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ABSTRACT

Some 26 Mexican American families of East Los Angeles having children in Head Start responded to a questionnaire gathering data on birthplace, family income, number of individuals in the home, and pregnancy history of the mothers. Questionnaire results recorded in this document indicate that 46% of the mothers and 35% of the fathers were born in the United States; mean length of stay in Los Angeles was 12.5 years; 58% of the Head Start children were born in the United States and 5% were born in Mexico; there was a mean of 5.8 individuals living in the home; the age range of children was from 1 to 7 years; in 65% of the homes the father was living in the home and employed as laborer or factory worker; the mean weekly income per person per week was $13; and 19% of the families were receiving Welfare while 12% were receiving Aid to Families with Dependent Children. The pregnancy history of mothers included health for 5 years prior to pregnancy, work outside the home during pregnancy, food restrictions, medical care during pregnancy, medical problems during pregnancy, vitamin and mineral preparations taken during pregnancy, and number of live-born children, abortions, stillborns, and premature children. (JB)

A PRELIMINARY STUDY OF NUTRITIONAL STATUS IN MEXICAN AMERICAN PRE-SCHOOL CHILDREN I. EXPERIMENTAL DESIGN, SELECTION OF SUBJECTS, DATA COLLECTION AND DESCRIPTION OF FAMILIES[1]

by

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INTRODUCTION

That hunger and malnutrition exist in America, the Land of Plenty, has recently been shown by the Citizens' Board of Inquiry (1), a Senate Select Committee on Nutrition and Human Needs (2), and a National Nutrition Survey (3). Malnutrition in children has been identified in Alabama, Arizona, Louisiana, Mississippi, New Mexico, New York, Oklahoma, Texas and Virginia (1,4).

Recent reports have evidenced the growing concern over the effects of malnutrition on the developing central nervous system, (5-9) while the long-term effects on both growth and future mental development are being explored. In the barrio*, the effects of malnutrit[illegible]ccentuated

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*The Spanish term used to refer to one's community or colony - the Mexican American community or ghetto.

by numerous factors a few of which are: lack of environmental stimulus, biligualism in the home, displacement of parents from a known environment, inability to obtain medical and social services, a lack of identity, and mistrust of established agencies and the Anglo culture. A report by the President's Committee on Mental Retardation showed a high incidence of retarded development among the poor. The report further stated that three-fourths of the nation's mentally retarded are in urban and rural slums (10).

It was the purpose of this study (a) to obtain information on nutritional status of pre-school Mexican American children, (b) to obtain specific cultural information to use as a basis for a nutrition and health education program for parents of Chicano* children, and (c) to use the information found to help obtain nutrition, health and education services for the community.

METHODS

Selection of subjects

Parents of children attending Head Start classes in the Highland Park, Boyle Heights, Lincoln Park and Central areas of Los Angeles which were sponsored by the Council on Mexican American Affairs were sent a letter in English and Spanish which described the study to be conducted. Attached to the letter was a form which asked if parents were interested in participating in the study, where parents and child were born, if there were younger children in the home, and where and when would be best for interviews to be

*A term coined and preferred by the people to define and identify themselves as descendents of Aztlan (the Southwest). It is a word intended to encompass the spiritual, philosophical, and socio-political involvement and committment of La Raza or the people.

conducted. Following return of the form, children three through five years of age were chosen for study.

Dietary intake, eating habits, and buying practices

Data concerning birthplace, family income, family size, food practices, as well as eating habits and dietary intake of the pre-school children were obtained by use of a pre-tested[a] questionnaire. The questionnaire was administered over a period of four days by Home Economics and nutrition students following counselling on interviewing*. Detailed instructions were given the parents verbally and in writing on how to record the child's food intake. Data on intake are being analyzed and will be reported at a later date.

Clinical evaluation of subjects

Height, weight, head circumference, other physical data, health history, and physical status were obtained by a pediatrician at the time of physical examination. Forms provided by Head Start were utilized for this purpose.

Biochemical evaluation of nutritional status

Biochemical evaluation of nutritional status was made by determining the plasma ascorbic acid and the urinary excretion of riboflavin, thiamin, N'methylnicotinamide and creatinine. Blood and urine specimens were obtained by the physician at the time of the physical examination. The blood samples were heparinized and refrigerated until centrifuged 4 to 8 hours later when plasma aliquots were acidified and frozen for ascorbic acid

[a]Pre-testing by Adeline Garcia, Bettye Dickson and four dietetic interns from Loma Linda University, Loma Linda, California.

