.3**
Student's Overall Knowledge regarding oral hygiene						
Good	**0**	**0**	**0**	**0**	**20**	**66.7**
Fair	**29**	**96.7**	**29**	**96.7**	**10**	**33.3**
Poor	**1**	**3.3**	**1**	**3.3**	**0**	**0**
Student's Overall Practices regarding oral hygiene						
Good	**1**	**3.3**	**3**	**10**	**22**	**73.3**
Fair	**19**	**63.3**	**21**	**70**	**8**	**26.7**
Poor	**10**	**33.3**	**6**	**20.0**	**0**	**0.0**

Table 5 shows that there was a very high significant of (P= **< 0.001)** to compare pre-test morning with post-test secound morning but there is no significant to comparing with post-test first morning, pre-test evening, post-test first evening and post-test second evening (p=**1.000**).

In comparing post-test first morning with post-test secound moring it shows the very high significant of (P= **<0.001**), but there is no significant when it compared with pre-test morning, pre-test evening, post-test first evening, and post-test second evening (p=**1.000**).

Incomparing post-test secound morning with pre-test moring, post-test first moring, pre-test evining, post-test first eveing, and post-test secound evening it shows the very high significant of (P= **<0.001**).

In comparing pre-test evening with post-test secound moring it shows a very high significant of (P= **< 0.001)** but there is no significant with post-test first evening, post-test secound evening, pre-test morning and post-test first moring (p=**1.000** , p=0.289)**.**

Incomparing post-test first evening with post-test secound morning it shows the very high significant of (P= **<0.001**). but there is no significant in comparing with pre-test morning, post-test first morning, post-test secound evening (p=**1.000**) and pre-test evening (p=0.289)**.**

In comparing post-test secound evening with post-test secound moring it shows a very high significant of (P= **< 0.001)** but there is no significant in comparing it with pre-test morning, post-test first morning, post-test first evenin (p=**1.000**) and pre-test evening (p=0.289)**.**

Table 5: Comparing between student's overall knowledge regarding oral hygiene P-value of F-test and Post Hoc test (Bonferroni)

Shifts	Pre-test Morning	Post-test First Morning	Post-test Second Morning	Pre-test Evening	Post-test First Evening	Post-test Second Evening
Pre-test Morning	--------	**1.000 NS**	**< 0.001 VHS**	**1.000 NS**	**1.000 NS**	**1.000 NS**
Post-test FirstMorning	**1.000 NS**	----------	**< 0.001 VHS**	**1.000 NS**	**1.000 NS**	**1.000 NS**
Post-test SecondMorning	**< 0.001 VHS**	**< 0.001 VHS**	----------	**< 0.001 VHS**	**< 0.001 VHS**	**< 0.001 VHS**
Pre-test Evening	**1.000 NS**	**1.000 NS**	**< 0.001 VHS**	----------	**0.289 NS**	**0.289 NS**
Post-test FirstEvening	**1.000 NS**	**1.000 NS**	**< 0.001 VHS**	**0.289 NS**	---------	**1.000 NS**
Post-test Second Evening	**1.000 NS**	**1.000 NS**	**< 0.001 VHS**	**0.289 NS**	**1.000 NS**	----------

Table 6 shows that there was a very high significant association in comparing between pre-test morning both post-test second morning and post-test evening (p=<0.001), and also it shows a high significant association with post-test second evening(p=<0.002), but there is no significant with post-test first morning (p=**1.000**).

it shows a very high significant association in comparing post-test first morning with post-test second morning (p=<0.001), but there no significant with pre-test morning (p=1.000), pre-test evening(p=**0.062**), post-test first evening, and post-test second evening (p=**1.000**).

It shows a very high significant in comparing post-test second morning with pre-test morning, post-test first morning, pre-test evening, and post-test second morning (p=<0.001), but it shows a high significant with post-test first morning (p=<0.004) .

It shows a very high significant in comparing pre-test evening with post-test second morning (p=<0.001), but there is no significant with pre-test morning(p=< **0.277**), post-test first morning, post-test second evening (p=<**1.000**) , and post-test first evening (p=**0.539**).

It shows a very high significant association in post-test first evening with pre-test morning (p=**< 0.001**), and a high significant with post-test second morning (p=**< 0.004**), but there is no significant with post-test first morning (p=**0.062)**, pre-test evening (p=**0.539**), and post-test second evening (p=1.000).

It shows a very high significant association in comparing post-test second evening with post-test second morning(p=**0.001**), and it shows a high significant with pre-test morning(p= 0.002), but there is no significant with post-test first morning(p=0.277), pre-test evening, and post-test first evening (p=1.000).

