A NEEDS ASSESSMENT:
THE HEALTH STATUS OF MIGRANT CHILDREN
AS THEY ENTER KINDERGARTEN

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ABSTRACT

A NEEDS ASSESSMENT: THE HEALTH STATUS OF MIGRANT CHILDREN AS THEY ENTER KINDERGARTEN

by Mary Ellen Good

This thesis identifies the health needs of migrant children as they enter kindergarten. Using a descriptive study design, data were collected regarding abnormal findings of health examinations provided by the State of California's Child Health and Disability Prevention program to a sample of migrant children (N=112) as they registered for school entry for the Fall of 1990. Data were collected on children enrolled in the Migrant Education Program of a school district located in Northern California.

The data indicate that the major abnormalities identified by the health examinations were dental problems, overweight, lack of immunizations, and anemia. Less frequently identified abnormalities were vision and hearing defecits. Review of the data suggest recommendations for programs aimed at improving the health status of migrant children so that they may achieve academic success. Implications for school nursing practice are also discussed.

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Chapter 1

INTRODUCTION

Migrant children are among the most vulnerable in America's classrooms. They live in a world of poverty, mobility, and cultural alienation where low expectations become self-fulfilling prophecies (Harrington, 1987). The comprehensive Charles Stewart Mott Foundation's study of America's 12 million youth at risk stated unequivocally that there are proportionately more at risk youth among migrants than any other identifiable group (Lincoln & Smith, 1988). The disadvantages of poverty, constant mobility, poor health, and limited English language skills create barriers for migrant children; they are twice as likely to become high school dropouts as their non-migrant counterparts.

The majority of migrant parents lack political and social power; without intervention they face a lifetime of low pay, frequent unemployment, and little hope for change. Their children are destined to an equally hopeless and uncertain life unless the chain is broken; education is the key that can set migrant children free.

The negative consequences of poverty and a mobile lifestyle are demonstrated in the poor health status of the migrant population (Wilk, 1986). Poverty emerges as a central theme in understanding the incidence of health

harming conditions for migrant children; poor nutrition, crowded living conditions, higher than normal exposure to infectious diseases, and unsanitary environments are common. There is more substance abuse, unemployment, and other persistent stress seen in families living in poverty (Policy Analysis for California Education [PACE], 1989). The combination of these factors seriously limits the capacity of migrant families to support the healthy development of their children. Poverty, the dislocations of migration, and other cultural issues contribute to undermining the support and nurturing essential for a healthy childhood (PACE, 1989).

Good physical, mental, and social well-being is a necessary prerequisite for students to achieve their greatest potential in healthful living (California State Department of Education, 1984). It is an accepted fact that healthy children learn better than those in a poor state of health. Children who are free from disease, parasites, pain, and hunger will certainly attain a better education than those inflicted with these conditions. Numerous barriers restrict migrant children from obtaining health services which could improve their chances for academic success. Poverty, fear of deportation, discrimination, language difficulties, and lack of insurance coverage have

been identified as access barriers to the health care system (Marin, Marin, & Padilla, 1982). Because of frequent moves to seek employment, health care for migrant families is often fragmented at best.

The relationship between academic performance and health status was documented in a study by the University of Colorado Health Sciences Center School of Nursing (Morgan, 1987). The sample included 318 sixth grade students from urban, suburban, rural, and military communities in Colorado. Eighteen percent of the students in the study represented ethnic minority groups. Findings showed that students with academic problems scored poorly on achievement tests, exhibited classroom adjustment problems, and had more health problems than their peers. The findings suggest that a student's health status is an important factor in learning, the development of classroom behaviors that enhance learning, and the development of good social relationships with peers. Conclusions were that students who were in good health were better able to maintain good peer relationships and maximize learning than those in poor health.

Migrant children are disadvantaged in terms of access to high-quality health services that could prevent, diagnose, and treat their health problems. A recent study

by the Flinn Foundation (1989) addressed the prevalence of major health problems of school-age children in Arizona and the barriers they face in obtaining health care. The ethnic distribution of the study included children who were White (64%), Hispanic (24%), Black (3%), and American Indian (5%). Results showed that children without health insurance were in poorer health and had more untreated health problems than those with health insurance. Untreated health problems can negatively impact physical well-being and academic performance, and may become more serious with time. The study also correlated visits to the school nurse with standardized test scores and found that students with frequent visits to the school nurse had the lowest test scores. These findings reinforce the need for further research to document the relationship between health status and learning potential.

The Problem and Research Question

There is limited documentation in the literature specifically addressing the health status of migrant children as they enter school. Children are not labeled as being "migrant" when they have health examinations as most agencies do not have the time or funding to do an aggregate analysis of their clients. It is difficult to obtain health records from providers of care since these documents are

highly confidential. A system which identified children as being migrant and linked them to their health records would provide a valuable means of studying the health status of this population.

The Migrant Education Program was established in 1964 as part of the Federal Elementary and Secondary Education Act (Public Law 95-561) to provide supplemental instructional and health and welfare services for migrant students. Under the California Master Plan for Migrant Education of 1976, the State Department of Education is the prime contractor to the federal government for this program. The Master Plan states that migrant children must receive diagnosis and treatment of any health problems that interfere with their education (California State Department of Education, 1984).

Migrant Education health programs have evolved since 1976 to address individual student's needs. Valid data describing the health needs of migrant students by specific age groups are lacking. Currently, the Migrant Education Program has identified children 3 to 5 years of age as a priority group for service, even though the health needs of this group are unknown, and there is no clear definition of how to "serve" them. The purpose of this study was to answer the research question: What are the health needs of

migrant children as they enter the school system in kindergarten? The findings will provide needed data on this specific age group to allow for programs to be planned to improve both the health status and educational experience of this targeted group as mandated by the State's Migrant Education Program.

Statistical data for the Migrant Education Program are managed nationally by the Migrant Student Record Transfer System (MSRTS) located in Little Rock, Arkansas. The estimate of the total number of children (0-21 years of age) in the United States enrolled in the Migrant Education Program during 1989 is 620,432 (Migrant Student Record Transfer System, 1990). Roughly one-third of the nation's migrant children, or 194,504, lived in California. This study examined the health needs of kindergarten-eligible migrant children from a school district located in Northern California that enrolled 7,100 migrant students in 1989.

Since 1976, California law has stated that children should receive a comprehensive health examination within 18 months prior to December of the first grade to detect problems which may interfere with learning (State Department of Health Services, 1976). Early identification of health problems is important because, if undetected, they can hamper a child's progress in school. To satisfy the State's

requirement, children often complete their health examinations when they register for kindergarten. Low-income children may qualify for free health examinations through the State's Child Health and Disability Prevention (CHDP) program. Many migrant children choose to receive CHDP examinations when they register for kindergarten. The results of these examinations contain valuable health data. This study identified children in the Migrant Education Program who received CHDP health examinations at kindergarten registration and described their health needs as they enter the school system.

Purpose and Significance

In order to plan appropriate and cost effective health programs, a needs assessment to identify health problems of a population is necessary. Early identification and correction of health problems which negatively affect education are essential to assure that migrant children succeed in school. If children enter school in a state of good health, their chances of staying in school and reaping the maximum benefits of education are improved. The purpose of this study was to identify the health needs of migrant children as they enter kindergarten so that programs can be planned to improve their health and educational experience.

Definition of Terms

For the purpose of this study, the following definitions apply:

1. Care refers to phenomena related to assisting, supportive, or enabling behavior toward or for another individual (or group) with evident or anticipated needs to ameliorate or improve a human condition or lifeway (Leininger, 1988a).

2. Child Health and Disability Prevention (CHDP) Examination is a free, comprehensive health assessment offered by the State of California to children between 0-21 years of age who meet the State's current definition of low-income status. Findings from the CHDP examination were recorded on the PM 160 form (Appendix A) which was the data collection instrument for this study.

3. Dental assessment is a visual inspection of the mouth and teeth to detect abnormalities such as tooth decay and infected gums.

4. Growth chart is a tool that identifies children who may be at risk for overweight, underweight, or delayed growth. Growth charts use "curves" to show how a child's height and weight compare with a sample of 100 children of the same sex and age in the United States. Height or weight measurements below the 5th percentile, or above the 95th

percentile, are considered abnormal. Those falling between these two percentiles are normal. The growth charts used in the CHDP examinations were developed by the National Center for Health Statistics (Appendix B); research has shown that they are appropriate growth standards for preadolescent Mexican-American children (Martorell, Mendoza, & Castillo, 1989).

5. Hearing screening is a measure of the child's ability to hear using the State's standards for pure tone audiometric testing. Abnormal results indicate that the child did not respond as having heard the tone at any one of the four frequencies used in the screening: 1000, 2000, 3000, and 4000 Hertz at 25 decibels. Normally, a child should hear the tone at each of the four frequencies.

6. Height is a measure of stature to determine if growth is appropriate for the child's age and sex. Findings are recorded to the nearest 1/8 inch (1 mm) on a growth chart using age and sex-specific percentiles. Measurements below the 5th percentile, or above the 95th percentile, are recorded as abnormal (under height or over height). Those falling between these two percentiles are considered normal for age and sex (Appendix B).

7. Hemoglobin/Hematocrit are blood tests to screen for iron deficiency anemia, a disease characterized by a low

level of iron in the blood. Hemoglobin concentrations below 12 gm/100 dl, or hematocrit values less than 34%, are considered abnormally low. These levels were established by the medical staff of the clinic that provided the CHDP health examinations.

8. Immunization status is an evaluation of immunizations a child has received to date. Immunizations addressed in this study were: polio, DPT (diphtheria, pertussis, and tetanus), and MMR (measles, mumps and rubella). At kindergarten registration, children normally receive a DPT and polio booster since it is recommended to be given between 4 and 6 years of age. The MMR vaccine is recommended to be given at age 15 months; all kindergarten-eligible children should have previously received it.

9. Kindergarten-eligible is a child who registered to start kindergarten in the Fall of 1990. The sample included children who were 5 and 6-years-old, and 4-year-olds that will reach their fifth birthday by December 2, 1990.

10. Kindergarten registration is the process of completing a series of eligibility requirements to enter kindergarten in the school district where the study was conducted. This included verifying the birth date, completing paper work, documenting adequate immunization status, screening for eligibility for the Migrant Education

Program, and receiving a CHDP health examination.

11. Lifeway refers to a particular patterned way, style, or manner of living by individuals, groups, or cultures (M. Leininger, personal communication, September 2, 1990).

12. Migrant child is a child who has moved across school district boundaries with his/her parents or guardians within the last six years. The move had to be for the purpose of seeking work in agriculture or fishing (State of California, 1984).

13. PM 160 Form is the instrument used to collect data in this study. It was developed by the State of California's Child Health and Disability Prevention (CHDP) program as a screening device. Findings from CHDP health examinations are recorded on this form (Appendix A).

14. Vision screening is a measure of the child's visual acuity using the standard "E" chart (Snellen). A measurement of 2/50 or poorer in at least one eye is reported as abnormal.

15. Weight is a measurement taken on a floor model beam scale and is recorded to the nearest quarter pound (100 gms). Children are weighed in their underclothing and without shoes. Measurements are plotted on a growth chart using percentiles based on the child's age and sex.

Measurements falling below the 5th percentile, or above the 95th percentile, are abnormal (underweight or overweight). Measurements falling between the 5th and 95th percentiles are considered normal for age and sex (Appendix B).

Research Design

A descriptive design was used to identify the health needs of migrant children as they enter kindergarten. A convenience sample of 112 migrant children whose parent or guardian consented to participate in the study provided the most readily accessible number of participants. The variables of interest were the results of CHDP health examinations from the following seven categories: dental, vision, hearing, hemoglobin/hematocrit, height, weight, and immunizations.

Scope and Limitations

The scope of this study included 112 children between 4 and 6 years of age who received a CHDP health examination at kindergarten registration. All children were enrolled in the Migrant Education Program of a school district that encompasses three counties of Northern California. The sample included children living in a migrant labor camp, as well as rural and urban areas.

One of the limitations of the study is the convenience method of sample selection which may skew external validity

of the findings. The small sample size (N=112) limits generalizing the findings to migrant children of the school district where the study was conducted.

Two physician's assistants completed the examinations, which creates the possibility of inconsistency in health assessments and recording of health findings. Results would be more reliable if the same provider had completed all of the health examinations. The procedures for completing and recording the findings of a CHDP examination is standardized by the State of California, thus the likelihood of inconsistencies in these procedures is minimized.

Children in the Migrant Education Program living in the area who did not attend kindergarten registration were not included in the study. It was estimated that 336 migrant children would enter kindergarten in the Fall of 1990; one-third (112) of them were included in this study. The remaining children received health examinations from places other than kindergarten registration sites, or had not yet completed this requirement. Those children were not included in the study because of time constraints, expenses, and the difficult process of obtaining copies of health examination records from other health care providers. The CHDP health examination records are highly confidential and are protected by the provider, the County, and the State.

Chapter 2

CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

Conceptual Framework

The conceptual framework for this study was based on Leininger's transcultural care theory related to the health needs of migrant children as they enter kindergarten. Her theory is complex, global in scope, and has evolved over three decades. It is a comprehensive and holistic theory in that it addresses social structure, world view, values, environment, language, and folk-professional systems.

Leininger's theory developed from clinical experiences recognizing that culture was the missing link in nursing knowledge and practice (Leininger, 1988a). Her concept of culture was derived from doctoral work in anthropology; her concept of care was derived from nursing. Leininger's early work stemmed from observations of children from diverse cultural backgrounds. Her theory of cultural care diversity and universality evolved from the identification of cultural differences in children. The theory has its roots in social science, but has developed in a way that is unique to nursing.

Leininger holds that care is the essence of nursing, its central, dominant, and unifying feature (Leininger, 1988a). She believes the goal of health care providers

should be to work toward an understanding of care and health of different cultures so that each culture's care, values, beliefs, and lifeways will provide a basis for planning and effectively implementing culture-specific care. She defines lifeway as a particular patterned way, style, or manner of living by individuals, groups, or cultures (M. Leininger, personal communication, September 2, 1990). She holds that care is the human service quality that makes health consumers either satisfied or unsatisfied with health services; it is the care, not the cure, that they consciously or unconsciously value (Leininger, 1984, p. 8).