*This project was used as a teaching tool for various nutrition classes at California State College, Los Angeles. By this mechanism, students were taught research design, interviewing techniques, laboratory methods, and statistical analysis of data as well as field problems.

determinations made one day later. The urine specimens were stored in brown bottles and were immediately acidified with 3 ml. glacial acetic acid, covered with toluene, and refrigerated until transported to the laboratory 4 to 8 hours later where they were frozen until analyzed.

RESULTS AND DISCUSSION

Problems encountered

Excellent support by the Head Start director of Economic and Youth Opportunities Agency was obtained and this support continued throughout the course of the study. Initial contacts with the director of the delegate agency, the Council on Mexican American Affairs, indicated interest and support. However, as a mayoral campaign in Los Angeles progressed support from local Head Start administration was withdrawn because of different political interests among the principals in the agency involved in the study.

Some of the problems were solved by working through the facilities of the Child Development Division of Childrens Hospital, Los Angeles. Parents and children were "bussed" to this facility where physical examinations were completed by a pediatrician. Blood and urine specimens were obtained at this time and parts of questionnaires were also completed in this setting.

Two major problems encountered in working directly with the families were (a) illiteracy in both English and Spanish and (b) the initial apprehension by the people of the professional personnel which was overcome by the demonstrated sincerity and warmth of this personnel.

Questionnaires completed

Approximately 50 dietary questionnaires were distributed initially. Of these, 15, or one-third, were in Spanish. Twenty-six, (52%), of the questionnaires were totally or partially completed. Seventeen (49%) of the 35 English questionnaires given were returned while nine (60%) of the 15 Spanish questionnaires were returned. Two mothers were unable to read English or Spanish. To aid parents in filling out the questionnaires intensive follow-up by telephone call and personal visit was attempted. Parents found the questionnaires long and time consuming to fill out. In addition, many parents did not like to give information related to income. Those who plan nutrition and health education programs should be cognizant of the large number of Mexican American women (one-third in this study) who do not read English. Some Mexican Americans cannot read either English or Spanish.

Clinical evaluation and medical problems

Physical examinations and medical histories were completed for 21 children representing 12 families. Table I indicates the extent of the problems found. Twelve (57%) of 21 children examined exhibited 1 or more problems. Seven children with problems were in the pre-Head Start group and 5 were in Head Start. As a result of the examinations 4 of the pre-Head Start children and 2 of the Head Start children received medical care. Two of these children exhibited problems of such a nature as to be considered emergencies. A summary of the medical problems encountered is presented in Table II.

Blood and urine specimens collected

Blood and urine specimens were collected on 18 of the 21 children

given physical examinations. Parents of the other 3 children objected to the drawing of blood. Laboratory analyses of these fluids will be reported when completed.

DESCRIPTION OF FAMILIES

Birthplace of parents

As indicated in Table III, 12 of the mothers (46%) and 9 of the fathers (35%) were born in the United States. Of the mothers born in the United States, 9 (35%) were born in California, while 7 (27%) of the 9 were born in Los Angeles County. Six (23%) of the fathers were born in California with 3 (11%) born in Los Angeles County. Eight (31%) of the mothers and 9 (35%) of the fathers were born in Mexico.

Length of time in Los Angeles County

Parents were asked how long they had lived in Los Angeles County. Five families did not respond to this question. The mean length of stay was 12.5 years, the median 7 years and the mode was 4 years. Five families had lived in Los Angeles County 25 years or more, 5 other families from 10 to 25 years, while the remaining 11 families had lived in the area from 1 to 7 years.

Birthplace of children

Table IV indicates that 15 (58%) of the Head Start children were born in the United States while 5 (19%) were born in Mexico. One Head Start child was born in Puerto Rico of Puerto Rican parents. Sixteen (62%) of the pre-Head Start children were born in the United States while 4 (15%) of this group were born in Mexico and one child in Puerto Rico.

Number of people living in home

Six families did not respond to this question. However, in 20 families the mean was 5.8 individuals total with a median and mode of 6 (range 3 to 13). In contrast, the average family size in the United States in 1968 was 3.7 (11). Adults in the home averaged 1.9 with a median and mode of 2. Children (individuals less than 18 years of age) averaged 3.9 per home with a mean and mode of 4 (range 2 to 11). The ages of only 9 males over 18 years were given. The mean age was 31 years, the median 32 years and the mode 35 years (range 24 to 35 years). Ages of 10 females over 18 years were listed. The mean and median age of this group was 26 years, while the mode was 28 years (range 19 to 32 years).

