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ABSTRACT

This study reports on the needs of young children in Idaho, relating to: (1) health and related factors during early childhood, (2) heredity and environmental factors which influence the child's development. Initial data were drawn from already existing studies and sources. Missing data were collected in face-to-face interviews with 2 percent of the families in Idaho having children between the ages of 0 and 6. Additional data were collected from both public and private vendors of service to help complete the needs picture. Vendors of health services were contacted, and the proportion of need they were meeting was calculated. Health factors including hazardous environments, chronic illnesses, acute illnesses, dental health, and nutrition were assessed. Traditional child development factors including cognitive development, social development, and special needs were assessed. Programs attempting to meet these needs were reviewed. The vendors of such services were interviewed, and estimates of the unmet needs were established. The programs reviewed included preschools, kindergartens, and day care centers. Results are summarized in profile form. (Author)

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STATUS OF YOUNG CHILDREN IN THE STATE OF IDAHO

1974
Volume 2

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A portion of this report is submitted as required

to

The State Economic Opportunity Office

and to

The Office of Child Development, Region X, DHEW

RS 007 675

ERRATA SHEET

THE STATUS OF YOUNG CHILDREN IN IDAHO
1974

Page 47, Paragraph 2.

However, careful consideration must be given to the impact such screening could have on the families and the personal development of individuals identified as being at risk.

Page 101, Paragraph 1.

Add "care" to group day.

Page 136, Paragraph 4.

Change last sentence to read: "A copy of the questionnaire used in the survey is available upon request."

Page 137, Paragraph 2.

Change sentence 3 to read: "The universe of women with children under six years of age in Idaho is 48,790 (Table 32)."

Note: This changes the denominator and numerator in the last part of the reliability equations, however, the final percentage error is not changed.

Page 138, Paragraph 2.

Tables 19-32

Page 138, Paragraph 3.

Table 32

Page 144.

Percentage of families who feel that activities prevent them from spending sufficient time with their children. Region III should read 38 percent.

DEDICATED TO DOCTOR JOHN R. MARKS . . . .

" . . A society or culture can successfully survive only if it plans ahead. Children not only inherit our environment, they shape it. Broad concepts of human existence must either completely accept or reject the doctrine of "survival of the fittest" and in acceptance must define both "survival" and "fittest" and must then construct a methodology of implementation. Many of us believe this is incompatible with human value concepts and, therefore, in rejection of that doctrine feel that societal acceptance of the "unfit" must be total, responsible and realistic.

Solutions, to many, have such global implications that each individual turns away in despair. Never forget, however, that this world is composed entirely of individuals and any change or problem solving has to start with the individual. Each person is an important part of the whole and the whole is always a sum of its parts..."

John R. Marks, M.D.
1968

We have no tradition for living with each other as equals, where all members of society are treated with full respect regardless of individual differences.

Equality is no longer simply an ideal; it is an established fact. Today advances in knowledge cause changes that thrust deep into tradition. Changes in motivation, coupled with an understanding of dynamics and the

ability to free children from obstacles to their full mental and moral development, is foreseen as an essential move that will elevate children to the status of full-fledged citizens, recognizing their rights and responsibilities and treating them as complete human beings.

It was, in part, this philosophy which lead the late Doctor John Marks to dedicate most of his life to solving the dilemna of our time - that we are not yet prepared to live with each other as equals. It is to this end, that we dedicate this series of technical volumes to him; that they in some small way, will continue to carry the torch of equality through social changes allowing for full moral and mental development of Idaho's children. We join with him in spirit and hope that some day man will no longer find it necessary to eliminate poverty, hunger, disease and handicapping.....and that there will evolve a world community united in a true brotherhood of man.

* * * * * * * * * * *

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PREFACE

The following three chapters represents the second volume of a comprehensive study of young children in the State of Idaho. This portion of the report is again ecological in nature, i.e. it attempts to identify relevant environmental factors which have impact upon the development of young children. Knowledge of the relevant factors, the time of their occurrence and their potential impact are necessary elements in planning optimal environments for early intervention and prevention strategies. To determine the relevant environmental factors and potential impact of programmatic strategies, the literature has been reviewed extensively. This review is included throughout the volume.

In order to gain information concerning the needs of young children in the State of Idaho, three primary activities were undertaken and their results reported in this volume. The first activity consisted of a review of all available studies concerning needs of children in Idaho. Information concerning certain needs had already been gathered by the Department of Environmental and Community Services, Department of Education, Comprehensive Health Planning, etc.

The second activity consisted of a survey designed to identify existing services and resources to children, youth and families in Idaho. We frequently refer to this survey as the Vendor Survey. Field workers located in three regions of the State interviewed managerial personnel currently providing services under the sponsorship of both public and private agencies.

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The third activity is usually referred to as the Consumer Survey. The study randomly sampled two percent of the families in Idaho with children under six years of age. Nine hundred sixty-four families were involved. They were asked, in a face-to-face interview , questions concerning their child's health, immunizations, availability of medical care, child :, nutrition, child development programs they desired and demographic variables. Further details concerning this survey precede the appendices.

The text of Volume II attempts to identify environmental factors producing less than desirable outcomes and integrates this information with the needs of young children in Idaho relating to these factors. It then attempts to review and determine programmatic alternatives to alleviate the needs as elucidated by the literature review.

