

THE DENTAL HEALTH OF CHILDREN OF MIGRANT AND SEASONAL AGRICULTURAL WORKERS

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The interstate travels of many of those who harvest our abundant fruit and vegetables have prompted the federal government to assume the responsibility of developing, and in some cases providing, medical and dental services for them and their dependents. Not only their mobility, but other factors such as their economic situation and low level of educational attainment cause special difficulties with regard to health care.¹⁻³ Federal support is often given as grants to state and local health departments for migrant health projects to cope with the seasonal influx of farmworkers and their families.

The potatoes and cabbages grown in the fertile soil of the St. Johns River basin in northeast Florida are among the crops which have given rise to the migrant stream. During the peak winter season in this area, approximately 3,000 additional laborers were needed in the fields a few years ago. However, this pattern of employment is changing, partly because mechanization and new methods of crop management have eliminated the need for very brief labor—intensive harvest periods.⁴ Also, parents are becoming more interested in their children's education. Many who find it necessary to travel beyond normal commuting distances leave their families behind, especially during the school year.⁵ As these life styles evolve, the residency histories of some of the children in the population unfairly influence their eligibility for health benefits. When a narrow definition of being truly migrant is applied, the indigent children of seasonal agricultural workers with the same types of problems as migrants fail to qualify. The Migrant Health Program of the Health Services and Mental Health

Administration, HEW supported efforts by the Department of Community Health and Family Medicine at the University of Florida to assess the health status of migrant and seasonal agricultural workers and their families in this area during the 1972-73 harvest.* This paper will present the findings of a dental survey of the school aged children which are part of the comprehensive health evaluation.

Although a surprising number of articles about dental programs for migrants have been published, most of this literature recounts the endeavors of dental schools,⁶⁻⁸ religious organizations,⁹⁻¹⁰ and health departments¹¹⁻¹³ to provide dental services. These programs range from small pilot projects to fairly comprehensive systems of care. The articles are replete with opinions and clinical impressions which acknowledge lack of dental care as a problem; but only two small studies have been conducted to establish and define, in a quantitative manner, the extent of dental disease in migrant groups.^{14,15} And the oral health status of seasonal agricultural populations has not been described.

METHODOLOGY

School officials were contacted in the three counties (St. Johns, Flagler, and Putnam) which comprise the St. Johns River basin to arrange for dental examinations to be conducted in the schools using portable equipment. For this purpose, 644 children of agricultural workers were identified by teachers as either seasonal or migrant from official school records. Their age at last birthday, race and sex were also noted. The examinations were conducted after calibrations by residents and faculty of the Department of Community Dentistry at the University of Florida with the aid of artificial illumination, front surface mirrors, and No. 23 explorers

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The examination consisted of a determination of decayed and filled deciduous teeth and surfaces, dft and dfs; the number of decayed, missing, and filled permanent teeth and surfaces, DMFT and DMFS; the amount of debris and calculus present, OHI-S; and a measure of gingival inflammation, GI (modified). Caries experience and the level of restorative care was established for the deciduous teeth according to the method advocated by Gruebbel.¹⁶ The indexes developed by Klein and Palmer were employed to record similar information about the permanent dentition.¹⁷ And Greene and Vermillion's index was applied to evaluate the oral hygiene of the children.¹⁸

Gingival inflammation was measured around six selected teeth: the maxillary right first molar, right central incisor, and right first bicuspid. Each tooth was scored only once and a permanent tooth distal to a selected tooth was scored as a replacement if the selected tooth was absent or was a deciduous tooth. Only fully erupted teeth were considered. The scoring was as follows:

- 0—Absence of signs of inflammation
- 1—Mild to moderately inflammatory gingival changes, not extending around the tooth
- 2—Mild to moderately severe gingivitis extending all around the tooth
- 3—Severe gingivitis characterized by marked redness, swelling, tendency to bleed and ulceration

For each child the GI (modified) was derived by totaling the scores for the individual teeth and dividing by the number of teeth scored.

FINDINGS

Although children four to 19 years old were included in the study, Tables I and II present information only on the six to 11 age group because of the distribution of the preponderance of the sample into this age range and the use of this grouping by Series 11 of the National Health Survey and other studies. Race specific data was not compiled after determining that more than 90 percent of both the migrant children and those with seasonal agricultural connections were black. The group classified as seasonal had a higher percentage of males (53.6 percent), whereas more of the migrant children were female (56.1 percent). These discrepancies were taken into account in the evaluation of the oral health status of the youngsters.