Ages of children born to mothers

Twenty-five mothers responded to this question giving birth dates for 88 of 91 children. The age range of these children was from 1 to 7 years; mean age 5.5 years; median and mode 5 years.

Father in home

In 17 (65%) of the homes the father was living in the home, while 4 families (15%) responded that the father was not in the home. Sixteen of the 17 fathers living at home were employed - primarily as laborers and factory workers.

Total family income

Table V shows the weekly family incomes. The mean weekly income per person per week was $13, the median and mode per person per week were $12 and the range was $8 to $22 per person per week. On a yearly per capita basis, 4 families (15%) had a per capita income less than $500 per year, 15 families (58%) had per capita incomes of $500 to $1000 per year and only 1 family (3%)

had a per capita income greater than $1000 per year (Table VI).

Members in home employed

Five families (19%) did not respond to this question, while in 5 other families (19%) no one was employed. The unemployment rate in Los Angeles County at the time of this survey was 4.2 per 1000 (12). One person was employed in 14 families (54%) 1 1/2 in 1 family (3%) and 2 persons in one family (3%). Five families (19%) were receiving Welfare and 3 families (12%) were receiving Aid to Families with Dependent Children.

PREGNANCY HISTORY OF MOTHERS

Health for five years prior to pregnancies

Twenty-five of the 26 women responded to this question. Eight (31%) stated they had been in excellent health, 14 (54%) had been in good health and 3 (12%) stated they had been in poor health for the 5 years prior to bearing children.

Work outside home during pregnancy

Only 3 (12%) of the mothers worked outside the home during pregnancy. One of these 3 mothers had help with work at home during this time.

Food restrictions

Only 4 (15%) of the women indicated that there were specific foods a pregnant woman should not eat. These foods were: hot sauce, meat, "greens", salt, fatty foods, oil and margarine. Thirteen (50%) of the women followed food restrictions during religious observations. Meat was the one food restricted during these periods.

Medical care during pregnancy

Twenty-five (96%) of the 26 mothers indicated that they received medical

care during pregnancy. Only 1 individual (4%) had no prenatal care. The month that medical care began ranged from 1 to 7 with a mean of 3.2 months. Both the median and mode were 3 months.

Eight per cent of the women had received medical care by the end of the first month of pregnancy, 19% by the end of 2 months, 58% by the end of 3 months and 77% by the end of 4 months. (Table VII). These figures are very similar to those found in a study done in the Westchester County Department of Health, White Plains, New York, where 3% of the women had no prenatal care and 24% had prenatal care beginning after the fourth month of pregnancy (13).

Medical problems during pregnancy

One mother did not respond to this question while 2 (8%) mothers indicated they had no problems, 7 women (27%) had 3 problems and 5 (19%) women had 2 problems. The number and kinds of problems exhibited are indicated in Table VIII. Vomiting, edema, and large weight gain were the most common complaints. Table IX indicates that those women with the greatest number of medical problems sought medical care earlier than those with fewer problems.

Vitamin and mineral preparations taken during pregnancy

Twenty-one (81%) of the mothers took vitamin or mineral preparations during pregnancy. Seven (27%) did not indicate specifically which preparation was taken while 10 (38%) took vitamins, 5 (19%) took iron, 3 (12%) took vitamins and iron and 1 took calcium and iron. The month of pregnancy at which these preparations were started ranged from 2 to 7, with a mean of 3.6 and a median and mode of 3 months.

Live born children

Twenty-five of the 26 mothers responded to this question. The range in number of live born children was 2 to 6; the mean 3.6; the median 3.5; the mode was 3 and 4.

Abortions, stillborn and premature children

Nine mothers (35%) indicated they had had abortions, stillborn or premature children. One mother had had an abortion and a stillborn child while another had two abortions. There were 7 abortions, 2 stillborn and 2 premature infants that died shortly after birth. This would give a fetal mortality rate of 99 per one thousand live births (9%) in this population as compared to the overall United States statistic of 14.3 per one thousand white live births and 26.8 per one thousand non-white live births (14). However, a more recent study (15) in Greater New York indicated that 15% of pregnancies terminated in fetal death. The 2 premature births give a rate that is lower than usual premature rates of 7.4 per one hundred live births in the white and 9.6 per one hundred live births in the non-white population (10). Three (33%) of these 9 mothers stated they had been in excellent health, 5 (56%) in good health and 1 (11%) in poor health for the 5 years preceding their pregnancies. Of the 9 mothers who lost a fetus, 1 had no medical problems, 4 had 1 problem, 1 had 2 problems and 3 had 3 or more medical problems during pregnancy. The nubmer of live born children for these 9 women did not differ greatly from that of the total group. The range was 2 to 6; mean 3.9; median 3.5 and mode 3.

