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Hartford, Connecticut**

Dental Health Of Children Of Migrant Farmworkers In Hartford, Connecticut

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In this study 513 children of migrant farmworkers ranging in age from three to seventeen were examined, their dental health status evaluated, and the results compared to a study of migrant children done statewide three years earlier and also to a study of children living in a Connecticut community that had been fluoridated for twenty-two years. Oral exams included: caries, DMF, def, and gingival index. This study demonstrated a higher decay attack rate in a group of migrant children and is at variance with data collected two years previously in which migrant children's dental health compared favorably with that of indigenous children.

In 1978, the Hartford Center of the Migratory Children's program contracted with the Department of Pediatric Dentistry at the University of Connecticut School of Dental Medicine to examine all of the children in the migrant children's summer program and evaluate their dental needs. The Migratory Children's Program is a federally funded program, designed to provide supplementary educational and social services to children of migratory agricultural workers whose educational routine is interrupted due to the seasonal nature of their parent's or guardians employment. In this report, the quantitative results of dental examinations of the children of migrant farmworkers living in Hartford, Connecticut, will be presented, and a referral system devised to care for their needs will be described.

The problems of providing health care to children of migrant farmworkers has been well-documented. In addition to the problems in receiving health care associated with poverty in this country, such as inability to pay, lack of health insurance, inadequate transportation, and difficulty in taking time off from employment, the migrant farmworker faces the added complication of frequent relocation and lack of continuity of care.

Perhaps as a result of these problems, the majority of clinical studies indicate that the dental health of migrant farmworkers is poor (1, 2, 3, 4). On the other hand Ragno and Castaldi (5) found that the oral health of Connecticut migrant farmworker's children was similar to that of resident Connecticut children living in a fluoridated community (6). Although the migrant children still required considerable treatment, Ragno and Castaldi (5) reported the overall caries prevalence to be less than previously reported by other authors.

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The present study group consisted of predominately Spanish-surnamed children, most of whom were recent immigrants from Puerto Rico, with a few black and even fewer white children. Most of the children have not lived in the Hartford area for very long and were a predominately urban group. The statewide migratory group of children studied by Ragno and Castaldi included a much more diverse group with black, white, Puerto Rican and Portuguese immigrants as members. That program consisted of urban, suburban, and rural centers. Many of these children's families had come to settle more permanently in the area and they, therefore, received the benefits of living in fluoridated communities.

Many reports of the dental health of migrants describe dental student outreach programs, the use of mobile units, and cooperative efforts by local dental societies (7, 8, 9, 10, 11). However, the success of these programs has always been hindered by the migrant families' frequent relocation.

In previous programs involving migratory children throughout the state of Connecticut, private practitioners had been contacted and persuaded to care for the children in their offices during the course of the summer program (5). This was not feasible in the Hartford program because of the large numbers of children involved and the lack of private practitioners in the area where the program was located. An alternative referral system was devised in which only children requiring emergency treatment for pain or apical abscess were referred to a local practitioner or to an emergency treatment facility. Six community treatment facilities were contacted to provide comprehensive care during the summer program and a follow-up system was proposed so that children whose required treatment was not completed could have it done during the school year. The facilities contacted included two clinics run by the University of Connecticut School of Dental Medicine (one staffed by dental students and one staffed by family dentistry residents), a community organization staffed by dentists from the USPHS, and two school based dental programs in which there was a dentist providing the service. The relative advantages and disadvantages of this referral system will be discussed.

Materials and Methods

The method of examination utilized was the same as in previous studies by Castaldi and Pelletier (6) in examining children living in New Britain, Connecticut, and by Ragno and Castaldi (5) who examined Migratory children throughout the State of Connecticut. In total, 513 children in the Hartford program were examined. The examination procedures were standardized and included the following: caries (DMF and def), gingival index, traumatically injured teeth,

and presence of stain. The level of treatment was divided into four categories: a) no defects, b) all treatment done, c) partial treatment, and d) care needed but none done. In addition, those children felt to be in urgent need of care, as defined by Ragno et al (5), were also identified. The caries status of the first permanent molars was assessed and gingival health was determined using the gingival index of Loe (12).