Leininger's theory of nursing focuses on the concept of culture congruent care (Leininger, 1988a). The assumptions, definitions, and theoretical explanations are presented in her sunrise model which illustrates the major components of the theory (Figure 1). The sunrise model shows how three dominant modes guide nursing decisions and action to provide culture congruent care. The modes are:

1. Cultural care maintenance or preservation
2. Cultural care accommodation or negotiation
3. Cultural care restructuring and repatterning

Using this model, nurses make decisions and take action which will be congruent with the lifeways of individuals, families, or groups, as a basis to support the theory's

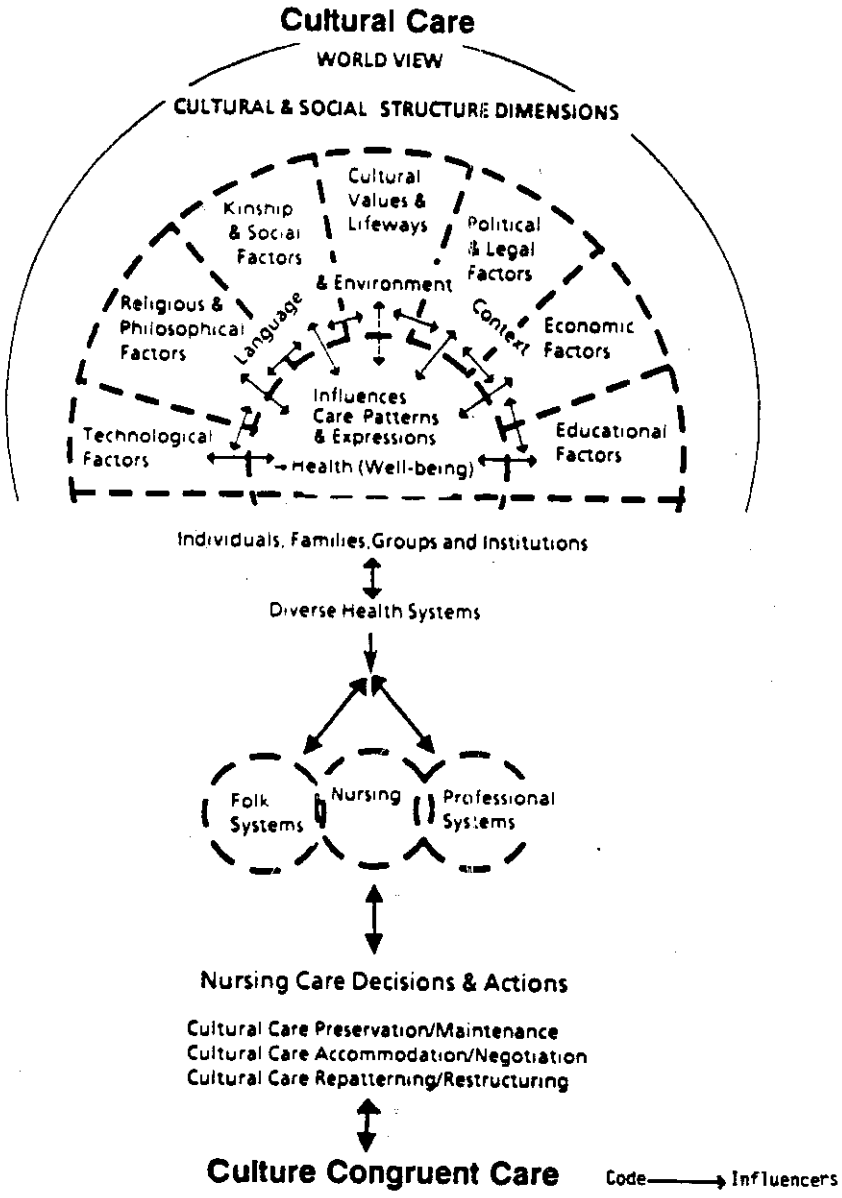


Figure 1. Leininger's Sunrise Model

Note: From "Leininger's theory of nursing: Cultural care diversity and universality" by Madeleine Leininger, 1988, Nursing Science Quarterly, 1, 4, p. 157. Copyright 1980 by Williams and Wilkins. Reprinted by permission.

goal of providing quality care to clients of diverse cultures that is meaningful, satisfying, and beneficial to them (Leininger, 1988a).

Leininger views people as caring beings whose lifeways are largely determined by cultural values, beliefs, and practices. To date, she has identified 80 cultural care constructs which vary in expression, meaning, and use among different cultures (Leininger, 1988b). Utilizing her theory, nurses identify and prioritize those constructs most appropriate for the specific culture to whom they provide care in order to predict nursing care actions. Examples of constructs applicable to providing care to migrant families are support, sharing, touch, respect, comfort, and trust.

Leininger (1978) proposed that professional people working in strange cultures with different values can create cultural conflicts unless they are willing to recognize and adapt to indigenous caring values and expectations. This postulate is particularly useful for school nurses working with migrant families whose health care values, beliefs, and needs are culturally unique. If school nurses are to be effective in improving the health status of migrant children, an understanding of the "migrant culture" is essential. Leininger's transcultural care model provides school nurses a framework for understanding cultural care.

Literature Review

The literature review will begin with a description of California's changing demographics and the impact on the education of migrant children. A review of studies on the lifeways and overall health status of migrant children will precede a review of studies on their specific health needs. A summary of the literature review concludes this chapter.

Demographics

From 1980 to 1988, the Hispanic population in the U.S. increased by 34%, or about 5 million persons. In 1988, the Hispanic population totaled 19.4 million which included 12.1 million Mexican-Americans (U.S. Bureau of the Census, 1989). Over one-third of the nation's Hispanics live in the state of California.

The growth of the Hispanic population in California is a result of two factors: high fertility and immigration. Hispanics comprise a major segment of California's future demographics. In their book The Burden of Support (1988) Hayes-Bautista, Schink, and Chapa prefer the term "Latino" when describing people of Mexican, Caribbean, and Central and South American origin or ancestry. In California, the social, economic, and demographic characteristics of these groups are similar, so the authors feel that "Latino" is a more culture-specific term than "Hispanic." Their model

predicts a slow, steady growth in California's Latino population; they claim that Latinos will constitute 35.5% of the State's population by the year 2030. The authors claim that the key element in California's Latino population growth is immigration from Mexico. Factors such as political and economic instability in Mexico and Central America could greatly increase the projection as a result of increased immigration.

The model presented by Hayes-Bautista, Schink, and Chapa predicts that larger proportions of the Latino population will be school-age children. Most of California's migrant children are Mexican, or of Mexican descent; it is reasonable to expect the number of migrant students in California's classrooms to continue to grow.

Lifeways and overall health status

It is difficult to generalize about the lifeways or health status of migrant children across the nation as regional differences warrant individual consideration. Migrant families from Puerto Rico working in New York State might have more cultural diversity than similarities when compared to Mexican migrant families in California. Even though these two groups are considered Hispanic (or Latino), differences in their cultures and lifeways can be diverse.

Obtaining valid health statistics on migrant children is difficult to achieve. Available data are inadequate to delineate specifics on the incidence and prevalence of diseases. Describing the magnitude of their problems in epidemiologic terms is difficult because of two factors: (a) defining exactly who they are, and (b) counting them. Subsequently, the difficulties of quantifying their health status with any precision are compounded.

Migrant children suffer the same illnesses common to all children but to a much greater degree. Poverty, limited education, and language difficulties interfere with utilization of both preventative health care (immunizations, vision and hearing screening, growth and developmental assessments) as well as health care for acute/chronic conditions (Marin, Marin, & Padilla, 1982). Consequently, many preventable illnesses occur, with dental disease being the most prevalent. Undetected conditions often progress to a state of irreversible damage. Crowded living spaces and poor sanitation allow the spread of communicable diseases ranging from common colds to active tuberculosis.

Few studies address the health status of migrant preschool children; none were found that specifically studied the health status of migrant children at time of entry into kindergarten. Limited empirical studies have

addressed the incidence of migrant student's health problems identified by school health personnel. A random study conducted in New York (Michael & Salend, 1985) examined 1000 migrant student's health records (newborns to 18 years of age) to identify health problems which have a direct bearing on academic potential and performance. They found that 22% of the students had physical conditions, 11% had visual problems, 10% had dental needs, 8% had auditory problems, 6% were lacking immunizations, and 6% had nutrition problems.

The Colorado State Migrant Education Program (1988) provided health screening to 1,690 migrant students and found that: Eight percent had vision abnormalities compared to 6% in all school children in the state. Seven percent had abnormal hearing which was more than double the incidence of 3% observed for all Colorado school children that year. Nine percent were found to be above the 95th percentile of weight-for-height, a figure 80% greater than the general population. Sixty percent had abnormal dental screening results which included caries, gingival/perio disease, and oral trauma. Dental problems were the most prevalent of all health problems identified.

Graham (1986) evaluated 538 health examination records of migrant children 9 through 17 years of age residing in Northern California and also found that dental problems

accounted for the majority of health needs of the population. Thirty four percent of the students in her study had serious dental needs as compared to only 21% needing medical attention for all other health problems.

Guendelman (1985) studied the utilization of health services by undocumented migrant children in California. Data were collected in Mexico to obtain a representative sample and to protect confidentiality. Results showed that the most common reason a migrant child contacted a U.S. physician was for respiratory ailments; dental caries was the primary reason for seeking dental care. Wilk (1986) also found that respiratory infections were the principal reason that children between 1 and 14 years of age sought medical attention, followed by ear infections and intestinal diseases.

Migrant children work and play in the fields exposing them to hazards such as pesticides, dangerous equipment, and extremes of natural elements. Injuries are common for children working beside their parents in the fields and for their younger siblings left at home unsupervised. Rivara (1985) found that almost 300 children and adolescents die annually from farm accidents, and that 23,500 suffer non-fatal trauma. He found that the fatality rate increases with age; the rate for 15 through 19-year-old boys is double

that of younger children, and 26-fold higher than for girls. The most common cause of injury was farm machinery; tractors accounted for one half of machinery-related deaths.

Not only is there loss of life and health when children work in the fields, but the loss of education is also a high price to pay. Migrant children who leave school to help their families survive often drop out (Pollack, Landrigan, & Mallino, 1990). One of the principal dangers of child labor is decreased school performance. Employed children have inadequate time for study, and the increased fatigue from heavy physical labor drains their academic potential.

The stressful lifeways of migrant families places them at risk for a variety of mental health problems. A study published in the Migrant Health Newsline (1988) found that the effects of stress on the mental health of migrant farmworkers is the greatest of any occupation. Child maltreatment occurs in all segments of society; stress associated with socioeconomic factors is a major determinant of its incidence. A study conducted by Alvarez, Doris, and Larson (1989) cross tabulated migrant student records with the New York State Central Register for Child Abuse and found an incidence rate of child abuse 6 times greater than the rate for other children in that state. Results support the hypothesis of a higher incidence of child abuse and

neglect among migrant families than in the general population, suggesting that lifeways may place children at higher risk for being abused.

Specific health needs:

Nutrition

Several nutrition-related conditions are consistently mentioned as evident in the migrant population. These include poor housing and cooking facilities, lack of prenatal care, inadequate financial resources for purchase of nutritious foods, and over consumption of convenience foods while working (National Migrant Resource Program, 1990). The most frequently diagnosed disorders in migrant health centers are all directly and adversely influenced by poor nutrition. The health consequences of inadequate nutrition can be devastating, including anemia, stunted growth, increased vulnerability to infection, and poor cognitive development (Policy Analysis for California Education, 1989). Malnutrition refers to both over nutrition and under nutrition. Over nutrition can cause obesity and predispose people to diabetes and heart disease. Under nutrition increases vulnerability to infection such as dysentery, hepatitis B, typhoid fever, and other intestinal and respiratory ailments (Goldsmith, 1989). Poor sanitation leads to oral-fecal contamination which perpetuates the

disease cycle. Families living in poverty have a higher incidence of poor nutrition than those less impoverished. Migrant families are highly at risk of developing nutrition-related health problems because of poverty and the negative effects of their lifeways.

Anthropometric measurements such as height, weight, skinfold thickness, and head and midarm circumference are frequently used to assess the nutrition status of school-age children. Martorell, Mendoza and Castillo (1989) analyzed data from the Hispanic Health and Nutrition Evaluation Survey (HHANES) of 1982-1984 and found Mexican-American children to be shorter than non-Hispanic White children. Poverty induced growth retardation was evident in the stature of children 2 through 5 years of age, and those 6 through 11 years of age. In regards to weight, they found that Mexican-American children were heavier than their non-Hispanic counterparts in all age groups. The children measured in the HHANES were markedly larger than children of similar ancestry measured two decades ago, and also had a greater weight-for-height value than the average American child has today. Much of the overweight represented increased levels of fatness, particularly in the trunk. Overweight children are of concern because obesity and related chronic diseases are endemic in the Mexican-American

adult population. Overweight was found to be unrelated to poverty, suggesting that perhaps diet, lack of physical activity, or genetics, may predispose them to greater fat deposition. In another study, Martorell (1987) concluded that Mexican-American children are "short and plump" when compared to the general U.S. population.

A study that measured body proportions of the lower extremities and trunk in three ethnic groups (Martorell, Malina, Castillo, Mendoza, & Pawson, 1988) found that shorter legs of Mexican-American youth are, to a large extent, a function of their shorter statures. Although the bulk of the literature points to malnutrition, anemia, and a greater than average number of migrant children below the 5th percentile for weight, this current research sheds new light on the nutritional status of migrant children.

Dental

Total wellness includes good oral health. The condition and functioning of the tissues and structures of the mouth affect a person's general physical appearance, ability to speak and chew, and relations with others. Oral disease creates pain, suffering, financial burden, and loss of days from school. Poor nutrition and sanitation contribute to an increased prevalence of oral disease in migrant families who seldom have insurance or adequate funds

to obtain costly dental care.

