

# Association of Dental Diseases with Personal Hygiene in School Children of Rural Rajasthan, India

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**Abstract**— Dental diseases are health problem of developing countries mainly because of the fact that in developing countries these diseases are given less importance. People also not much bothered about children's personal hygiene and dental diseases until it leads to toothache and disability. And at this time it may lead to complication and expensive treatment. So a community based study was conducted in rural area of Jaipur district to find out the association between dental diseases and personal hygiene. From schools of Amer tahsil of Jaipur district 1600 students were examined for dental diseases and interrogated and observed for personal hygiene. Association of personal hygiene with dental diseases like Dental Carries, Dental Fluorosis, Malocclusion and Periodontitis was found out with chi-square test. It was revealed that Dental diseases like Dental Carries, Dental Fluorosis, Malocclusion and periodontitis all are associated with personal hygiene. Dental carries increases as the personal hygiene worsen and likewise same was observed with Malocclusion but Dental Fluorosis was observed in inverse direction mean as the personal hygiene improves the chances to have Dental Fluorosis increases. Periodontal it was found significantly more when personal hygiene of child is either poor or good, when it is fair chances of having Periodontal diseases were significantly less.

**Keywords**— Dental Carries, Personal Hygiene, Dental Fluorosis, Malocclusion, Periodontitis

## I. INTRODUCTION

The word “Hygiene” was came from the Greek word “hygies” (Hygiea Goddess of Health) means Healthy, sound. Personal hygiene may be described as the principle of maintaining cleanliness and grooming of the external body. Failure to keep up a standard of hygiene can have many implications. Not only is there an increased risk of getting an infection or illness, but there are many social and psychological aspects that can be affected. According to the Centers for Disease Control and Prevention, addressing the spread of germs in schools is essential to the health of our youth, our schools, and our nation. Good hygiene prevents the spread of germs. It also helps to give a good first impression to others. Regular routine personal care include washing and grooming of Hairs, Face & Skin, Teeth, Ear, Hands, Nails, Feet, etc. Personal hygiene including Clothing, Hair, Nail, Teeth (Dental caries), Ear, Nose. Health Practices including Hand washing, Foot care, Brushing, Bathing, Physical exercise. Bad personal hygiene and habits results in different sicknesses. Healthy habits are the integral part of personal hygiene. It is concerned directly with individuals and deals with personal cleanliness and health care. <sup>1, 2</sup> cases.

Hygiene is more than just being clean. It is defined as the many practices that help people be and stay healthy. Personal hygiene are the behaviors that must be practiced in daily life, starting from morning to sleep time to protect our health. To protect health, body, hair, mouth and teeth must be cleaned regularly

and clothes must be washed frequently. Personal hygiene is intimately involved with health. It is absolutely known that germs easily grow in unclean bodies and cause illnesses.

Oral health is fundamental to general health and well being, significantly impacting on quality of life.<sup>3</sup> Ability to chew and swallow is a critical function required to obtain essential nutrients for the body.<sup>4</sup> Childhood oral diseases, if untreated, can lead to irreversible damage, pain, disfigurement, more serious general health problems, lost school time, low self-esteem and poor quality of life. Delay in treatment not only results in aggravation of the disease, but also the cost of treatment is substantially escalated as a consequence.

In many developing countries like in India, access to oral health services is limited and teeth are often left untreated or are extracted because of pain or discomfort. Most of the time managing such problems is beyond the resources of many developing countries.<sup>5</sup> Grass-root level health workers and doctors do not have adequate knowledge about personal hygiene and prevention of oro-dental problems. Such factors have resulted in poor oro-dental health of our population.<sup>6</sup> Oral diseases such as dental caries, gingivitis, Periodontitis are global health problems in both the industrialized and developing countries and are increasing, especially amongst children coming from poorer communities.<sup>6</sup> Malocclusion, and oral cancers constitute an important public health problem in India today.<sup>6</sup> This present study was conducted to found association between personal hygiene practices and dental diseases in school children of rural Rajasthan.

## II. METHODOLOGY

A Cross Sectional observational study was carried out on 1600 school going children aged 5-16 years of rural area of district Jaipur.