In addition to screening and referral, a preventive program was instituted to involve the children and teaching staff in a program of supervised oral hygiene using a fluoride containing dentifrice.

Results

A total of 513 children ranging in age from three to 17 years were examined. Data was collected on the School Health Survey Form, a form based on the "Connecticut Child Dental Health Survey" developed by the Connecticut State Dental Association and modified so that data could be keypunched directly from the form for computer analysis.

Treatment Level

Of the 513 Hartford children examined, 325 (63%) were found to require comprehensive dental care, an additional 66 (15%) were found to require emergency care or were in urgent need of care. The DMF per 100 permanent teeth is reported in Table 2.

When the clinical status of first permanent molars was assessed in children aged six to nine, the percentage of caries free teeth was 49.6%, while the percentage of decayed missing or filled teeth was 50.4%. This DMF consisted of 31% decayed, .2% missing and 19% filled. In the age group from ten to twelve, the percentage of caries free first permanent molars dropped to 32% while the DMF rose to 68%. The DMF in this age group consisted of 29% decayed, 4% missing and 35% filled, (Table 2).

The def rates for six and seven year olds were also calculated using only erupted canines and first and second deciduous molars. Six year old migrant children had a percentage def of 23% while seven year olds had a percentage def of 22%, (Table 3).

When the clinical status of first permanent molars in the six to nine year age group is compared to the findings in the statewide sample of migrant children (5) and with a sample of children living in a fluoridated community (New Britain, Connecticut) (6) some important differences are found between the samples. The Hartford sample had a much lower percent caries free rate (49.6%) than New Britain children (69%) or the states' total migrant sample (67%) as reported by Ragno and Castaldi. They also had a greater percent decayed, (31% vs. 23% statewide, vs. 23% in the New Britain population) and filled (19% vs. 9% statewide and 10% New Britain) as well as a higher percent DMF (50.4% vs. 32% statewide and 31% New Britain) than reported in a

previous survey of migrant children (6).

The ten to twelve age group showed a lower caries free rate (32% vs. 47% statewide vs. 45% New Britain) than either a previous sample of migrant children or New Britain children. The missing rate in this age group was comparable in the Hartford migrants (4%) to the statewide sample (4%) but higher than the New Britain sample (1%). Decayed rates were comparable for all samples (29% Hartford, 30% statewide, 25% New Britain). The filled rate of the Hartford sample (35%) was higher than either that of New Britain children (29%) or statewide migratory children (18%) but closer to the rates exhibited by New Britain children. The percentage DMF for ten to twelve year olds was 68% for Hartford migrants as compared to 53% for statewide migrants and 54% for indigenous children. The percentage def found in the Hartford migratory children, (23%) did not differ substantially from that found in migrant children throughout the state (5).

Discussion

Caries & Treatment Level

The results of the examinations of the Hartford Migratory children, in contrast to those of Connecticut migrants statewide, (5) are in keeping with other reports of poor dental health in migrant children from other parts of the country (2, 3, 4).

The percentage (63%) of Hartford migratory children who required some dental treatment was comparable with that of the statewide migrant sample examined by Ragno and Castaldi (5) as well as with a sample of New Britain children living in a fluoridated community (6). The percentage of children requiring emergency care or in urgent need of care (13%) was also comparable to that found by Ragno and Castaldi (5) and Castaldi and Pelletier (6).