Dental disease is the major health problem of all school-age children in the nation; for migrant children the problem is even more severe. Poor and minority children are at high risk of developing dental problems, and their numbers are increasing in California. Statistics collected in Monterey County showed that the incidence of caries in school-age children was highly concentrated in poor and minority-group families (Policy Analysis for California Education, 1989). An evaluation of California's Children's Dental Disease Prevention Program demonstrated that half of the tooth decay in children already occurs by the time they reach kindergarten (Policy Analysis for California Education, 1989).

A study to evaluate dental needs of children in Colorado (Call, Entwistle, & Swanson, 1987) found that dental problems were more prevalent in migrant children than non-migrant children in the Southwest and nationally. Causes were attributed to a lack of early professional treatment, sporadic exposure to fluoride during migration times, dietary patterns, and inadequate oral hygiene.

A Minnesota study (Di Angelis, Katz, Jensen, Pintado, & Johnson, 1981) examined 578 migrant children ages 3 through 13 years, and found a peak of dental decay in children ages

6 through 8 years, the time when their first permanent molars are erupting. Susceptibility of the permanent molars to decay suggests that the use of topical fluorides and application of sealants must occur immediately after eruption if the rapid onset of decay is to be prevented. The inevitable consequence of untreated decay is the loss of permanent teeth for life.

A study by Ismail, Burt, & Brunelle (1987) analyzed findings from the Hispanic Health and Nutrition Examination Survey (HHANES) of 1982-84 for 2,550 Mexican-American children in California, Texas, New Mexico, Colorado, and Arizona. The children were between 5 and 17 years of age. These states represent areas where the vast majority of the nation's migrants live and work. The HHANES data showed that children from low-income families had twice as many decayed teeth than those from high-income families. An unusually high proportion of Mexican-American children had gingivitis (76.9 %).

A study by Ismail and Szpunar (1990) analyzed a cross-section of the HHANES data and found that Mexican-Americans with low acculturation status had significantly more decayed and missing teeth than Mexican-Americans with high acculturation status. The differences were attributed to higher income and education status. Acculturation was

defined by the authors as the process of acquiring the language, customs, and culture of a new society. These findings suggest that migrant children who recently arrived from Mexico are at higher risk for dental decay.

Hearing

Various studies document significant hearing problems in migrant children (Michael & Salend, 1985, Wilk, 1986). Predisposing factors are crowded living conditions, lack of resources for medical treatment, and low socio-economic status. Migrant children may be absent from school when annual hearing screening occurs, so hearing loss may go undetected and subsequently untreated.

Hearing loss has a negative affect on education. If a child is unable to hear the teacher, learning is not optimized. Estimates have indicated that 30-50% of all children experience otitis media (ear infections) in the preschool years (Feagans, 1986). The incidence of otitis media and subsequent hearing loss is a serious concern for those interested in the health and education of children. Hearing loss associated with otitis media may have long-term effects on language and cognitive development, especially since the hearing loss usually occurs during the language formative years.

Pukander, Spila, and Karma, (1984) found an association between socio-economic level and the incidence of otitis media; living in crowded conditions, having a large number of siblings, low income, and being in day-care, places children at greater risk. There is increasing evidence that children with learning and behavioral problems are at much greater risk of having otitis media in early childhood, suggesting a causal relationship (Feagans, 1986).

Vision

Studies suggest that migrant children have a greater than average incidence of vision problems (Michael & Salend, 1985, Colorado State Migrant Education Program, 1988). Often they are undiagnosed due to the child being absent from school during annual vision screening, and go untreated as well, due to lack of resources. There is a dearth of information to explain the cause of the higher than average incidence of vision problems in migrant school-age children.

Immunizations

Immunizations protect children from dangerous diseases and they protect schools and communities from outbreaks of preventable diseases. California mandates documentation of the State's required immunizations for school enrollment, or in lieu of immunizations, a waiver for exemption of this requirement based on personal beliefs may be signed by the

child's parent or legal guardian. The State required immunizations are polio, diphtheria, tetanus, pertussis, measles, mumps, and rubella.

Migrant children often cross school district boundaries, state lines, and country borders where immunization requirements vary. Language, cultural barriers, and lack of access to services place migrant children at great risk for being under immunized (Policy Analysis for California Education, 1989). Other studies show that even though migrant children have poor records of immunizations, they may actually be over immunized due to frequent school changes (Wilk, 1986). Harrington (1987) found that the average migrant student may be in three different schools a year; with so many moves it is very possible that immunization records could get lost or misplaced. Without adequate immunization documentation, migrant children risk being both over and under immunized.

A study of Mexican-American children ages 6 months through 11 years (Gergen, Ezzati, & Russell, 1988) identified four predictors of immunization coverage: use or contact with the health care system, socioeconomic status, area of residence, and family size. Migrant lifeways and the barriers they face in obtaining health care place migrant children at high risk for incomplete immunizations.

Summary

Leininger's concept of care amply applies to providing health services to migrant children. Without culture congruent care, little change in their health status can be expected. Because of their lifeways, migrant parents may be unable to provide their children with the care they need to maintain health and succeed academically.

The literature shows that migrant children are at higher risk than non-migrant children for a number of physical and mental health problems. Finding the ways and means of providing culture congruent care to migrant children that is meaningful, satisfying, and beneficial to them remains a great challenge to both the health and educational systems.

Chapter 3

RESEARCH DESIGN AND METHODOLOGY

Overview of the Study

The California State Department of Health Services strongly advises that children complete a health examination up to 18 months prior to entry into the first grade or within 90 days thereafter. Many children in the Migrant Education Program comply with this recommendation when they register for kindergarten by having the State's Child Health and Disability Prevention (CHDP) examination. The health examination is offered free to children who qualify based on the State's current definition of low-income status. This study reviewed the CHDP examination results of 112 kindergarten-eligible children enrolled in the Migrant Education Program of a school district located in Northern California. Its purpose was to identify migrant children's health needs prior to the time of school entry.

Approval for the study was granted by the Human Subjects Review Board of San Jose State University (Appendix C). Permission and support for the study was obtained by the Director of the Migrant Education Program of the school district where the study was conducted (Appendix D). The clinic that completed the health examinations verbally agreed to assist with data collection.

Research Design

A descriptive design was used to identify the health needs of migrant children as they enter kindergarten. Data were collected between April and June, 1990, at eight elementary school sites and one migrant labor camp located in Northern California. The variables of interest were the results of comprehensive health examinations from the following categories: dental assessment, vision and hearing screening, hemoglobin/ hematocrit, height, weight, and immunizations.

The Sample

Participants included all children enrolled in the Migrant Education Program of the school district who received a health examination at kindergarten registration between April and June, 1990. The sample consisted of 112 children between 4 and 6 years of age; 64 were males and 48 were females. All children were eligible to enter kindergarten in the Fall of 1990. Parental or guardian consent for the child's participation in the study was obtained. The study used a convenience sample because it provided the largest sample size. Although random sampling is ideal, it would have been difficult to achieve without possibly violating participant's rights, and the number required to randomly select a sample was not available.

The Instrument

The tool used was the PM 160 form developed by the State of California, Child Health and Disability Prevention (CHDP) program, a branch of the Department of Health Services (Appendix A). This form was originally developed in 1975 by the CHDP program and has been revised twice as the program's needs changed. Input from various advisory groups such as the American Academy of Pediatrics and providers of health care was considered in form revision. The most recent revision occurred in 1989; this current version of the PM 160 form was used in the study.

The instrument is a record of findings from a comprehensive health examination which includes the following categories:

1. Health and developmental history
2. Physical examination (includes dental assessment)
3. Nutritional assessment (includes height/weight)
4. Immunizations
5. Vision screening
6. Hearing screening
7. Laboratory tests (includes urine and blood)
8. Health education and anticipatory guidance.

This study analyzed the results of 112 CHDP examinations recorded on PM 160 forms to identify the health

needs of migrant children as they enter kindergarten. The study specifically addressed findings from the following categories:

1. Dental assessment
2. Vision screening
3. Hearing screening
4. Hemoglobin/Hematocrit (blood tests for anemia)
5. Height
6. Weight
7. Immunization status

The data from the PM 160 form were divided and analyzed in the following manner:

1. Dental assessment findings were listed as normal or abnormal. All abnormal results indicated caries.

2. Vision screening results were listed as normal, abnormal, or unable to complete.

3. Hearing screening results were listed as normal, abnormal, or unable to complete.

4. Blood tests to screen for iron deficiency anemia included hematocrits and hemoglobins. Hematocrit measurements were collected on the 89 participants from the kindergarten registration sites. Hemoglobins were collected on the 24 participants from the migrant labor camp. Hemoglobins were done instead of hematocrits at the migrant

labor camp because the clinic that offered the examinations was testing new equipment which only measured this value.

5. Height was measured and recorded to the nearest one-eighth inch on a growth chart based on age and sex (Appendix B). Measurements were listed as normal, over height, or under height.

6. Weight was measured and recorded to the nearest quarter pound on a growth chart based on age and sex (Appendix B). Measurements were listed as normal, overweight, or underweight.

7. Immunization status was listed as being either up to date for age, or deficient, meaning immunizations that should have previously been administered based on the child's age were lacking.

Sections of the instrument not addressed in the study included demographics, ethnic codes, and fees charged for procedures. All information on the PM 160 form is voluntary and is used by the CHDP program to monitor program quality, to reimburse providers of health assessments for their services, and to facilitate diagnosis and treatment at the local level for children found to have health problems. The CHDP program provides access to records containing this information, as well as the location and categories of persons who use it.

Data Collection Procedures

Data collection began in April and ended in June, 1990. The criteria for inclusion in the study were as follows:

1. Enrollment in the Migrant Education Program
2. Eligible to enter kindergarten in the Fall of 1990
3. Parental consent to participate in the study
4. Child received a CHDP examination

Each kindergarten registration site conducted business in a similar fashion: various stations were provided to enroll children and provide parents information on requirements for school participation. After children enrolled in school to start kindergarten in the Fall of 1990, they passed through the Migrant Education station to see if they qualified for the program. The school district enrolls about 16,000 students; over 6,000 of them are in the Migrant Education Program.

Eligibility for the Migrant Education Program was determined by a Migrant Community Liaison who asked parents questions regarding their employment in agriculturally related work. There were one or two Migrant Community Liaisons at each of the kindergarten registration sites. Two weeks prior to data collection, each of the six Migrant Community Liaisons involved in the study was instructed regarding data collection, and specifically what to say in

obtaining consent. The procedure was standardized so that all Migrant Community Liaisons used the same approach and words to obtain consent. A pilot test was conducted at the first kindergarten registration site where data were collected on 12 subjects by 2 Migrant Community Liaisons. After the pilot test, they offered suggestions and comments on improving the data collection which were incorporated into the study design.

The Migrant Community Liaisons explained the purpose of the study and obtained consent to participate from the child's parent or guardian. All communication was conducted in the family's primary language (usually Spanish) and consent letters were in both English and Spanish (Appendix E). A release of medical information form (Appendix F) was also provided in English and Spanish and was signed by the child's parent or guardian to allow the researcher access to the child's CHDP health examination record.

The clinic offered CHDP examinations to eligible children at 8 of the 13 kindergarten registration sites in the school district. The eight schools selected are known to have the largest concentration of low-income and migrant students. Families have the right to obtain the health examination from any provider of their choice, but many migrant parents elect to have their child's examination

completed at kindergarten registration, not only because of its convenience, but because many do not have a regular health care provider.

All parents who were asked to participate in the study agreed to do so. Although some did not complete the health examination at the school site (changed mind, uncooperative child, time constraints), data were obtained on 100% of those that did receive the examination (n=89). Children received their health examinations from one of two physician's assistants (PA) employed by the clinic that provided the health examinations. The PA recorded findings on the PM 160 form by marking a check in the appropriate column to indicate whether the results of the health examination and screenings were normal, abnormal, or unable to be completed (uncooperative child). Numeric values were listed for the child's height, weight, and hemoglobin or hematocrit result. The child's immunization card was reviewed to determine the need for immunizations. Immunizations administered included polio, DPT (diphtheria, pertussis, tetanus), and MMR (measles, mumps, rubella). Immunizations administered at time of the health examination were recorded as such on the PM 160 form.

The data collection instrument is a quadruplicate form; the top copy is sent to the State's CHDP program for

provider reimbursement, the second copy is sent to the county's CHDP program, the third copy is kept by the provider of service, and the bottom copy is retained by the child's parent.

After the PA completed the CHDP health examination, findings were recorded on the PM 160 form which was collected and returned to the clinic. Within two days, the researcher presented the clinic with the participant's release of medical information consent form; copies of the original PM 160 form were produced by the clinic for the researcher. Staff at the clinic were approached prior to data collection to gain support for the study and their agreement to copy the health examination records.

A clinic secretary provided the researcher copies of the PM 160 forms within one week of completion. Data collection continued until records of all eligible participants were obtained.

In addition to the eight school sites, CHDP examinations were also given at a migrant labor camp to children enrolled in its child care facility. Since all of the children living at the camp are in the Migrant Education Program, those eligible for kindergarten in the Fall of 1990 (n=23) were also included in the study to increase sample size. None of the labor camp children participated in

kindergarten registration because the camp opened after all the school site registrations and CHDP health examinations had been completed. All of the migrant labor camp residents had migrated to the area within the previous month.

Parental consent to participate in the study was obtained by the secretary of the labor camp who received the same instruction as the Migrant Community Liaisons to standardize the approach and wording of obtaining consent. The CHDP health examinations were provided to 100 children ages 3 months to 7 years living in the labor camp, but only 23 of those children met the age criteria for inclusion in the study. It was originally estimated that the sample size would be 100; at completion, 112 participants were included.

Chapter 4

ANALYSIS AND INTERPRETATION OF DATA

The purpose of this study was to identify health needs of migrant students at time of entry to kindergarten by reviewing their CHDP health examination records. The results provide information needed to plan health programs aimed at prevention and early correction of problems which impact the education of migrant students.

