INTRODUCTION

Oral health is an essential component of general health. Good oral health is considered to play a role in chewing, aesthetics and phonetics as well as in personality development. According to the American Dietetic Association 1986, good oral health means chewing properly and food is converted into required size which can be absorbed and directly goes to the cells to produce the energy required. So contributing to the general health, the prevalence of early childhood caries is as high as 70% in developing nations and up to 12% in the developed nations as well.\(^1\) If these lesions are left unchecked they can cause difficulty in chewing and pain as well as discomfort to the children which can cause high absentees from schools along with health problems.\(^2\)

Students who are not in good health and show development problems may have trouble concentrating and learning, have frequent absences from school, or develop permanent disabilities to learn and grow.\(^4\) Children with chronic dental pain are unable to focus, are easily distracted and may have problems with school work completion.\(^4\) They may also experience deterioration of school performance, which negatively impacts their self esteem.\(^5\) Left untreated the pain and infection caused by tooth decay can lead to problems in eating, speaking and learning.\(^6\) When children’s with acute dental problems are treated and their pain subsides their learning and school attendance records improves.\(^7\) People with missing teeth have to limit their food choices because of chewing problems, which may result in inadequate diets.\(^8\) The daily nourishment that children receive affects their readiness for school.\(^9\)

Oral health care is a critical component of health care and must be included in the design of community programs.\(^10\) School-based oral health assessment ensures the timely receipt of dental care from community practitioners.\(^11\)

METHODOLOGY

This epidemiological survey was conducted in 2009 in schools of Peshawar district. Schools were used as...
study areas for the 6-12 year-olds. A list of primary schools located within 10 km from Khyber College of Dentistry was obtained from the respective District Education Officers and 7 schools were randomly selected.

Children should be examined between 5th and 6th birthday and 11th and 12th birthday as recommended by World Health Organization.

From each of the school registers, all children whose age fell within a range of 5½ and 6½ as well as 11½ and 12½ years were asked to make two lines according to gender. Using random numbers, a total of 967 children (377 boys and 590 girls) were selected (Table 1). This was in excess of the estimated sample size (n=500).

| TABLE 1: DISTRIBUTION OF NUMBER OF SUBJECTS EXAMINED ACCORDING TO GENDER |
|-----------------|-----------------|-----|
| Gender          | Children (%)    | ages |
| Boys            | 377             | 39% |
| Girls           | 590             | 61% |
| Total           | 967             | 100%|

Permission to carry out the study was sought from and granted by the health and school authorities in their areas of jurisdiction. The head teachers (on behalf of children) gave verbal consent.

Prior to the field survey, four trained dentists were calibrated in oral examination among the 12 year-olds (n=10) in the department of Paedodontics, Khyber College of Dentistry, Peshawar, in order to minimize inter-examiner variability. The mean inter-examiner consistence in recording caries was found to be 96% (range, 93% – 98%).

Intra-oral examination of subjects was carried out by four trained dentists, in daylight. An assistant recorded the observations. Indirect sunlight was the source of illumination. Disposable wooden spatulas were used in the examination.

Malocclusion was recorded as present if, one or combination of the following criteria was met:

i. Had a significant and unacceptable effect on facial appearance.

ii. Caused significant reduction in masticatory function or resulted in significant speech impairment.

iii. Constituted an occlusion predisposing to tissue destruction in the form of periodontal disease or caries.

All children who had previously undergone orthodontic treatment were excluded from this study.

Caries was assessed using Decayed Missing Filled Teeth (DMFT) index (25) according to criteria described by WHO(24). Caries was recorded as being present when a lesion in a pit/fissure or on a smooth surface had a detectable softened floor, undermined enamel, softened wall or temporary filling. When in doubt, the carious lesion was not recorded. Stained pits or fissures that caught the probe, but did not have undermined enamel, softened floor or walls were not counted as carious lesions. A tooth was considered filled if it had a permanent restoration and it was considered missing due to caries if there was history of pain and or presence of a cavity prior to extraction.

The labial and buccal surfaces of all the teeth were assessed for fluorosis. Each subject was given a score equivalent to that attached to the most severely affected homologous pair of teeth. Questionable fluorosis was recorded as no fluorosis.

Oral hygiene was graded as follows

**Good:** When there was no plaque/calculus deposits along with no bleeding gums while brushing.

**Satisfactory:** While some time slight bleeding during brushing

**Poor:** When gums bled even with touching of finger

Data were analyzed using the Statistical Package for Social Sciences. Student’s t test for independent samples was used to assess any significant differences between means of quantitative variables. Chi square ($\chi^2$) statistics were used to compare frequency distributions of subjects on the basis of prevalence of oral conditions, gender and other variables. The level of significance was set at 5% ($p=0.05$).

**RESULTS**

Generally caries was significantly more severe in females as compared to males in children ($p<0.05$).
Dental caries (DMFT $\geq 1$) were recorded in 54.7% of the children. The D- and M-components contributed 45.6% and 8.1% of the DMFT scores, respectively. The F-component had a negligible contribution. The overall mean DMFT score was 1.13±0.496, with a significantly females were effected than males. Fig 1

Dental caries (DMFT $\geq 1$) were recorded in 54.7% of the children. The D- and M-components contributed 45.6% and 8.1% of the DMFT scores, respectively. The F-component had a negligible contribution. The overall mean DMFT score was 1.13±0.496, with a significantly females were effected than males. Fig 1

Among children 49.2% have good oral hygiene, 31.4% have satisfactory and 19.3% have poor oral hygiene status.