When percentage DMF is considered, both the six to nine year old and the ten to twelve year old Hartford migrant children exhibited substantially poorer dental health than did migrant children statewide or a population which was stable and drinking fluoridated water. In the six to nine year age group both the percentage decayed and the percentage filled was higher than in either comparison group. The difference in percentage DMF in the ten to twelve year age group between Hartford migrants and New Britain children was primarily in the missing and filled rates, while the difference between the Hartford migratory children and statewide migratory children was primarily in the filled rate. Thus, when compared to statewide migrants, ten to twelve year old Hartford children had received more restorative dental treatment, while compared to New Britain children they had experienced more extractions as well as restorative treatment.

The lack of consistent exposure to a fluoridated water supply might account in part for the higher percentage DMF and lower percentage caries free first permanent molars observed in Hartford migratory children.

The fact that the Hartford children had received more restorative dental care than either comparison group and more extractions than New Britain children, might also be explained by a higher caries prevalence due to lack of fluoridated water. Hartford school children participate in a variety of dental programs and this might account for the higher filled rate in the ten to twelve year age group. On the other hand, while migrant children may have access to dental care, such care may be sporadic and not comprehensive for a variety of reasons, so that a higher proportion of extractions was found in both the Hartford and the statewide migrant samples.

Referral and Subsequent Treatment of Children Examined

Although, as in the past, those children who were brought to the dentist during the summer program did receive treatment, the followup system for comprehensive care was not successful. The reasons for this were many. With the start of the school year, the children who had gathered together for the summer program in a single center dispersed to various schools throughout the city. Many of the Hartford schools the children attended had dental programs and two of the schools had dentists treating children within the school. Unfortunately, the migratory children's program did not have sufficient staff to identify which school each child attended or to identify those children needing treatment in the school system so that they might more rapidly receive treatment within existing programs. A related problem was that before some of the children could be treated in an existing program, their family moved, and they changed schools. In addition, one of the treatment facilities that had agreed to treat the largest number of children was staffed primarily by dental students, a relatively inefficient method of delivering care. Still another problem was that many of the children and their parents, who were recent immigrants, spoke little English, which led to difficulties in communication during treatment and scheduling appointments.

Conclusions

The results of the examinations of Hartford migratory children indicate that their dental health did not compare favorably with children in Connecticut living in a fluoridated community.

Even more discouragingly, after several years of screening the children in the migratory children's summer program and determining their need for dental care, we did not solve any of the problems that have continued to plague dentists treating migrant farmworkers and their children. Although many of the

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farmworkers are covered by Title 19 and inability to pay is not as much an issue as it has been in the past, inadequate transportation and the parents' inability to take time off from work for dental appointments were some of the problems we were unable to solve. The problem that appeared the greatest, but is most basic to the farmworkers' condition, was frequent relocation and resulting lack of continuity of care. In many cases, the children's families moved before they could benefit from available community programs. The outcome of this is that children continue to be screened, but often do not receive comprehensive treatment after their needs have been determined. □

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Table 1

DMF per 100 Permanent Teeth in Hartford Migrant Children in 1978

Age	DMF	Erupted Teeth	DMF/100 Permanent Teeth
5	5	51	9.8
6	40	191	20.9
7	70	430	16.3
8	97	668	14.5
9	81	572	14.2
10	107	929	11.5
11	143	994	14.4
12	158	869	18.2
13	96	621	15.3
14	55	316	17.4
15	50	157	31.8
16	12	56	21.4
17	14	28	50.0

Table 2

Clinical Status of First Permanent Molars in Hartford Migrants 1978

Age	Number of Children	Number of Teeth	Caries Free	D	M	F	DMF	Caries Free	D	M	F	DMF
6-9	182	544	270	170	1	103	274	49.6%	31%	2%	19%	50.4%
10-12	113	451	143	131	17	160	308	32%	29%	4%	35%	68%

Table 3

def* in Hartford Migrant Children in 1978

Age	Number	Erupted Teeth	def	Total def	Percent def
6	36	443	2.75	99	23%
7	47	549	2.57	121	22%

*Only erupted canines, first and second deciduous molars in six and seven year old children are included in accordance with previous reports of def in Connecticut children.