Findings will be presented in two sections using tables, figures and discussion:

1. Demographic characteristics of the sample
2. Findings from the CHDP health examinations

Demographic characteristics of the sample

The sample included all migrant children who received a CHDP health examination when they registered for kindergarten entry for the Fall of 1990 (n=89). To increase the sample size and improve reliability of the data, all children from a migrant labor camp who met inclusion criteria for the study were added (n=23). The total sample included 112 kindergarten-eligible migrant children in a school district of Northern California that encompasses three counties.

The status of participants in the Migrant Education Program is determined as either a current migrant child or a

former migrant child. A current migrant child's family made a qualifying move within the past 12 months to seek employment in agricultural activities. A status 1 child moved between states or between countries, whereas a status 2 child moved within the state. A former migrant child made a qualifying move more than 12 months ago, but less than 6 years ago, and is classified as status 3. Status 1 and status 2 children are considered as a unit and have higher priority in the program than status 3 children.

The distribution of demographic characteristics of the sample by sex, age, setting, and the child's migrant status is presented in Table 1. The table shows that slightly more than half of the children were male (57%), and that the vast majority were either 4-year-olds (45%), or 5-year-olds (47%), with 6-year-olds comprising only a small percentage of the sample (8%). Eighty percent (n=89) of the sample was drawn from eight school sites, the remaining 20% (n=23) was from a migrant labor camp. Table 1 shows that the majority of the sample (63%) consisted of status 1 and status 2 migrant children compared to status 3 children (37%).

Findings from the CHDP health examinations

The CHDP health examination records (PM 160 form) provided results of various assessments and health screenings which were recorded by the health care provider

Table 1

Demographic Characteristics of the Sample (N=112)

Sex	n	%
Males	64	57
Females	48	43

Age	n	%
4 years old	50	45
5 years old	53	47
6 years old	9	8

Settings	n	%
School 1	14	12
School 2	6	5
Migrant Labor Camp	22	20
School 3	19	17
School 4	13	12
School 5	7	6
School 6	9	8
School 7	12	11
School 8	10	9

Child's Migrant Status	n	%
Status 1 or 2	71	63
Status 3	41	37

as normal, abnormal or undetermined. Interpretation of the results was based on the standard range of normal values used by the clinic that provided the examinations. Results were recorded as undetermined when subjects did not cooperate with the examination process. Findings from the following categories were analyzed:

1. Dental assessment
2. Vision screening
3. Hearing screening
4. Hemoglobin/Hematocrit
5. Height
6. Weight
7. Immunizations

The frequency distribution of normal, abnormal, and undetermined results of CHDP health examinations by category using the standard range of normal values is shown in Table 2. Each category is discussed separately.

Dental

Dental abnormalities represented the major health need identified by the study. Twenty one percent of the sample had abnormal results indicative of dental decay.

Vision

Only 1% of the sample had an abnormal vision screening result, although it is noteworthy that 11% had undetermined

Table 2

Frequency Distribution of CHDP Health Examination Results Using Standard Range of Normal Values

Category	Normal % (n)	Abnormal % (n)	Undetermined % (n)
Dental	78 (87)	21 (24)	1 (1)
Vision	88 (99)	1 (1)	11 (12)
Hearing	89 (100)	6 (7)	5 (5)
Anemia	87 (98)	10 (11)	3 (3)
Height	93 (104)	7 (8)*	0 (0)
Weight	77 (87)	23 (25)**	0 (0)
Immunizations	83 (93)	17 (19)	0 (0)

Note. * Abnormal height results included children over height for age and sex (5% (n=6)), and those under height for age and sex (2% (n=2)).

** Abnormal weight results included children who were overweight for age and sex (19% (n=2)), and those underweight for age and sex (4% (n=4)).

results due to the fact that 12 children did not cooperate with the vision screening procedure.

Hearing

Six percent of the sample had abnormal hearing screening results. As with vision, completing a hearing screening required each of the children to follow directions and to cooperate with the examiner; 5% of the sample had undetermined results in this category.

Hemoglobin/Hematocrit

Ten percent of the sample had abnormal hemoglobin or hematocrit results which are blood tests to screen for iron deficiency anemia. For purpose of this study, children with abnormal hemoglobin or hematocrit results were identified as having anemia. This was based on the definition of anemia determined by the medical staff of the clinic that provided the health examinations. Three percent of the sample had undetermined results in this category due to the fact that three children did not cooperate with the laboratory technician who attempted to draw their blood.

Height

Seven percent of the sample had abnormal height-for-age and sex measurements: 5% were over height, 2% were under height. There were no undetermined results in this category. Over height and under height are the least

serious of the nine health needs identified by the study.

Weight

Twenty three percent of the sample had abnormal weight-for-age and sex measurements; 19% were overweight, 4% were underweight. There were no undetermined results in this category.

Immunizations

Seventeen percent of the sample had incomplete immunization records for their age. This deficiency was reflected in the fact that 19 children were unable to document having received a measles, mumps, and rubella (MMR) immunization which is normally given at age 15 months. Since all children were between 4 and 6 years of age, they should have previously received an MMR immunization. Children who could not document an MMR immunization received it during the CHDP examination to satisfy the State's mandate for school entry. There were no undetermined results in this category.

Analysis of the data revealed that the majority of the sample (62%) had an abnormal result in at least one of the seven categories addressed. In this study, an abnormal result was interpreted as a health need. The distribution of the sample with and without health needs identified is illustrated in Figure 2. This figure shows that 20% of the

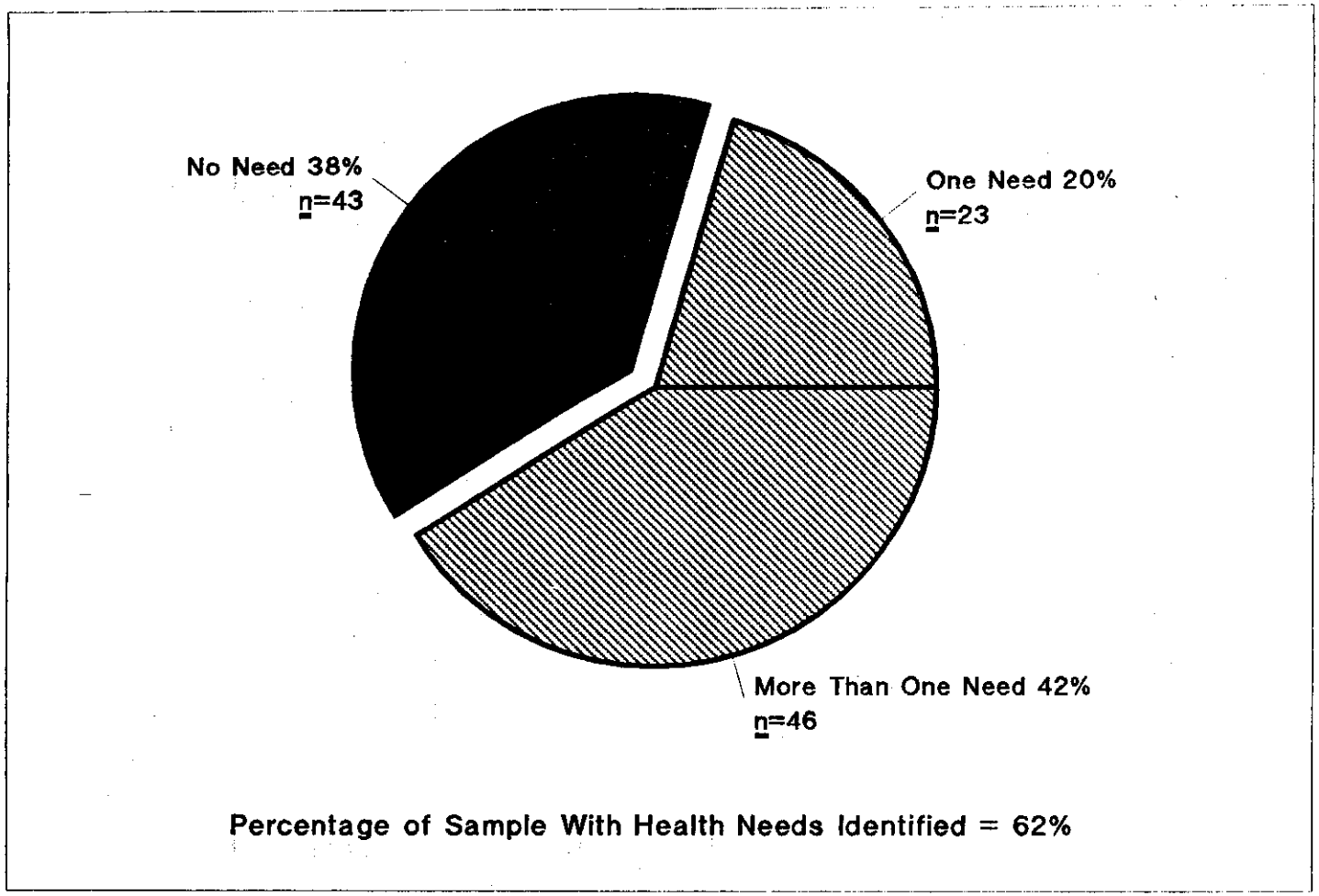


Figure 2. Distribution of sample with and without health needs identified (N=112).

sample (n=23) had one health need, and that 42% (n=46) had more than one health need, meaning they had at least two abnormal findings on their PM-160 form. The figure shows that 46 of 69, or two-thirds of the children with health needs identified had more than one need. Thirty eight percent (n=43) had no health needs identified.

Using the standard range of normal values, there were nine health needs identified which are presented in rank order in Figure 3. For purposes of presenting findings, height and weight abnormalities are identified separately. The health needs were:

1. Dental
2. Overweight
3. Immunizations
4. Anemia
5. Hearing
6. Over height
7. Underweight
8. Under height
9. Vision

The percentage of status 1 and 2, and status 3 migrant children with abnormal findings in each category is presented in Figure 4. The figure shows that status 1 and status 2 migrant children had a greater percentage of health

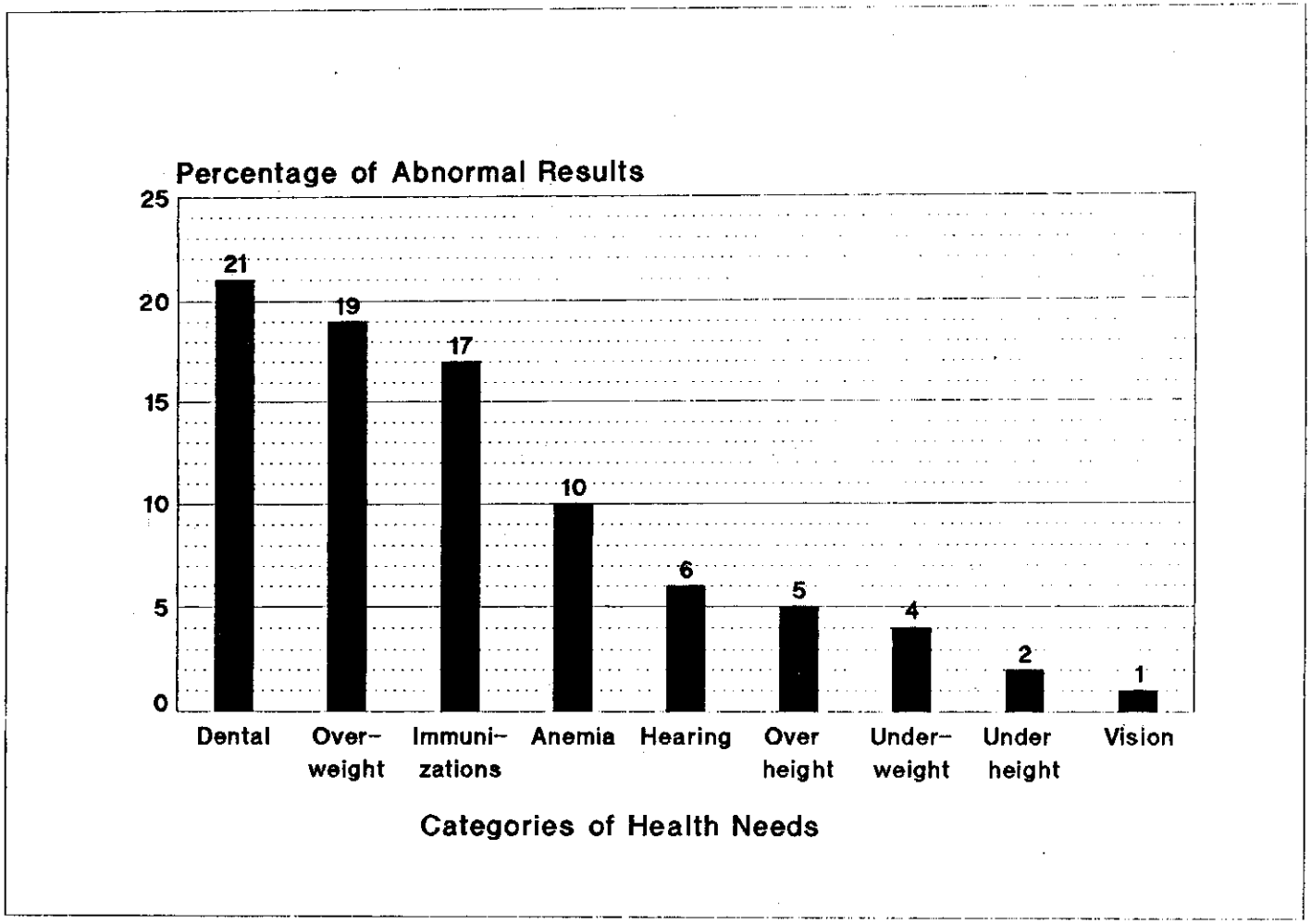


Figure 3. Rank order of health needs identified using standard range of normal values.