Table 6: Comparing between student's overall practice regarding oral hygiene P-value of F-test and Post Hoc test (Bonferroni)

Shifts	Pre-test Morning	Post-test First Morning	Post-test Second Morning	Pre-test Evening	Post-test First Evening	Post-test Second Evening
Pre-test Morning	--------	**1.000 NS**	**< 0.001 VHS**	**0.277 NS**	**< 0.001 VHS**	**< 0.002 HS**
Post-test First Morning	**1.000 NS**	--------	**< 0.001 VHS**	**1.000 NS**	**0.062 NS**	**0.277 NS**
Post-test Second Morning	**< 0.001 VHS**	**< 0.001 VHS**	---------	**< 0.001 VHS**	**< 0.004 HS**	**0.001 VHS**
Pre-test Evening	**0.277 NS**	**1.000 NS**	**< 0.001 VHS**	--------	**0.539 NS**	**1.000 NS**
Post-test First Evening	**< 0.001 VHS**	**0.062 NS**	**< 0.004 HS**	**0.539 NS**	--------	**1.000 NS**
Post-test Second Evening	**< 0.002 HS**	**0.277 NS**	**0.001 VHS**	**1.000 NS**	**1.000 NS**	---------

IV. Discussion

Results of the present study show that the highest percentage of them were (53.3%, 76.7%) in the age group 11 years old study and control groups and finding of the present study is similar to results (50%, 51%) of previous study was conducted by Sharon Friel etal, Department of Health Promotion National University of Ireland Galway Republic of Ireland[11].

Results of the present study show that the highest percentage of them were (53.3%) in control group of students was female and in study group (50%) was male and female. and finding of the present study is similar to results (63.2%) study was conducted by Syed Emdadul Haque etal, Global Health Promotion, Division of Public Health, Graduate School of Medicine Tokyo Medical and Dental University Yushima, 1-5-45 Bunkyo, Tokyo 113-8519, Japan12 .

Type of the house indicated that the highest percentages (66.7%, 80%) were house owners in morning and evening shifts of the present study is similar to results (63.2%) study was conducted by Gushi etal,2005.

The highest percentage (83.3%, 63.3%) were family income has <500000ID in morning and evening shifts of the present study is similar to results 43.0 % were defined as being rich, 33.8 % middle, and 23.2 % belonged to the low bands of socio-economic index by Syed Emdadul Haque etal, Global Health Promotion, Division of Public Health, Graduate School of Medicine Tokyo Medical and Dental University Yushima, 1-5-45 Bunkyo, Tokyo 113-8519, Japan12.

The highest percentage of mothers' education in morning shift was (50%) primary and in evening shift (46.7%) was non-educated. Concerning the highest percentage fathers' education (56.7%, 66.7%) were primary morning and evening shifts finding of the present study is similar to results education level of parents (47.4%) was conducted by Singh N, Community Medicine, Armed Forces Medical College, Pune, Maharashtra, India13.

Finding of the present study is similar to results students' level of knowledge was significantly ($p<0.01$) improved after conducting the program study was conducted by Nahid Khalil Elfaki etal Nursing, College, Najran University, KSA14.

Health education program offered to children and encouraged them to adopted regular oral health behavior such as tooth-brushing at least twice a day, visiting dentists at least once a year, and reduction in consumption of sugary food/ drinks reduced dental decay (Rayner, 1992; Ivanovic and Lekic,1996)15.

Also the results of this study is in agreement with the results of a similar study conducted in Chicago, USA (Biesbrock et al. 2004) where a significant reduction of incidence rate of dental caries was observed among school students16.

Similar findings have been reported too in other countries where school-based Health Education Promotes Knowledge and Practices of Oral Health among Schoolchildren preventive programs were found effective in improving oral healthy knowledge and behavior (Abdullah, 2009, Subedi et al. 2011)17.

We found a significant difference between the groups for the practice of cleaning teeth using toothbrush and toothpaste. Similar results were obtained by researchers in studies where dental health education was imparted to three groups by videos, demonstrations, and the third group acting as control, respectively 18 , 19.

Practices regarding method of cleaning teeth ($P < 0.001$), (b) knowledge on best method of cleaning teeth ($P < 0.001$), (c) reason for regular brushing of teeth ($P < 0.001$), and (d) requirement to clean teeth after eating something sweet ($P < 0.001$) in favor of group receiving additional intervention12.

In the present study it was found that there was increase in the overall knowledge score which was similar to the study

conducted by Irlane Alves de Farias among Brazilian schoolchildren in 200920.

Similar study shows the knowledge of participating children about oral hygiene that is, brushing: at baseline, 84 - 90% of the children in all four study groups had the knowledge of brush as the best oral hygiene measure. This knowledge increased from 86-98 % in group B, 90% to 99% in group C and from 87% to 90.7 % in group D after 6 months. The increment in knowledge about brush to be the best oral hygiene measure was statistically significant at the 0.1% level in groups B and C ($P < 0.001$) and at the 1% level in the case of group D ($P < 0.01$). the knowledge about role of fluorides, that is, it makes the teeth stronger. At baseline 30.26% children in the control group and 38.72%, 29.41%, and 23.62% of the children in experimental groups B, C, and D were using a fluoridated dentifrice. The practice findings of use of fluoride dentifrice correspond with the knowledge regarding role of fluoride in prevention of dental caries, as at baseline only 13% children in group B, 9% in group C, and 12% in group D had the correct knowledge[21].

V. Recommendation

1. The oral health teaching manual used should be revised to include newer concepts of oral health care like twice a day tooth brushing at an interval of twelve hours using fluoride toothpaste
2. Importance of regular dental visits for checkup.
3. Oral health knowledge and practices should be taught to secondary school students.
4. More studies should be conducted in other regions for comparison

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