Sample size was calculated 1514 subjects at 95% confidence limit and 10% relative allowable error assuming prevalence of Dental Caries 20.9% in school children with poor personal hygiene.<sup>7</sup> So for the study purpose 1600 school children was taken. List of schools in the selected area of Amer Tahsil was procured from the office of Deputy Director of Education Department, Jaipur District. School for survey was selected randomly till the sample size achieved.

Identified Schools were visited after due permission of Head/Principal of school, on the mutually pre-decided date and time so as to examine the maximum number of children by a dentist.

Children were examined in the school premises at a suitable place in presence of respective class teachers. Firstly they were examined for personal hygiene<sup>8</sup> along with general information. For dental checkup, subjects seated in ordinary chairs in natural day light for illumination, avoiding direct sunlight. They were examined for dental diseases and were asked about their habits related to personal hygiene.

Data were collected on predesigned proforma. Data thus collected were compiled and analyzed with statistical software Primer version 6. To find out significance of difference in proportion chi-square test was used. For Significance p value equal to or less than 0.05 was considered significant.

## III. RESULTS

Present study observed that out of total 1600 children, only 387 (24.19%) were having good personal hygiene otherwise 894 (55.87%) were having fair and 319 (19.94%) were having poor personal hygiene of surveyed children. (Figure 1).

Present study also observed that out of total 1600 children majority 703 (43.94%) of children were suffering from dental Malocclusion followed by Dental Fluorosis (34.56%), periodontal (32.69%) and Dental Carries (27.94%). (Figure 2)

Figure 1

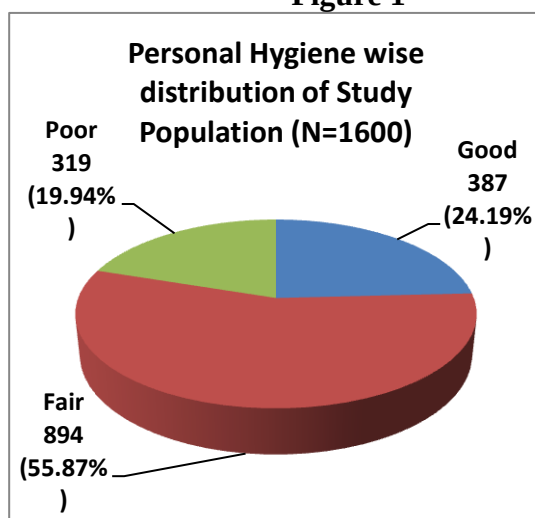
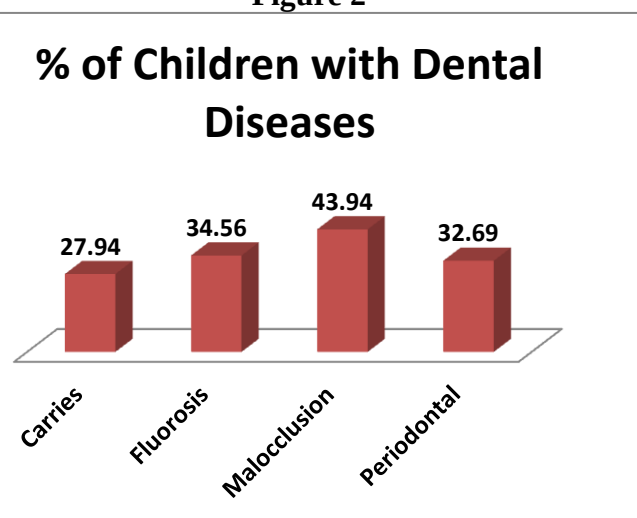


Figure 2



In this study association of personal hygiene with dental diseases were observed. Dental carries increases as the personal hygiene worsen and likewise same was observed with Malocclusion but Dental Fluorosis was observed in inverse direction mean as the personal hygiene improves the chances to have Dental Fluorosis increases. Periodontal it was found significantly more when personal hygiene of child is either poor or good, when it is fair chances of having Periodontal diseases were significantly less. (Table 1)