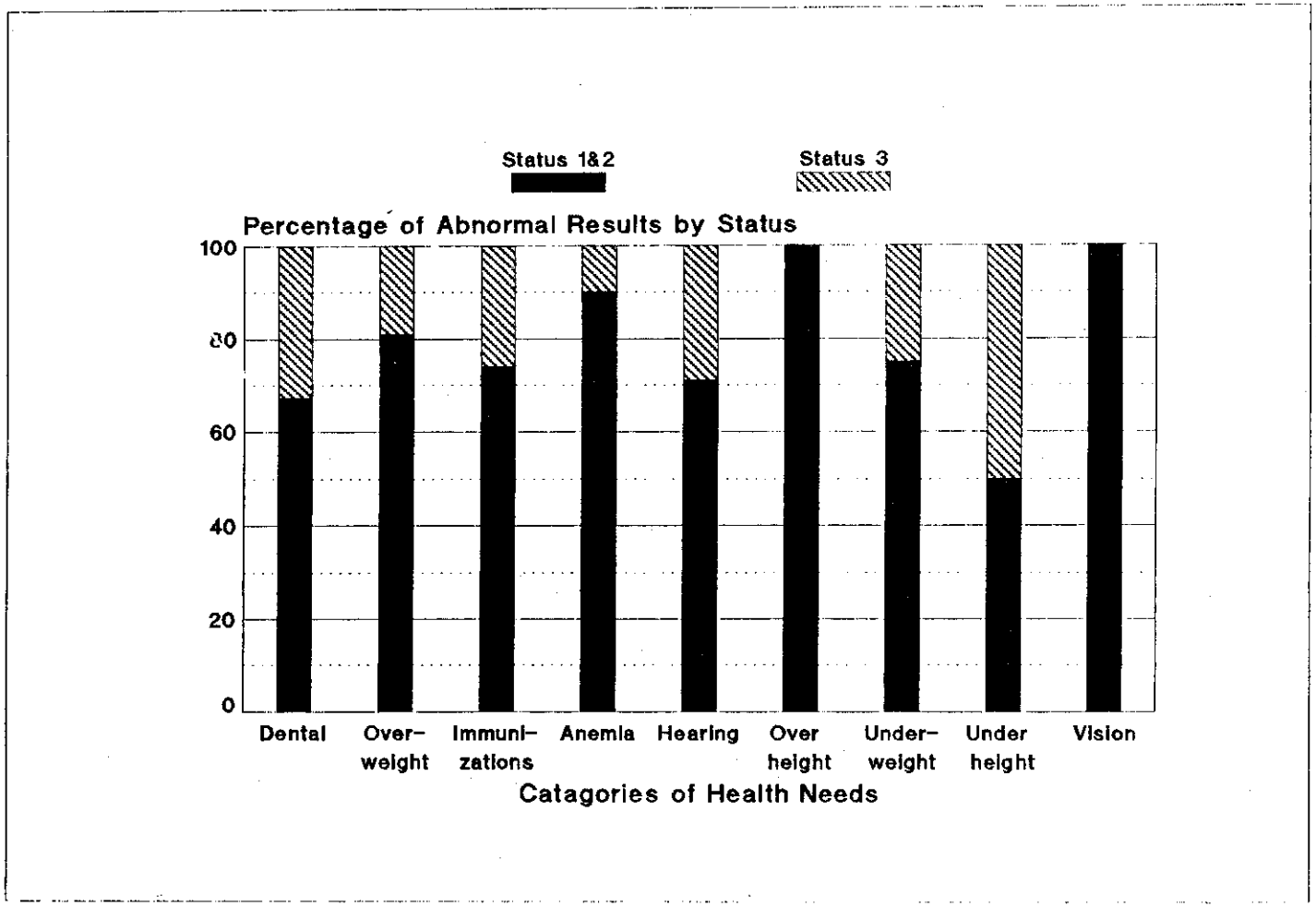


Figure 4. Percentage of status 1 and 2, and status 3 migrant children with abnormal findings in each category.

needs identified than status 3 children in all categories. In eight of the nine categories, status 1 and status 2 migrant children had at least twice the frequency of abnormal findings compared to status 3 children. In the categories of vision and under height, status 1 and status 2 migrant students had 100% of the abnormal findings.

The abnormal results from this study were determined by the standard range of normal values used by the medical staff of the clinic that provided the CHDP health examinations. Results from height, weight, hemoglobin, and hematocrit categories were listed as abnormal if they fell beyond (higher or lower) than the standard cut off points used to define normal values. Analysis of the data revealed that many children had measurements that fell exactly on the cut off points, or very close to them, indicating measurements that were "border line abnormal." When the range of normal values was adjusted to interpret measurements that fell on or very close to the limits as being abnormal, the profile of health needs identified changed considerably. There were only four categories where actual measurements recorded on the PM 160 form could be adjusted: height, weight, hemoglobin, and hematocrit. The standard and adjusted values used as cut off points to identify abnormal measurements were:

Category	Standard Values	Adjusted Values
Height	<5% or >95%	≤5% or ≥95%
Weight	<5% or >95%	≤5% or ≥95%
Hemoglobin	<12 gm/dl	≤12 gm/dl
Hematocrit	<34%	<35%

The frequency distribution of abnormal results of the CHDP health examinations determined by use of standard and adjusted range of normal values for height, weight, and anemia is shown in Table 3. When adjusted values were used, the number one health need identified was overweight, followed by anemia. These two health needs were more prevalent than even the most common health need typically noted in migrant children: dental.

A comparison of the percentage of abnormal results by categories using standard and adjusted values is shown in Figure 5. This figure shows that the percentage of children identified as being overweight increased from 19% to 29%. In the anemia category, the percentage of abnormal results more than doubled (an increase from 10% to 23%). The percentage of children over height increased from 5% to 10%, and the percentage of under height children increased from 2% to 4%. The percentage of underweight children remained unchanged at 4%.

Table 3

Frequency Distribution of Abnormal Results of CHDP Health Examinations Determined by Use of Standard and Adjusted Range of Normal Values

Category	Standard Abnormal	Adjusted Abnormal
Height	**% (n)**	**% (n)**
Under height	5 (6)	12 (14)
Over height	2 (2)	4 (4)
Total	7 (8)	16 (18)
Weight	**% (n)**	**% (n)**
Overweight	19 (21)	29 (32)
Underweight	4 (4)	4 (5)
Total	23 (25)	33 (37)
Anemia	**% (n)**	**% (n)**
Hemoglobin	9 (10)	9 (10)
Hematocrit	1 (1)	14 (16)
Total	10 (11)	23 (26)

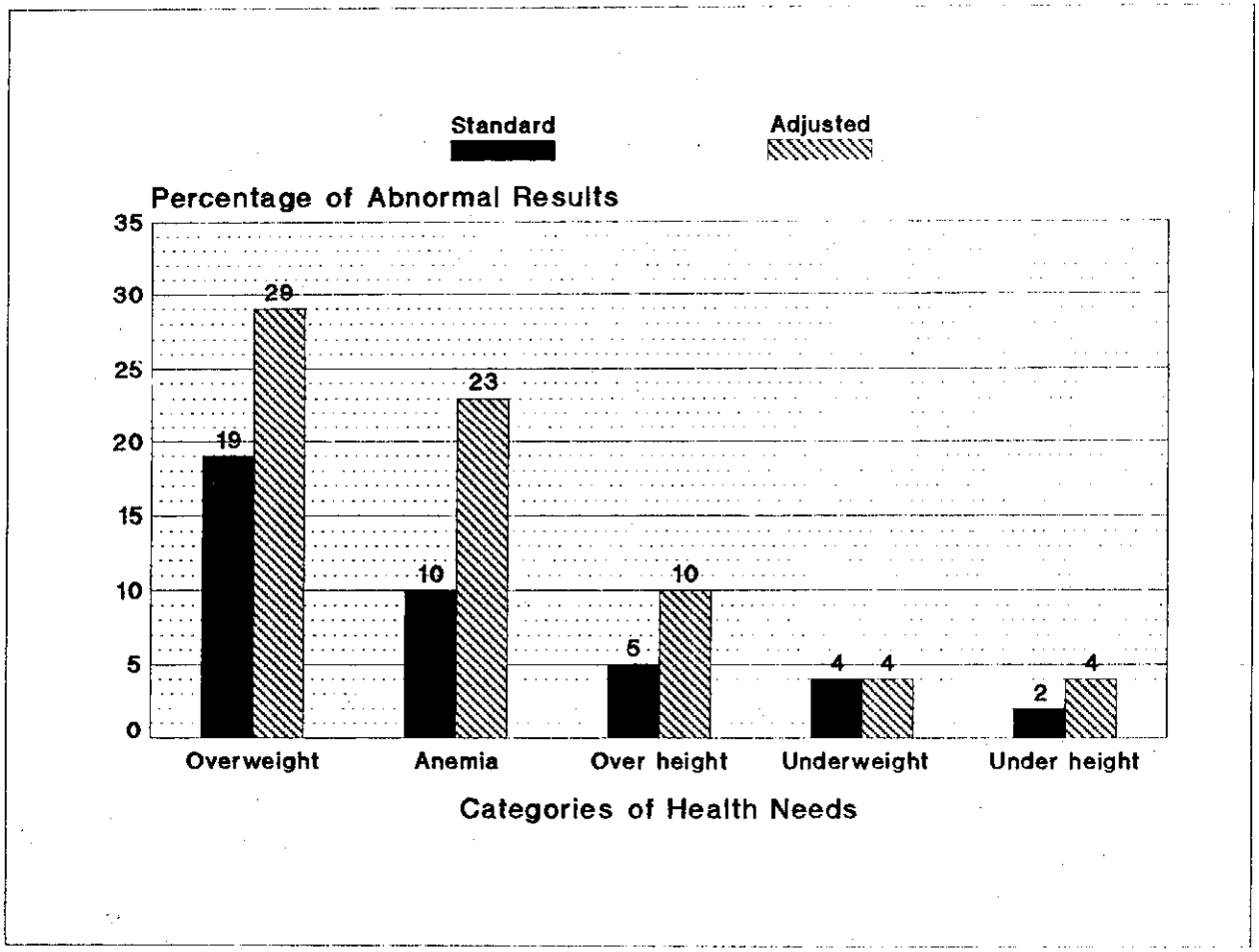


Figure 5. Percentage of abnormal results by categories using standard and adjusted values.

The rank order of health needs identified using adjusted range of normal values is shown in Figure 6 as:

1. Overweight
2. Anemia
3. Dental
4. Immunizations
5. Over height
6. Hearing
7. Underweight
8. Under height
9. Vision.

Summary

The demographic data collected from the CHDP health examination records were analyzed into percentages for each of the seven categories studied to provide descriptive data on the health needs of migrant students as they enter school in kindergarten. The sample consisted of 112 students in the Migrant Education Program who entered kindergarten in the Fall of 1990. The sample was distributed as follows: 54% were males and 43% were females. Forty five percent were 4-year-olds, 47% were 5-year-olds, and 8% were 6-year-olds. Eighty percent of the sample was drawn from eight elementary school sites where subjects registered for kindergarten, 20% was drawn from a migrant labor camp.

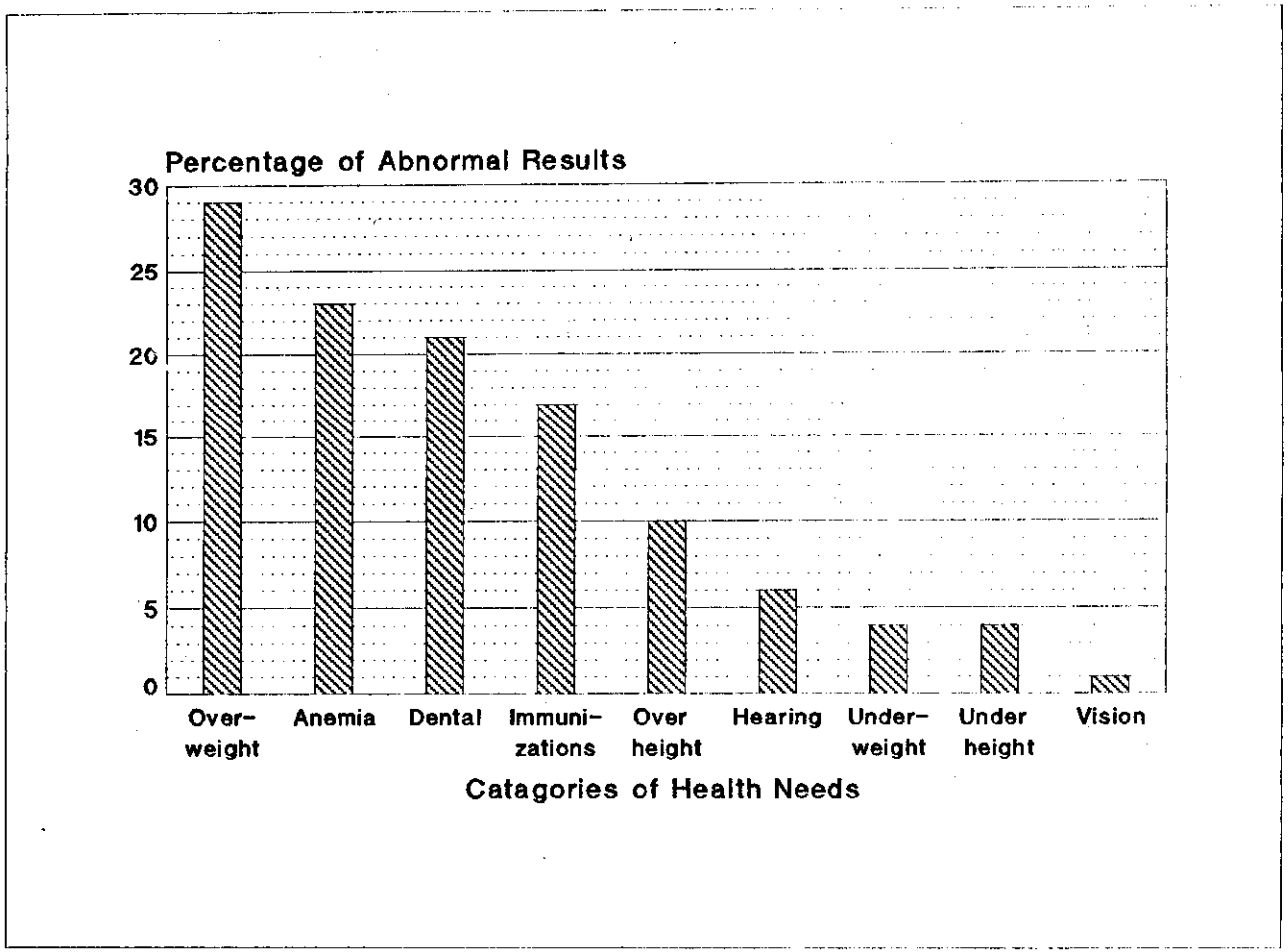


Figure 6. Rank order of health needs identified using adjusted range of normal values.