The mean scores for each of the indexes utilized are given in Table I. The scores of the

TABLE I
MEAN SCORES OF DENTAL INDEXES OF CHILDREN AGED 6 TO 11
DENTAL HEALTH OF CHILDREN OF
MIGRANT AND SEASONAL AGRICULTURAL WORKERS

Index of Measurement	Migrant (N ₁)	Seasonal (N ₂)	95% Level of Significance**
df (N ₁ =141, N ₂ =313)	\bar{x} =2.29 (0.20)*	2.42 (0.15)	NS
dfs (N ₁ =141, N ₂ =313)	\bar{x} =4.83 (0.48)	5.82 (0.42)	NS
DMFT (N ₁ =141, N ₂ =313)	\bar{x} =1.07 (0.12)	1.16 (0.10)	NS
DMFS (N ₁ =141, N ₂ =313)	\bar{x} =1.49 (0.20)	1.92 (0.19)	NS
OHI-S (N ₁ =115, N ₂ =268)	\bar{x} =1.25 (0.03)	1.36 (0.03)	Significant
GI (mod) (N ₁ =123, N ₂ =287)	\bar{x} =0.85 (0.04)	0.96 (0.03)	Significant

*Standard Error
**Test for significance
NS=Not significant

TABLE II
COMPONENTS OF THE dft, dfs, DMFT,
AND DMFS INDEXES OF CHILDREN AGED 6 TO 11
DENTAL HEALTH SURVEY OF THE CHILDREN
OF MIGRANT AND SEASONAL AGRICULTURAL WORKERS,
1972-73

Index of Measurement	Migrant (N=141)	Seasonal (N=313)	99% Level of** significance
df	x d=1.81 (0.19)*	2.34 (0.15)	NS
	x f=0.48 (0.11)	0.08 (0.02)	Significant
dfs	x ds=3.81 (0.44)	5.67 (0.42)	NS
	x fs=1.02 (0.23)	0.15 (0.04)	Significant
DMFT	x DT=0.75 (0.11)	1.06 (0.09)	NS
	x MT=0.04 (0.02)	0.04 (0.01)	NS
	x FT=0.28 (0.07)	0.05 (0.02)	Significant
DMFS	x DS=0.88 (0.12)	1.66 (0.17)	Significant
	x MS=0.18 (0.10)	0.19 (0.07)	NS
	x FS=0.43 (0.07)	0.07 (0.03)	Significant

*Standard error
**t Test for Significance
NS=Not Significant

seasonal group are higher than those of the migrants in every instance. However, t tests indicate that the observed differences in caries experience are statistically non significant and that the oral hygiene as well as the gingival health scores are only of borderline significance (95 percent level). The unequal distribution of the sexes may explain in part the relatively superior

conditions reported for the migrant children. Nevertheless, these findings strongly indicate that the children of seasonal farmworkers experience at least the same amount of dental disease as their migrant counterparts.

Table II reflects what is happening with regard to treatment of dental caries. An analysis of the components of the dft, dfs, DMFT, and DMFS reveals meaningful disparities in the levels of care which were observed. From 21 to 29 percent of the carious teeth and surfaces had been filled among the migrants, but only three to five percent among the seasonal group. These statistically significant differences (99 percent level) give evidence that the plight of the migrant should not be overemphasized at the expense of the indigenous agricultural population. But, the overall lack of treatment for all of these children remains the saddest fact; combined only nine percent of their primary teeth and 11 percent of their permanent teeth affected by caries had been restored.

DISCUSSION

The seasonal nature of agriculture creates regularly recurring manpower requirements throughout the rural United States. The itinerant segment of society resulting has been well publicized and documented as in need of some special assistance. In this case, the guidelines of the program established for that purpose have led to too narrow a definition of who qualifies for benefits. A group of people alike in all but one respect and faced with the same perplexing circumstances of life have been assigned different priorities by a publicly funded agency. This situation is not unique; many poor people fall through the cracks among the multitude of governmental programs. Yet, even more characteristic is the insufficiency of the resources available for dental treatment. A comprehensive approach to health care for all of our needy citizens, with the commitment of the tremendous financial support which this would entail, is the only true solution to such problems. However, in this day of intense competition for the tax dollar among many worthy, and some not so worthy, causes, a realistic recognition of limitations and constraints is a necessary asset for administrators of public programs.

CONCLUSIONS

The conclusions of this paper are: (1) The

children of seasonal agricultural workers experience at least the same amount of dental disease as the children of migrant agricultural workers. (2) The children of seasonal agricultural workers receive less dental treatment than the children of migrant agricultural workers. (3) The children of both seasonal and migrant agricultural workers receive inadequate dental treatment.

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