Overall, the prevalence of malocclusion in children is shown in the Figure 2

Among children 49.2% have good oral hygiene, 31.4% have satisfactory and 19.3% have poor oral hygiene status.

Overall, the prevalence of malocclusion in children is shown in the Figure 2
The prevalence of dental fluorosis was very low (0.3%) as compared to Pakistan statistics which is 4.1% moderate fluorosis.

DISCUSSION

Many studies have been conducted in the world on oral health assessment of children like an epidemiological study on oral health status of 5 & 12 years school going children in Chennai city, India in 2005. The results of this study shows that the gingival assessment using Green and Vermillion index modified for 5 years age group, above 80% were having good oral hygiene and 20% were with poor oral hygiene. Boys exhibited poor oral hygiene as compared to girls, which was statistically significant, (P=0.01). Dental caries assessment of 5 and 12 years. In 5 years boys dmft was 3.53±3.07, girls was 3.49±2.83. In 12 years the DMFT for boys was 3.80±3.43, girls 4.11±2.98 shows the prevalence of dental fluorosis in 5 and 12 year group. 2.5% of 12 year group and 1% in the 5 year group showed dental fluorosis.10

A survey was carried out on prevalence on dental caries among school children of moodbidri in udupi district in India. The caries prevalence was found to be 76.9%. The mean DMFT was 0.78 and the mean deft was 3.48. 12

A survey was carried out on prevalence of dental ailments among school children of Peshawar by Ahmed Iqbal in 1974 on WHO pattern which was published in Vol.1,No.I of “Pakistan oral and dental journal”.13 The subjects were divided into two group. Group I (low income group, students of Islamia Collegeate School) and group 2 (Higher income group students of University Public School). The following results were recorded;

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Children</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>441</td>
<td>2.24</td>
</tr>
<tr>
<td>M</td>
<td>79</td>
<td>1.32</td>
</tr>
<tr>
<td>F</td>
<td>9</td>
<td>1.55</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Oral hygiene status</th>
<th>Children</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>476</td>
<td>49.2</td>
</tr>
<tr>
<td>Satisfactory</td>
<td>304</td>
<td>31.4</td>
</tr>
<tr>
<td>Poor</td>
<td>187</td>
<td>19.3</td>
</tr>
</tbody>
</table>

Children should be examined between their fifth and sixth birthday. This age is of interest in relation to levels of caries in the primary dentition which may exhibit changes over a shorter time span than the permanent dentitions at other index ages. In some countries 5 years is also the age at which children begin primary school.

This age is especially important as it is generally the age at which children leave primary school, and therefore in many countries, is the last age at which a reliable sample may be obtained easily through the school system. Also it is likely at this age that all the permanent teeth, except third molars, will have erupted for these reasons, 12 years has been chosen as the global monitoring age for caries for international comparisons and monitoring of the disease trends.14

This epidemiological survey was conducted in the 7 different schools of Peshawar in order to draw
subjects from closely similar areas. Inter-examiner variations in oral examination may give different results.15 Although, in this study, different examiners were employed, it may not have influenced the findings since a high inter-examiner consistence was recorded during calibration and their reliability test gave a substantial agreement. Two index age groups of 6 and 12 years recommended by WHO16 for field surveys were considered in this study. Children should be examined between their fifth and sixth birthday. This age is of interest in relation to levels of caries in the primary dentition which may exhibit changes over a shorter time span than the permanent dentitions at other index ages. In some countries 5 years is also the age at which children begin primary school. The 12 year-olds were included in this study as they were assumed to have most of the permanent teeth erupted and have had a relatively sufficient time of exposure to the oral environment.

Same sampling technique was employed for each age group. Both groups were examined in school environment.

The areas of study were 10 km from Khyber College of Dentistry Peshawar, indicating that the subjects were from approximately the same area. Although these groups of subjects could have been living under slightly different conditions, assessment of factors that may have influenced the trend of oral diseases in these groups was beyond the scope of this study. Standardized criteria as described by WHO16 have been used in the assessment.

The prevalence of dental caries in this study was significantly less than our national score which is 1.39 for 12 years old, higher in females than in males. Although caries experience (mean DMFT score) was generally low, 0.13 contribution of the D-component by 83.3%. Indicate how much of the caries goes untreated. It was also evident that among the 6 and 12 year-old subjects only 54.3% were caries-free implying that even if the severity of the disease was low; it is widespread and is a cause for concern. Although the specific areas previously studied were not precisely indicated, the prevalence and severity of dental fluorosis (4%) were substantially higher than in the present study (0.3%).

According to WHO criteria, gum bleeding was moderate;17 and more common among the children while the dmft which is 1.26 is below our national score for 12 years old.

REFERENCES
12 Silvia cypriano, RosanaH.S. Huffmann, Maria daluz R. de sousa, Ronaldo S wada, Dental caries experience in 12 yr old school children in Southeastern Brazil, J Appl.oral sci 2008 .16