**Table 1**  
**Association of Mouth Rinsing Frequency with Dental Diseases\***

| Personal hygiene                      | Total |       | Dental Carries       |         | Dental Fluorosis     |         | Malocclusion         |         | Periodontal         |         |
|---------------------------------------|-------|-------|----------------------|---------|----------------------|---------|----------------------|---------|---------------------|---------|
|                                       | No.   | %     | No.                  | %       | No.                  | %       | No.                  | %       | No.                 | %       |
| Good                                  | 387   | (100) | 6                    | (1.55)  | 203                  | (52.45) | 34                   | (8.79)  | 167                 | (43.15) |
| Fair                                  | 894   | (100) | 160                  | (17.9)  | 327                  | (36.58) | 443                  | (49.55) | 207                 | (23.15) |
| Poor                                  | 319   | (100) | 281                  | (88.09) | 23                   | (7.21)  | 226                  | (70.85) | 149                 | (46.71) |
| Total                                 | 1600  | (100) | 447                  | (27.94) | 553                  | (34.56) | 703                  | (43.94) | 523                 | (32.69) |
| Chi-square Test at 2 DF<br>P Value LS |       |       | 751.892<br>P<0.001 S |         | 161.907<br>P<0.001 S |         | 229.350<br>P<0.001 S |         | 84.690<br>P<0.001 S |         |

\*Multiple Response

#### IV. DISCUSSION

Present study revealed that dental diseases were found to be associated with personal hygiene. Although few like Baskaradoss, JK(2008)<sup>9</sup> did not observe any significant difference was found between the personal hygiene habits but many of other authors<sup>10-14</sup> had well comparable findings. These studied dental diseases were found to be associated with personal health in following manner:-

Present study observed that 19.94% of surveyed children were having poor personal hygiene whereas Ashish Chaudhary et al<sup>15</sup> reported 15.91% poor personal hygiene in school children of rural area. This little more proportion of poor personal hygiene in present study may be due to socio-geographical and time frame difference.

Present study also observed dental Malocclusion in 43.94% followed by Dental Fluorosis (34.56%), periodontal (32.69%) and Dental Carries (27.94%). Although Panda P et al<sup>16</sup> found prevalence of dental carries about 11.1% among rural school children in Ludhiana but Indra Bai et al<sup>17</sup> reported comparable prevalence of Dental caries i.e. 20.9% in school going children of Tirupathi city of Andhra Pradesh.

In this study association of personal hygiene with dental diseases were observed. Dental carries increases as the personal hygiene worsen and likewise same was observed with Malocclusion but Dental was observed in inverse direction mean as the personal hygiene improves the chances to have Dental Fluorosis increases. Periodontal it was found significantly more when personal hygiene of child is either poor or good, when it is fair chances of having Periodontal diseases were significantly less. These findings are in accordance with the findings of K. Pandit et al (1986)<sup>10</sup> who also reported that prevalence of caries was found to increase significantly in those who do not clean their teeth regularly. Even Girish Parmar (2006-07)<sup>11</sup> reported that prevalence of caries was comparatively lower in children who used toothbrush than amongst those who used tooth powder and neem datun in Gujarat. Dental Fluorosis was observed just reverse of that may be due to the fact that during mouth rinsing chances of ingestion of floridated water are more, so chances of having Fluorosis are increased.<sup>12</sup> Another fact is that most of tooth powder and toothpaste contain fluoride so more use of these in childhood may lead to Dental Fluorosis. In Malocclusion also significant association was observed may be because poor personal and oral hygiene also played an important role in the occurrence of the dental caries which can lead to premature loss of deciduous and permanent teeth thereby causing migration of contiguous teeth, abnormal axial inclination and supra eruption of opposing teeth factors that are responsible for development of Malocclusion.<sup>13</sup> Toothbrush and toothpaste are used to maintain day to day oral hygiene and good personal hygiene status was found to be significantly correlated with better periodontal health. These are the mechanical aids which help in removing the microbial plaque in daily routine which in turn are responsible for good personal hygiene as well as less prevalence of Periodontitis.<sup>18</sup> Hygiene is a risk factor for periodontal disease and other bacterial and inflammatory conditions. General hygiene practices promotes better overall oral health and general health.<sup>19</sup>

## V. CONCLUSION

It was concluded from this study that Dental diseases like Dental Carries, Dental Fluorosis, Malocclusion and peridontitis all are associated with personal hygiene. Dental carries increases as the personal hygiene worsen and likewise same was observed with Malocclusion but Dental Fluorosis was observed in inverse direction mean as the personal hygiene improves the chances to have Dental Fluorosis increases. Periodontal it was found significantly more when personal hygiene of child is either poor or good, when it is fair chances of having periodontal diseases were significantly less.

## CONFLICT

None declared till date.

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