Sixty three percent of the sample were status 1 or status 2 migrant students, 37% were status 3 migrant students.

The CHDP health examination records indicated that the majority of the sample had at least one health need identified, and of those, two-thirds had more than one health need. Analysis of the data revealed nine health needs when standard range of normal values was used to determine abnormal results. In descending order, the health needs were: dental, overweight, immunizations, anemia, hearing, over height, underweight, under height, and vision. Due to their young age, some children were unable to cooperate in the health examination. Consequently, some results were undetermined: vision (11%), hearing (5%), and hemoglobin/hematocrit (3%). Status 1 and 2 migrant students had a greater percentage of abnormal findings in each of the seven categories studied compared to status 3 students.

When the range of normal values was adjusted to interpret measurements that fell on or very close to the cut off points (upper or lower limits) of standard normal values as being abnormal, the profile of health needs identified changed. Overweight and anemia surpassed dental as the most prevalent health needs, followed by immunizations, over height, hearing, underweight and under height (equal percentage of abnormal findings), and lastly vision.

Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

This chapter contains the findings, recommendations, and implications for school nursing practice. The purpose of this descriptive study was to identify health needs of migrant children as they enter kindergarten in order to plan programs to improve both their health status and educational experience. The data collection instrument was the PM-160 form developed by the State of California's CHDP program to record results of comprehensive health examinations provided to low-income children. Leininger's transcultural care theory (1988) was used as the conceptual framework for providing migrant families culture congruent care.

The sample population consisted of 112 kindergarten-eligible migrant children from a school district in Northern California. Participants were between 4 and 6 years of age, and were drawn from eight school sites and one migrant labor camp where CHDP health examinations were provided. The majority of the sample had migrated to the area within the last year (63%); they are a high priority group identified by the State of California's Migrant Education Program to receive health and support services. The belief that healthy children learn better than those in a poor state of health guided this study.

Conclusions

The data obtained from this study indicated that the sample population of kindergarten-eligible migrant children had a number of unmet health needs which could negatively impact their learning potential and academic performance. The study revealed that the majority of the sample (62%) had at least one health need identified by a CHDP health examination; two-thirds of those children had multiple needs. There were nine health needs identified by the study which will be discussed in descending rank order:

Dental

Dental problems represented the number one health need identified by the study; 21% of the sample had dental problems. The literature supports this finding in studies of migrant children across the nation (Call, Entwistle, & Swanson, 1987, Di Angelis, Katz, Jensen, Pintado, & Johnson, 1981). Dental disease is preventable; with health education, adequate nutrition, and preventive dental health practices, (brushing, use of fluoride, and sealants) its incidence can be almost totally eliminated. The direct cost of treating dental problems is very high and few migrant families have the financial resources or dental insurance to pay for it. The indirect cost of untreated dental disease includes pain, loss of days from school or work, and loss of

permanent teeth for life. The California Migrant Education Health Program stated that dental needs are the most prevalent and costly of all health problems seen in migrant children enrolled in their program, and estimated that two-thirds of their annual health budget is spent on dental care alone (M.L. Graham, personal communication, September 21, 1990).

Weight

Using age and sex-specific growth charts, weight and height measurements were recorded on percentile curves to identify children whose measurements fell outside the established range of normal values: below the 5th percentile or above the 95th percentile. In a sample population of the same age and sex, it would be expected that 5% of the children would have weight measurements beyond these cut off points. In the study, 19% of the sample had weight measurements above the 95th percentile, a figure almost 4 times greater than what growth charts predict. When the cut off points used to identify abnormal values were adjusted to include weight measurements that fell exactly on the 95th percentile line, the percentage of overweight children increased from 19% to 29%. The trend of Mexican-American children becoming increasingly overweight is a serious concern. Obesity increases the risks for

developing significant health problems such as diabetes, cardiovascular disease, and cancer, which are all major causes of death in the adult Hispanic population. As with dental problems and immunizations, obesity is a condition that is usually preventable by diet, exercise, and changes in lifeway. The findings of this study are similar to those of the Hispanic Health and Nutrition Evaluation Survey (HHANES) 1982-1984 from which Martorell (1987) described Mexican-American children as being "short and plump" when compared to the general population. Only 4% of the sample had weight measurements below the 5th percentile (underweight), which is an expected finding when using percentile curves.

Immunizations

Seventeen percent of the sample were deficient in the MMR (measles, mumps, rubella) immunization which is mandated by the State of California for school entry. The school district in which this study was conducted estimated that 12% of the total population lacks immunizations (A. Pires, personal communication, September 26, 1990). The higher rate of deficient immunizations in the sample compared to the general population of the school district supports the literature (Policy Analysis for California Education, 1989) that migrant children are at higher risk for being under

immunized. In view of the current measles epidemic in the State of California, it is essential that all children be adequately immunized against this highly contagious but easily preventable disease. The State mandated immunizations protect children from diseases that cause school absences, suffering, and death. They are preventable with adequate immunizations.

Hemoglobin/Hematocrit

The study revealed that 10% of the sample had an abnormal (low) hemoglobin/hematocrit result. Ninety seven percent of the sample from the school sites had hematocrit tests performed; only 1% had abnormal results. The medical staff of the clinic that offered the health examinations lists hematocrit values below 34% as being abnormal. Hematocrit values between 34% and 35% are considered "border line low"; diet counseling is offered to families whose children's values fall in this range. When the cut off point used to identify abnormal values was adjusted to include children whose hematocrit values fell between 34% and 35%, the percentage of children with abnormal hematocrit values more than doubled (an increase from 10% to 23%). All of the children from the migrant labor camp had hemoglobin tests performed rather than hematocrits. Ten percent of the hemoglobin results were abnormal, whereas only 1% of the

hematocrit results were abnormal. The fact that two different laboratory tests were used limits generalizing about the findings and the incidence of iron deficiency anemia in this population. Results of the hemoglobin and hematocrit tests being so different raises two questions:

1. Are the measurements valid?

2. Are migrant children living in the labor camp more prone to iron deficiency anemia than those living elsewhere?

Iron deficiency anemia, like dental problems, obesity, and deficient immunization status, is preventable. Of these top four health needs identified by the study, three are actual health problems, whereas deficient immunization status is a health concern. Iron deficiency anemia, dental decay, and obesity all share a common denominator: poor nutrition. The findings suggest that many migrant children in the study are poorly nourished, leading to the following questions:

1. Do migrant children consume foods high in calories (fats) and sugar, predisposing them to obesity, diabetes, and cardiovascular disease in adulthood?

2. Do migrant children have decreased activity (exercise) levels predisposing them to the problem of being overweight?

3. Does poor nutrition, in combination with poor oral hygiene, and lack of preventive dental care, result in a higher rate of tooth decay in migrant children?

4. Do migrant children lack sufficient iron rich foods in their diet, predisposing them to the risk of iron deficiency anemia?

5. Do migrant children have parasites which result in anemia?

Identifying border line measurements as being abnormal clearly changed the profile of health needs identified in the sample. Trends suggesting a greater tendency towards obesity and iron deficiency anemia warrant consideration. The lifeways of migrant families may predispose them to health-harming practices which interact, and possibly result in, problems which negatively impact potential for academic success.

Hearing

The important finding in this category was that 5% of the sample did not have their hearing tested due to the fact that they were unable to cooperate with the screening process. Audiometric testing requires a quiet setting without distraction; the environment at kindergarten registration was neither. Young children often require more time and individual attention than kindergarten registration

allowed to perform the test. Play audiometry, a technique designed especially for preschool children, is more ideal for this age group, although it requires special training and more time to conduct.

Height

Analysis of height measurements revealed that 5% of the sample was over height for age and sex. This finding was expected; percentile curves predict that 5% of the population will have height measurements above the 95th percentile. Only two percent of the sample was under height for age and sex. This figure is lower than expected considering the literature describes Mexican-American children as shorter than the general population (Martorell, 1987, Martorell, Malina, Castillo, Mendoza & Pawson, 1988, Martorell, Mendoza & Castillo, 1989). When the cut off points used to identify abnormal values were adjusted to include height measurements that fell exactly on the 95th percentile and 5th percentile lines, the percentage of children over height more than doubled (an increase from 5% to 12%). Likewise, the percentage of children under height doubled from 2% to 4%. Measurements indicating over height or under height are not of great importance if addressed alone. When abnormal height measurements are evaluated in combination with weight measurements and other indicators of

growth and nutritional status (such as hemoglobin and hematocrit results), they are more significant. Since height and weight measurements are used to monitor growth, they should be addressed as a unit.

Vision

Only 1% of the sample had abnormal vision screening results. Eleven percent did not have their vision tested due to the fact that they did not cooperate with the screening procedure. Again, as with hearing, this screening procedure requires that directions be followed. Children were asked to use their hands or fingers to point in the direction of the letter "E" on the wall chart used to measure their visual acuity. The study demonstrated that some children between 4 and 6 years of age are not yet developmentally capable of performing these skills in the setting used at kindergarten registration.

Recommendations

Several recommendations were generated from this descriptive study:

1. Further and more extensive research to support the findings of this study is needed. The questions raised earlier about the nutritional status of migrant children generate ideas for studies to examine if availability, affordability, and accessability of foods influence the

choices migrant families make in selecting them. Research on acculturation and how it affects food choices is needed, as well as studies to determine if food choices are culturally based.

2. Allocation of funds to allow for aggressive preventive and restorative dental services funded by the Migrant Education Program. A pilot project to demonstrate the cost effectiveness of comprehensive dental health care focused on education in preventive dental health practices would be useful to justify increased spending in these areas. Dental caries can be prevented by modifying one or more of the three essential factors for their production: increasing the resistance of the teeth by using fluoride and applying sealants, altering the oral environment (dietary intervention), and reducing or interfering with the microorganisms in contact with teeth (fluoride use and oral hygiene). Since permanent first molars are generally at highest risk of decay, and since they remain at risk the longest, preventive intervention with topical fluorides and sealants must occur immediately after eruption if the rapid onset of decay is to be prevented. A program targeted at children between 6 and 8 years of age would be ideal, as these are the ages when the first permanent molars erupt. Programs that stress brushing and flossing in the classrooms

need to be expanded to educate migrant children about the importance of daily dental hygiene, as opposed to sporadic practice. Parents must be included in dental education.

3. Organization of a migrant parents health task force to meet regularly to discuss common health concerns and strategies to deal with them, to identify community resources, and to make recommendations to the Migrant Education Program which serves them. Leininger (1978) based her theory on the belief that cultures can determine most of the care they desire or need from professional care-givers. It is essential to involve migrant parents in planning health programs for their children; care must be planned with them, not for them.

4. Development of a family nutrition curriculum that is culturally appropriate to migrant lifeways. Education should include: the negative impact of poor nutrition on health and education, the identification of foods high in iron, and low in sugar and fats, which are affordable and culturally acceptable, and information on how the media can confuse consumers about making healthy food choices. The importance of regular exercise and its effect on maintaining health and decreasing weight should be stressed. Education regarding the signs and symptoms of parasites and how they can contribute to anemia should be addressed.

5. Completion of a needs assessment utilizing the Migrant Student Record Transfer System (MSRTS) data management system available to the Migrant Education Program to identify students lacking documentation of adequate immunizations. Coordination with local health agencies such as community clinics, the health department, and private care providers to provide outreach, education, and immunization services to students in need. A clinic that offered immunizations at times when migrant families could best receive them would be essential; programs operating during evening and weekend hours, and school-based clinics would best meet this need. Although many people view the health needs of migrant children as "migrant" problems, they fail to realize that migrant children, through inadequate immunization and lack of treatment for health problems, harbor illnesses that are a threat to the community at large.

6. Provision of vision and hearing screening as mandated by the State to current migrant (status 1 and 2) children early in the school year to identify problems that directly influence learning. In California, many current migrant families migrate in November when agricultural work is not available; it is essential to identify and correct vision and hearing problems early in the school year so that

students can hear and see well while they are in school.

7. Increased awareness of the health needs and risks of migrant children in the school district, community, and at the state level.

8. Support for legislation to provide education, health, and support services to migrant families that are available, affordable, accessible, accountable, and culturally-acceptable to them. Migrant families must be empowered to affect political and social change in their lives.

Implications for School Nursing Practice

The purpose of school nursing is to enhance the educational process by the modification or removal of health-related barriers to learning, and by promotion of an optimal level of wellness (American Nurses Association, 1983). School nurses affect health, health affects education. It is essential for school nurses to be aware of the strong influence of culture on the lifeways of migrant families. Culture, health, and education can not be separated; they share a reciprocal relationship. Leininger's transcultural care theory provides a useful framework for school nurses to use in planning, implementing, and evaluating the care they provide migrant students.

Migrant people are a highly insular and ethnically conscious group; serving them can be difficult and challenging (Byerly, 1980). Leininger (1985) stated that there is a meaningful relationship between social structure factors and world view with folk and professional care practices. She believes that conflict results when nurses fail to recognize cultural care values and beliefs of the family. She also believes that health ideas are embedded in world view, values, and practices, as opposed to medical explanations. This factor is important for school nurses to consider when they plan health care for migrant students. Identifying the health needs of migrant children is only the beginning. Finding the ways and means of providing the care they need to be successful in school remains a challenge.