SUMMARY

Twenty-six Mexican American families of Metropolitan East Los Angeles with children in Head Start responded to a questionnaire in English or Spanish gathering data on birthplace, family income, individuals in the home, dietary intake and habits of the children, food buying and preparation

practices, and the pregnancy history of the mothers. Problems encountered were: lack of support from local Head Start administration, illiteracy in English and Spanish and the distrustful attitude of the people towards the professional personnel.

Fifty-one per cent of the questionnaires were completed and returned. Thirty-six per cent of the returned questionnaires were in Spanish. Physical examinations and medical histories were completed in forty per cent of the study children representing 12 families. Twelve of the children examined exhibited 1 or more medical problems. Blood and urine specimens were collected for 18 of the 21 children given physical examinations.

Forty-six per cent of the mothers and thirty-five per cent of the fathers were born in the United States while fifty-eight per cent of the Head Start and sixty-two per cent of the pre-Head Start children were born in the United States.

Mean family size was 5.8 individuals with a median and mode of 6 and a range of 3 to 13. Age range for 88 of 91 children born to 25 mothers was 1 to 7 years with a mean age of 5.5 years and a median and mode of 5 years. The father was living in 65% of the homes and 16 were employed.

The mean weekly income per person per week was $13; the median and mode were $12 while the range was from $8 to $22. The per capita income for members in 4 families (15%) was less than $500 per year, in 15 families (58%) $500 to $1000 per year, while members in only 1 family had a per capita income greater than $1000 per year.

Nineteen per cent of the fathers were unemployed. In the majority of families only 1 individual was employed, usually as a laborer or factory worker.

Eighty-five per cent of the mothers had been in excellent or good health for 5 years prior to their pregnancies. Only 12% of the mothers had worked outside the home during pregnancy.

Twenty-five of the 26 women received medical care during pregnancy beginning during the third month. Only 3 women had no medical problems during pregnancy. Vomiting, edema and a large weight gain were the most frequent problems encountered. Nine of the mothers had had 7 abortions, 2 stillborn and 2 premature infants.

TABLE I

MEXICAN AMERICAN PRE-SCHOOL
CHILDREN EXHIBITING MEDICAL PROBLEMS

	Pre-Head Start	Head Start
	Number	Number
Children Examined	9	12
Children with Medical Problems	7	5
Children Treated	4	2
Children Referred	3	--
Emergency Cases	2	--

TABLE II

SUMMARY OF MEDICAL PROBLEMS ENCOUNTERED IN
12 MEXICAN AMERICAN (PRE-SCHOOL) CHILDREN

Pre-Head Start		Head Start	
	Number		Number
Pneumonia	1	Severe Dental Caries	3
Possible Congenital Syphilis	1	No Immunizations	1
Possible Mental Retardation	2	Functional Heart Murmur	1
Speech Defect (Possible Aphasia)	1*	Tonsillitis & Pharyngitis	1
No Immunizations	1	Ulcer of Sublingual Glands	1
Otitis Media	1		
Sebacious Cyst	1		
Bronchitis	1		

*One of children with possible mental retardation.

TABLE III

BIRTHPLACE OF MEXICAN AMERICAN PARENTS

Place	Mother		Father	
	Number	%	Number	%
United States	12	46	9	35
California	9	35	6	23
Los Angeles County	7	27	3	11
Mexico	8	31	9	35
Other	1	4	3	11
No Answer	5	19	5	19
Total	26		26	

TABLE IV

BIRTHPLACE OF MEXICAN AMERICAN PRE-SCHOOL CHILDREN

Place	Head Start Child		Pre-Head Start Child	
	Number	%	Number	%
United States	15	58	16	62
Mexico	5	19	4	15
Other	1	4	1	4
No Answer	5	19	5	19
Total	26		26	