In conclusion, Leininger's transcultural care theory provides a sound conceptual framework for school nurses to plan culture congruent care for migrant children. According to Leininger (1978), "transcultural nurse specialists ... will be tomorrow's leaders in national and international teaching, research, and service programs" (p. 28). School nurses are in a strong position to lead the educational system to care for, and about, America's most at risk children.

References

Alvarez, W.F., Doris, J., & Larson, O. (1989). Children of migrant farm work families are at high risk for maltreatment: New York State study. Migrant Health Newsline. 6(3), 1-3.

American Nurses Association. (1983). Standards of School Nursing Practice. Kansas City, MO: Author.

Byerly, E. (1980). Health care alternatives of multiethnic migrants (ICNE Rural Health Research Project). Washington, DC: US Public Health Service, Division of Nursing.

California State Department of Education. (1984). Guidelines for health services for migrant students. Sacramento, CA: Author.

Call, R.L., Entwistle, B., & Swanson, T. (1987). Dental caries in permanent teeth of children of migrant farm workers. American Journal of Public Health, 77, 1001-1003.

Colorado State Migrant Education Program. (1988). A case study in interagency collaboration: Colorado Migrant Health program--Colorado Migrant Education program. (Final Report, Migrant Education Health Program). Colorado: Author.

Di Angelis, A.J., Katz, R.V., Jensen, M.E., Pintado, M., & Johnson, B. (1981). Dental needs in children of Mexican-American migrant workers. The Journal of School Health, 51, 395-399.

Feagans, L. (1986). Otitis media: A model for long term effects with implications for intervention. In J.F. Kavanaugh (Ed.), Otitis media and child development (pp. 193-208). Parkton, MD: York Press.

The Flinn Foundation Special Report. (1989). The health of Arizona's school children. (Key findings of two surveys by Louis Harris and Associates, Inc., and the UCLA School of Medicine). Phoenix, AZ: Author.

Gergen, P.J., Ezzati, T., & Russell, H. (1988). DPT immunization status and tetanus antitoxin titers of Mexican-American children ages six months through eleven years. American Journal of Public Health, 78(11), 1446-1450.

Goldsmith, M.F. (1989). As farmworkers help keep America healthy, illness may be their harvest. Journal of the American Medical Association, 261(22), 3207-3213.

Graham, M.L. (1986). Health status of migrant children. Unpublished master's thesis, California State University, Hayward, CA.

Guendelman, S. (1985). Children's health needs in seasonal immigration. Journal of Public Health Policy, 6(4), 493-509.

Harrington, S. (1987, November/December). Children of the road. Instructor, pp. 36-39.

Hayes-Bautista, D., Schink, W., & Chapa, J. (1988). The burden of support: Young Latinos in an aging society. Stanford, CA: Stanford University Press.

Ismail, A.L., Burt, B.A., & Brunelle, J.A. (1987). Prevalence of dental caries and periodontal disease in Mexican-American children aged 5-17 years: Results from Southwestern HHANES, 1882-83. American Journal of Public Health, 77(8), 967-970.

Ismail, A.I., Szpunar, S.M. (1990). Oral health status of Mexican-Americans with high acculturation status: Findings from Southwestern HHANES, 1982-1984. Journal of Public Health Dentistry, 50(1), 24-31.

Leininger, M. (1978). Transcultural nursing: Concepts, theories, and practices. New York: Wiley.

Leininger, M. (1984). Care: The essence of nursing and health. Thorofare, NJ: Slack.

Leininger, M. (1985). Transcultural care diversity and universality: A theory of nursing. Nursing and Health Care 6(4), 209-212.

Leininger, M. (1988a). Leininger's theory of nursing: Cultural care diversity and universality. Nursing Science Quarterly, 1(4), 152-160.

Leininger, M. (1988b). Care: Discovery and uses in clinical and community nursing. Detroit, MI: Wayne State University Press.

Lincoln, C., Smith, R.C. (1988). America's shame, America's hope. (MDC, Inc. Report). Chapel Hill, NC: Charles Stewart Mott Foundation.

Marin, B., Marin G., & Padilla, A. (1982). Utilization of traditional and non-traditional sources of health care among Hispanics. (Occasional Paper, No. 14). Los Angeles: University of California, Spanish Speaking Mental Health Research Center.

Martorell, R. (1987). Short and plump physique of Mexican-American children. American Journal of Physical Anthropology, 13, 475-487.

Martorell, R., Malina, R.M., Castillo, R.O., Mendoza, F.S., & Pawson, I.G. (1988). Body proportions in three ethnic groups: Children and youths 2-17 years in NHANES II and HHANES. Human Biology, 60(2), 205-222.

Martorell, R., Mendoza, F.S., & Castillo, R.O. (1989). Genetic and environmental determinants of growth in Mexican-Americans. Pediatrics, 84(5), 864-871.

Michael, R.J., & Salend, S.J. (1985). Health problems of migrant children. The Journal of School Health, 55(10), 411-412.

Staff. (1988). Migrant farmworker career status. Migrant Health Newsline, 5(5), 1-2.

Migrant Student Record Transfer System. (1990). Student Distribution Summary (MSRTS Management Report No. 1B). Little Rock, AK: Author.

Morgan, P. (1987, September/October). Relationship of health status to learning. School Nurse. pp. 38-43.

National Migrant Resources Program. (1990). Migrant and seasonal farmworker health objectives for the year 2000. Austin, TX: Author.

Policy Analysis for California Education. (1989). Conditions of children in California. Berkeley: University of California, Policy Analysis for California Education Research Center.

Pollack, S.H., Landrigan, P.J., & Mallino, D.L. (1990). The health hazards of agricultural child labor. Migrant Health Newsline, 7(3), (Clinical Suppl.), 2-4.

Pukander, J.L., Spila, M., & Karma, P. (1984). Occurrence of risk factors in acute otitis media. In D.J. Lim (ed.). Recent advances in otitis media with effusion. Philadelphia: Decker.

Rivara, F.P. (1985). Fatal and nonfatal farm injuries to children and adolescents in the United States. Pediatrics, 76, 567-573.

State Department of Health Services. (1976). California Health and Safety Code, Division 1, Part 1, Chapter 2, Article 3.4. Sacramento, CA: Author.

U.S. Bureau of the Census. (1989). The Hispanic population in the United States: March 1988. (Current Population Reports, Series P-20, No. 438). Washington, DC: Department of Commerce.

Wilk, V.A. (1986). The occupational health of migrant and seasonal farmworkers in the United States (2nd ed.), Washington, DC: Farmworker Justice Fund.

APPENDIX A

Data Collection Form

DO NOT STAPLE IN BAR AREA

[redacted]

CLAIM CONTROL NUMBER • FOR STATE USE ONLY

STAPLE HERE

PATIENT NAME (LAST) (FIRST) (INITIAL) MEDI-CAL/CHDP ID — 94 00633265J

BIRTHDATE Mo Day Year | AGE | SEX | PATIENT'S COUNTY OF RESIDENCE | CODE | TELEPHONE NUMBER

RESPONSIBLE PERSON (NAME) (STREET) (CITY) (ZIP)

CHDP ASSESSMENT

Indicate outcome for each screening procedure

	NO PROBLEM SUSPECTED A	REFUSED CONTRA-INDICATED NOT NEEDED B	PROBLEM SUSPECTED NEW C	PROBLEM SUSPECTED KNOWN D	CODE	FEES
01 HISTORY and PHYSICAL EXAM					01	
02 DENTAL ASSESSMENT/REFERRAL						
03 NUTRITIONAL ASSESSMENT						
04 ANTICIPATORY GUIDANCE HEALTH EDUCATION						
05 DEVELOPMENTAL ASSESSMENT						
06 SNELLEN OR EQUIVALENT					06	
07 AUDIOMETRIC					07	
08 HEMOGLOBIN OR HEMATOCRIT					08	
09 URINE DIPSTICK					09	
10 COMPLETE URINALYSIS					10	
11 TB MULTIPUNCTURE					11	
12 TB MANTOUX					12	
CODE / OTHER TESTS — SEE CODES ON REVERSE SIDE OF LAST PAGE					CODE	OTHER TESTS

A M | HEIGHT | WEIGHT | BLOOD PRESSURE | HGB | HCT | BIRTH WEIGHT

IMMUNIZATIONS	GIVEN TODAY: NOW UP TO DATE FOR AGE A	GIVEN TODAY: STILL NOT UP TO DATE FOR AGE B	NOT GIVEN TODAY: ALREADY UP TO DATE FOR AGE C	NOT GIVEN TODAY: REFUSED OR CONTRA-INDICATED D	CODE
31 POLIO ORAL					31
32 DPT Dt/Td					32
33 MMR / MuR / MR					33
38 Hib CV					38

PATIENT VISIT (✓): New Patient or Extended Visit / Routine Visit — TYPE OF SCREEN (✓): Initial / Periodic — TOTAL FEES

FOLLOW UP CODES

1. NO DX/RX INDICATED OR NOW UNDER CARE
2. QUESTIONABLE RESULT. RECHECK SCHEDULED
3. DX MADE AND RX STARTED
4. DX PENDING RETURN VISIT SCHEDULED
5. REFERRED TO ANOTHER EXAMINER FOR DX/RX
6. REFERRAL REFUSED

REFERRED TO — TELEPHONE NUMBER

REFERRED TO — TELEPHONE NUMBER

COMMENTS/PROBLEMS

IF A PROBLEM IS DIAGNOSED THIS VISIT, PLEASE ENTER YOUR DIAGNOSIS IN THIS AREA

ICD 9 CODES: 1 | 2 | 3

THE QUESTIONS BELOW MUST BE ANSWERED

1. Patient is Exposed to Passive (Second Hand) Tobacco Smoke. Yes ☐ No ☐
2. Tobacco Used by Patient. Yes ☐ No ☐
3. Counseled About/Referred For Tobacco Use Prevention/Cessation Yes ☐ No ☐

☐1 Enrolled in WIC ☐2 Referred to WIC

NOTE: WIC requires Ht., Wt. and HGB/HCT

☐ PARTIAL SCREEN ☐ SCREENING PROCEDURE RECHECK

ACCOMPANIES PRIOR PM 160 DATED

PATIENT ELIGIBILITY: COUNTY | AID | IDENTIFICATION NUMBER

☐ If covered by Medi-Cal, enter Medi-Cal I.D. number above AND attach P.O.E. label in shaded area below

☐ Patient not on Medi-Cal. Patient or guardian has read and signed eligibility statement

PROVIDER OF SERVICE: Name, Address, Telephone Number (Please include Area Code)

PROVIDER NUMBER: CHH70246F

SALUD PARA LA GENTE
10 ALEXANDER STREET
WATSONVILLE CA 95076

SITE OF SERVICE IF OTHER THAN ABOVE

This is to certify that the screening information is true and complete, and the results explained to the child or his parent or guardian. I understand that payment and satisfaction of this claim may be from Federal or State funds, and that any false claims, statements or documents or concealment of a material fact, may be prosecuted under applicable Federal or State law. I also certify that none of the services billed on this form have been or will be billed to Medi-Cal, the patient, or other insurance providers.

SIGNATURE OF PROVIDER — DATE

CONFIDENTIAL SCREENING/BILLING REPORT

STATE OF CALIFORNIA-CHILD HEALTH AND DISABILITY PREVENTION PROGRAM

COPY 1 - MAIL TO MEDI-CAL CHDP — Medi-Cal CHDP, P.O. Box 15300, Sacramento, CA 95851-1300

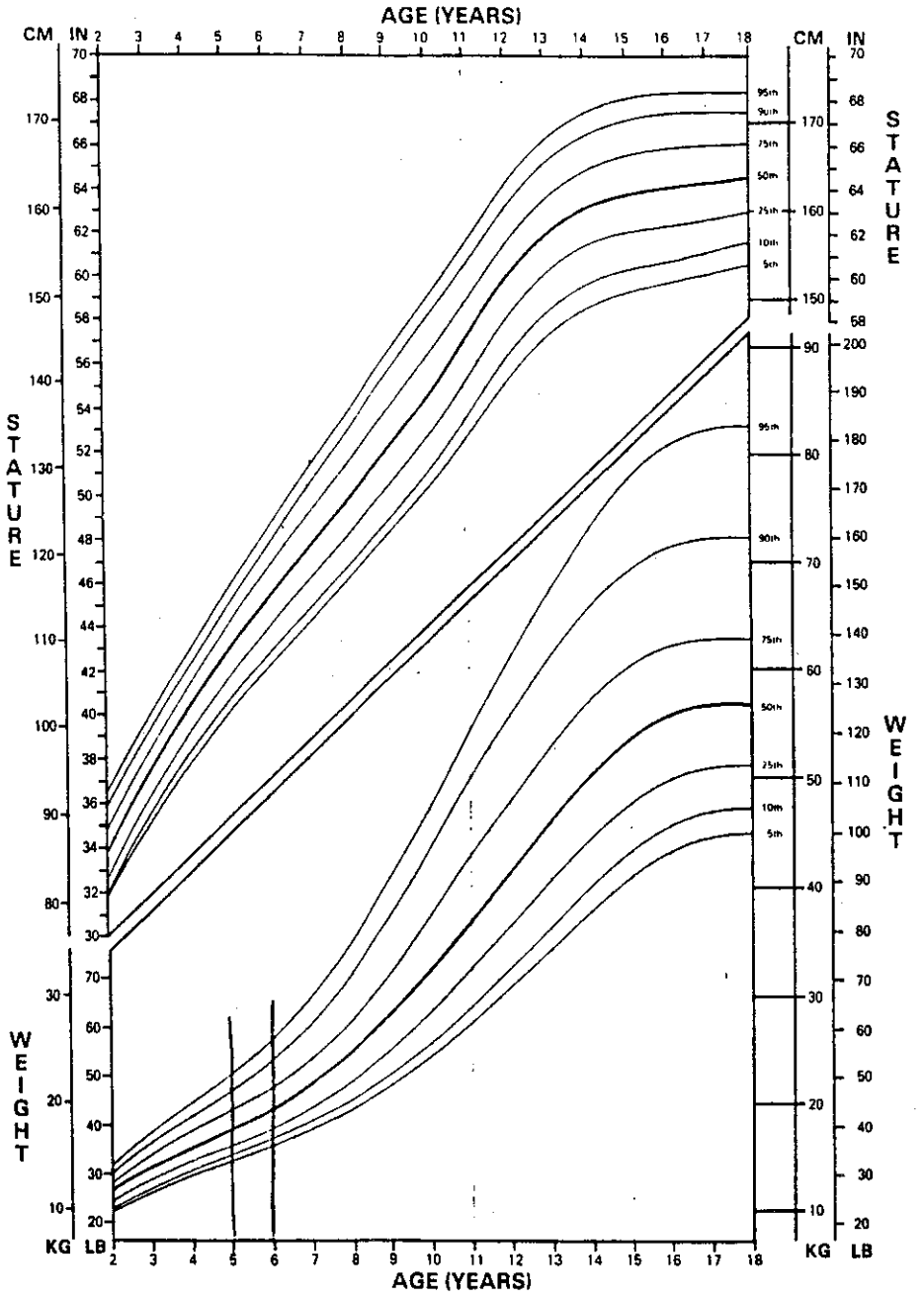
APPENDIX B

Sample Growth Charts

GIRLS: 2 TO 18 YEARS
STATURE FOR AGE &
WEIGHT FOR AGE

NAME _____

RECORD # _____



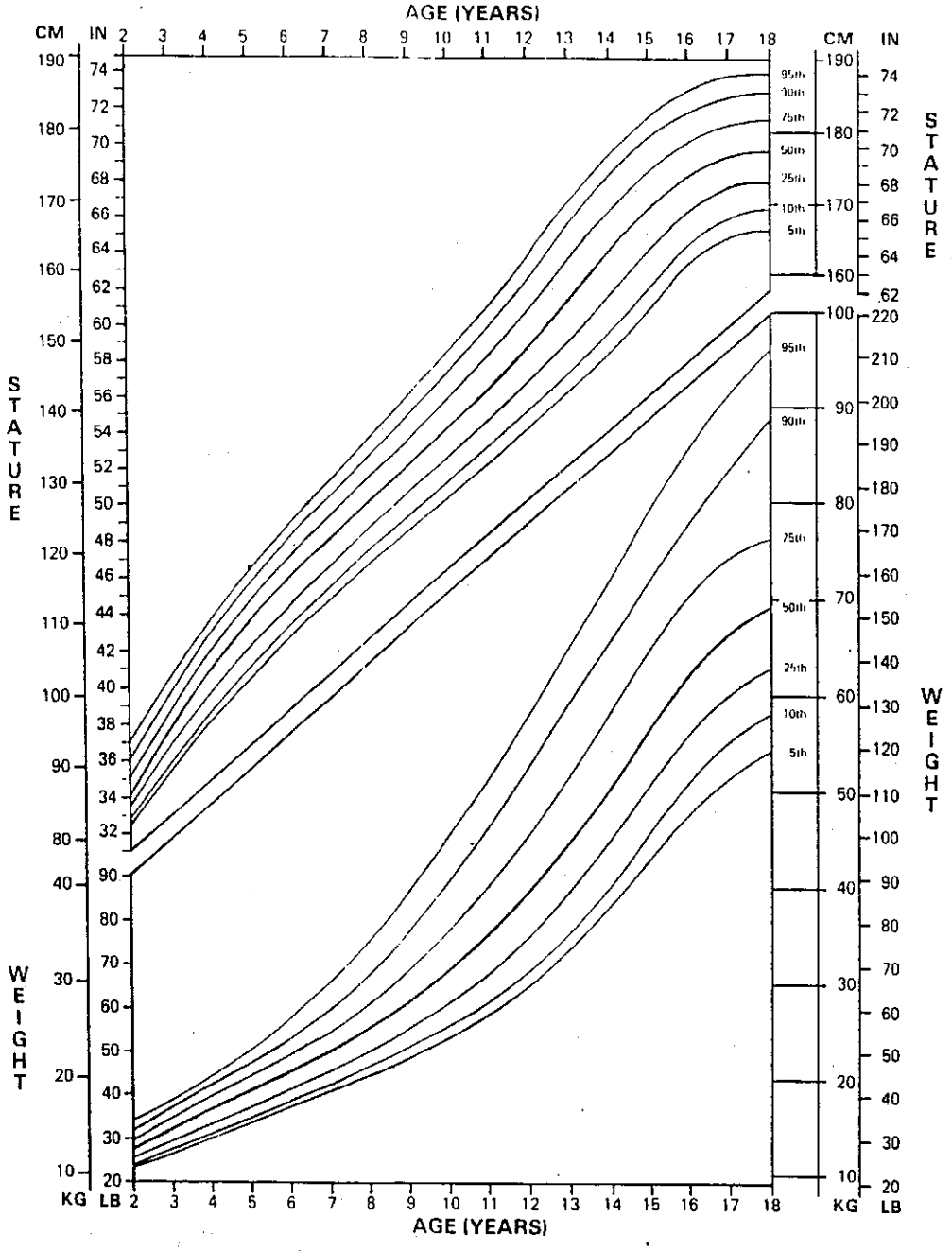
Department of Health, Education and Welfare, Public Health Resources Administration,
National Center for Health Statistics and Center for Disease Control

BOYS: 2 TO 18 YEARS

STATURE FOR AGE &
WEIGHT FOR AGE

NAME _____

RECORD # _____



Department of Health, Education, and Welfare, Public Health Service
Health Resources Administration, National Center for Health Statistics, and Center for Disease Control

APPENDIX C

Approval by Human Subjects Institutional Review Board

SJSU SAN JOSE STATE UNIVERSITY

A campus of The California State University

Office of the Academic Vice President • Associate Academic Vice President • Graduate Studies and Research
One Washington Square • San Jose, California 95192-0025 • 408/924-2480

To: Mary Ellen Good, Nursing
241-B North Avenue
Aptos, CA, 95003

From: Charles R. Bolz
Office of Graduate Studies and Research

Date: April 19, 1990

The Human Subjects Institutional Review Board has approved your request to use human subjects in the study entitled:

"Health Status of Migrant Kindergarten Students at Time of School Entry"

This approval is contingent upon the subjects participating in your research project being appropriately protected from risk. This includes the protection of the anonymity of the subjects' identity when they participate in your research project, and with regard to any and all data that may be collected from the subjects. The Board's approval includes continued monitoring of your research by the Board to assure that the subjects are being adequately and properly protected from such risks. If at any time a subject becomes injured or complains of injury, you must notify Dr. Serena Stanford immediately. Injury includes but is not limited to bodily harm, psychological trauma and release of potentially damaging personal information.

Please also be advised that each subject needs to be fully informed and aware that their participation in your research project is voluntary, and that he or she may withdraw from the project at any time. Further, a subject's participation, refusal to participate or withdrawal will not affect any services the subject is receiving or will receive at the institution in which the research is being conducted.

If you have any questions, please contact Dr. Stanford or me at (408) 924-2480.

APPENDIX D

Approval by Director of Migrant Education Program

MIGRANT EDUCATION - REGION XI

DR. PAUL NAVA, Director
FIDELIA A. MORENO, Assistant Director
PAJARO VALLEY UNIFIED SCHOOL DISTRICT
440-B Arthur Road
Watsonville, CA 95076
(408) 728-6213

March 15, 1990

Dr. Virgil Parsons
Chair, Department of Nursing
San Jose State University
1 Washington Square
San Jose, CA 95192-0057

Dear Sir,

As Director of the Migrant Education Program, Region XI, I wish to inform you of my intent to cooperate with Mary Ellen Good in her research study.

Mary Ellen has my permission to collect copies of health exam records of migrant students attending kindergarten registration for school attendance in the Fall of 1990. She plans to solicit parentatl consent to duplicate children's health exam records on the site of registration in the Pajaro Valley Unified School District. She plans to collect 100-130 records from families participating in this event.

I support Mary Ellen in this study because the information it will produce will better enable us to plan health services for both pre-school and kindergarten children. We are currently interested in serving this population and would benefit from the identification of their health needs. The research findings will also provide us with data to plan health education for migrant families so that their children can achieve optimal health. The goal of our program is to keep students in school; we recognize that if a child is not healthy, education is affected. The information generated by this study will be useful both at a local and state level.

Mary Ellen has been employed by the Pajaro Valley Unified School District since November, 1988 as the Health Coordinator of the Migrant Education Program. She demonstrates the ability to handle confidential information and communicates effectively in both English and Spanish.

I look forward to the completion of this research and will assist Mary Ellen in achieving her goal to improve the health status of migrant children. If you need additional information, I can be reached at (408) 728-6213.

Sincerely,

Paul Nava

Dr. Paul Nava, Director
Migrant Education
Region XI

APPENDIX E

Consent Letter (English/Spanish)

SJSU SAN JOSE STATE UNIVERSITY

A member of the California State University

School of the Applied Arts and Sciences • Department of Nursing
One Washington Square • San José California 95192 0057 • 408 924 3130

AGREEMENT TO PARTICIPATE IN A STUDY OF THE HEALTH STATUS OF MIGRANT KINDERGARTEN STUDENTS AT TIME OF SCHOOL ENTRY

San Jose State University

being conducted by Mary Ellen Good, R.N., M.P.H.

I understand that I am being asked to participate in a research study. My participation in this study on the health status of migrant kindergarten students at time of school entry will involve me allowing my child's health exam record taken at kindergarten registration to be copied. It will take no more than five minutes of my time. The results of this study should furthur the understanding of health needs of migrant children as they enter school and the identification of measures to improve their health status.

My consent is being given voluntarily, without being coerced. I may decline to answer any question or questions or, indeed may withdraw from the study at any time without predjudice to my relations with the Migrant Education Program, to my child's status in school, or to any relationship I or my child may have with San Jose State University.

I understand there is no risk to participating and there is no direct benefit except for having participated in a research study. I will also not receive any compensation for my participation. Results of this study will be available upon request.

The information I provide will remain confidential. This information will be used for scientific purposes only, and wil be published in a form in which I can never be identified as an individual.

Any questions I might have about my participation in this study will be answered by Mary Ellen Good, (408) 728-6213. Any complaints about the research procedures may be presented to Dr. Virgil Parsons, Chair of the Nursing Department at San Jose State University, (408) 924-3130. For questions or complaints about research subject's rights, I may contact Serena Stanford, Ph. D., Associated Academic Vice Presicent for Graduate Studies and Research, (408) 924-2480.

My permission to allow my child's health exam record to be copied acknowkedges my willingness to participate in this study. I understand that I can keep this letter of information.

SJSU SAN JOSE STATE UNIVERSITY

A campus of the California State University

School of the Applied Arts and Sciences • *Department of Nursing*
One Washington Square • San José California 95192-0057 • 408 924-3130

ACUERDO PARA PARTICIPAR EN UN ESTUDIO SOBRE LA SALUD DE ESTUDIANTES DEL KINDERGARTEN AL TIMEPO DE ENTRAR A LA ESCUELA

Universidad Estatal de San José

siendo conducida por Mary Ellen Good, R.N., M.P.H.

Yo entiendo que se me pide participar en un estudio. Mi participación en este estudio sobre la salud de estudiantes migrantes entrando al kindergarten al principio del año escolar requiere que yo permita que se duplique una copia del archivo del examen de salud de mi hijo/a al registrarse para kindergarten. No ocupará mas de 5 minutos de mi tiempo. Los resultados de este estudio ayudará al entendimiento de las necesidades de salud de los niños migrantes cuando empiezen la escuela y a identificar las medidas para mejorar el estado de salud de ellos.

Mi consentimiento se dá voluntariamente, sin ser obligada. Yo puedo negarme a contestar en cualquier momento sin prejuicio a mis relaciones con el Programa de Educación Migrante, a la posición de mi hijo/a en la escuela o con cualquier relación que mi hijo/a y yo tengamos con la Universidad Estatal de San José.

Yo comprendo que no existe un riesgo en participar y que no existe beneficio directo excepto haber participado en un estudio. También estoy enterado/a que no recibiré ninguna recompensa por mi participación. Los resultados de este estudio serán disponibles al pedirlos.

La información que doy será confidencial. Esta información será utilizada para propósitos científicos solamente, y será publicada en una forma en cual yo nunca podría ser identificada como un individuo.

Cualquier pregunta que yo pueda tener sobre mi participación en este estudio, será contestada por Mary E. Good, (408) 728-6213. Cualquier queja tocante a los procedimientos del estudio, puede ser presentada al Dr. Virgil Parsons, Chair of the Nursing Department at San Jose State University, (408) 924-3130. Para preguntas o quejas sobre los derechos de personas participando en este estudio, puedo comunicarme con Serena Stanford, Ph.D., Associated Academic Vice President for Graduate Studies and Research, (408) 924-2480.

Al conceder mi permiso para que se duplique el archivo del examen de salud de mi hijo/a, se reconoce mi participación voluntaria en este estudio. Reconozco que puedo quedarme con esta carta de informacion.

Appendix F

Consent for Release of Medical Information Form

MIGRANT EDUCATION - REGION XI

DR. PAUL NAVA, Director
FIDELIA A. MORENO, Assistant Director
PAJARO VALLEY UNIFIED SCHOOL DISTRICT
440-B Arthur Road
Watsonville, CA 95076
(408) 728-6213

REGION XI

RELEASE OF MEDICAL INFORMATION

SALUD PARA LA GENTE
NAME OF PHYSICIAN

PATIENT NAME

ADDRESS

DATE OF BIRTH

CITY/STATE ZIP

I hereby authorize you to release all medical records in your possession to The Migrant Education - Health Program.

Yo autorizo que den toda la información médica en su posesión al Programa de Salud de la Educación Migrante.

Thank you.

Signature/Firma

PLEASE SEND RECORDS AS SOON AS POSSIBLE:
MIGRANT EDUCATION - HEALTH PROGRAM
440-B Arthur Road
Watsonville, CA 95076