TABLE V

WEEKLY INCOME OF MEXICAN AMERICAN FAMILIES

Income/Week	Number of Families	Per Cent
No Answer	5	19
$ 25 - 50	2	8
50 - 75	6	23
75 - 100	9	35
100 - 125	3	12
> 150	1	3

TABLE VI

YEARLY PER CAPITA INCOME OF MEXICAN AMERICANS STUDIED

Yearly Per Capita Income	Number of Families	Per Cent of Families
No Answer	6	24
< $ 500	4	15
500 - 1000	15	58
> 1000	1	3

TABLE VII

MONTH OF PREGNANCY MEDICAL CARE BEGAN
FOR MEXICAN AMERICAN MOTHERS

Month of Pregnancy	Month Medical Care Began	
	Number of Subjects	Cumulative %
1	2	8
2	3	19
3	10	58
4	5	77
5	1	81
6	1	85
7	3	96

TABLE VIII

MEDICAL PROBLEMS EXHIBITED BY
MEXICAN AMERICAN MOTHERS DURING PREGNANCY

Number of Problems	Number of Subjects	%
No Answer	1	4
None	2	8
1	10	38
2	5	19
3	7	27
4	1	4
Total	26	

Problem*	Number of Subjects	%
Vomiting	14	54
Swollen feet	11	42
Large weight gain	11	42
Other	8	31
Heartburn - 4		
Weak uterus - 3		
Toxemia - 2		
Varicose veins - 2		
Difficult respiration - 1		

*Terminology of respondents.

TABLE IX

NUMBER OF MEDICAL PROBLEMS ENCOUNTERED BY
MEXICAN AMERICAN MOTHERS DURING PREGNANCY
COMPARED TO MONTH OF BEGINNING PRENATAL CARE

Problems	Number of Women	Month Medical Care Began	
		Mean	Range
None	2	4.5	2-7
1	10	3.8	1-7
2	5	3.6	1-7
3	7	3.1	2-5
4	1	3.0	3

REFERENCES

1. Citizens' Board of Inquiry into Hunger and Malnutrition in the United States. Hunger U.S.A. Boston: Beacon Press, Pp. 96, 1968.

2. Hearings Before the Select Committee on Nutrition and Human Needs of the United States Senate. Nineteenth Congress. Nutrition and Human Needs. Parts 1 and 2. Washington, D.C.: U.S. Government Printing Office, 1969.

3. Schaefer, A.E., O.C. Johnson. "Are We Well Fed? . . . The Search For The Answer," Nutrition Today, Spring:2-11, 1969.

4. Owen, G.M., K.M. Kram. "Nutritional Status of Pre-school Children in Mississippi," J. Amer. Diet. Assn., 54:490-494, 1969.

5. Cravioto, J., E.R. DeLicardie, H.G. Birch. "Nutrition, Growth, and Neurointegrative Development: An Experimental and Ecologic Study," Pediatrics (Suppl.), 38:319-372, 1966.

6. Stoch, M.B., P.M Smythe. "The Effect of Undernutrition During Infancy on Subsequent Brain Growth and Intellectual Development," South African Med. J., 41:1027-1030, 1967.

7. Liang, P.H., T.T. Hie, O.H. Jan, L.T. Giok. "Evaluation of Mental Development in Relation to Early Malnutrition," Amer. J. Clin. Nutr., 20:1290-1294, 1967.

8. Dayton, D.H. "Early Malnutrition and Human Development," Children, 16:210-217, 1969.

9. Winick, M., P. Rosso. "Effects of Severe Early Malnutrition on Cellular Growth of Human Brain," Pediat. Res., 3:181-184, 1969.

10. President's Committee on Mental Retardation. Mr. 68: The Edge of Change. Washington, D.C.: U.S. Government Printing Office, 1968.

11. Don Golenpaul Associates (Editors). Information Please Almanac. New York: Don Golenpaul Associates. 1970, P. 642.

12. Personal Communication. Los Angeles County Office of Employment, 1969.

13. Fox, R.I., J.J. Goldman, W.A. Brumfield. "Determining the Target Population for Prenatal and Postnatal Care," Public Health Reports, 83:249-257, 1968.

14. Wallace, H.M. Health Services for Mothers and Children. Philadelphia: W.B. Saunders Company, 1962, Pp. 466.

15. Shapiro, S., M. Abramowicz. "Pregnancy Outcome Correlates Identified Through Medical Record Based Information," Amer. J. Public Health, 59:1629-1650, 1969.