It is hoped that the information contained in this volume will in some small way contribute to the enhancement of the quality of life for Idaho's children.

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CHAPTER I

HEALTH AND RELATED FACTORS DURING EARLY CHILDHOOD

HAZARDOUS ENVIRONMENTS

From before birth to adulthood, human beings are continually exposed to potentially hazardous environmental situations. Children have little experience in handling hazardous environments and are subject to new dangers at each stage in their development. Toddlers climb, push, and shove while exploring their environment and become fascinated by shiny skillets, pans, and percolaters. This attraction often directly results in serious burns. Many large cities report incidents where children have managed to climb to window ledges and then fall to the pavement below. As children mature and enter the preschool age, an increasing number and type of potential dangers are encountered. During this period, falls, drownings, motor vehicle accidents, burns, and poisonings are common. When a child nears the end of his preschool years, accidents with bicycles and fire-arms tend to increase. Of the acute conditions affecting children, accidents and injuries rank high as causes of morbidity and mortality.

Nationwide accidents rank first as a cause of death for children ages one to four. Figure 1 shows the five major causes of death in the United States during 1967. The Figure contains information enabling one to contrast the causes according to ethnic status (Profiles of Children, 1970).

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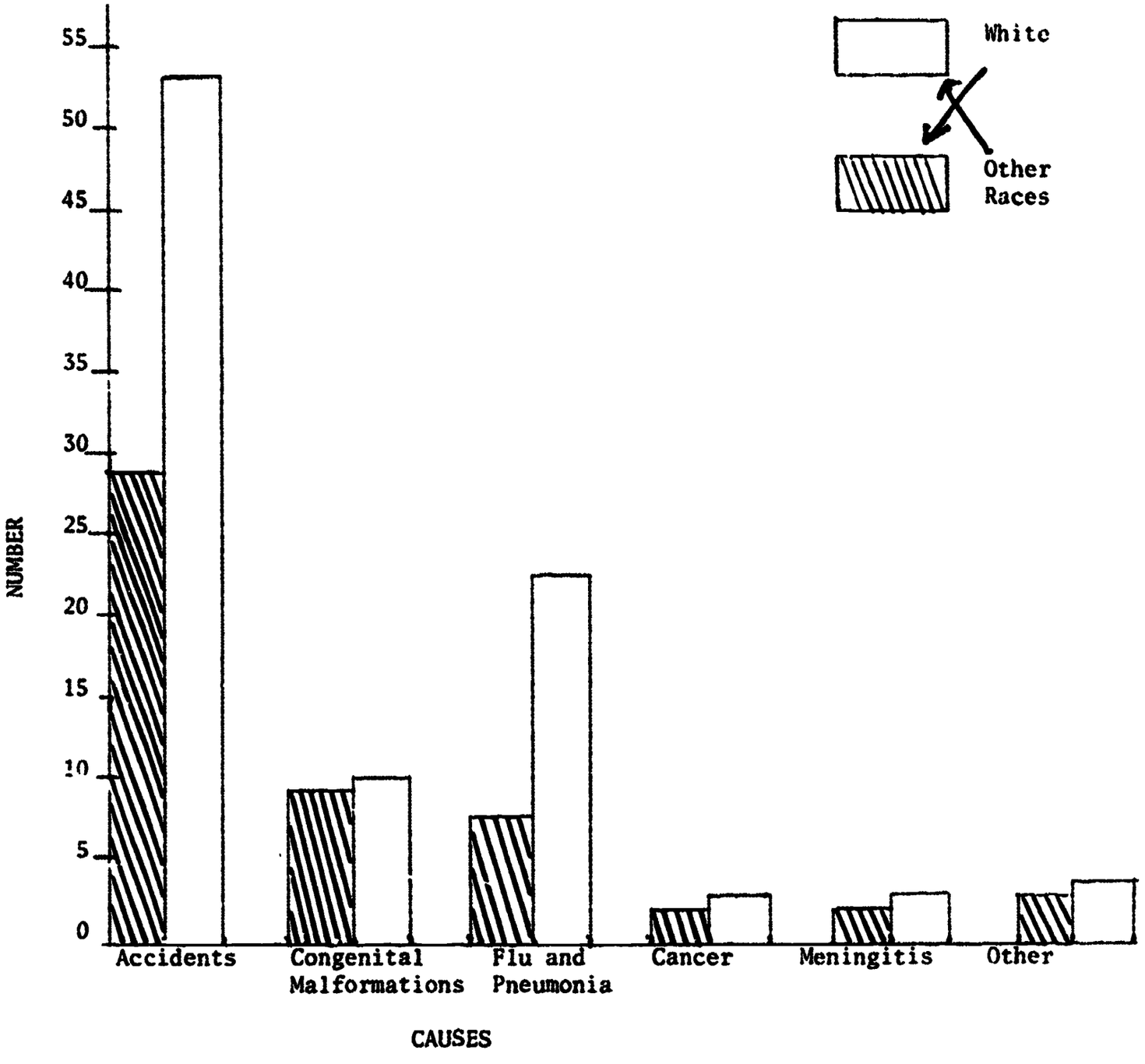

FIGURE 1: Death per 100,000 Population , age 1-4 Years by the Five Leading Causes and by Race. U.S. 1967

In 1971 Idaho ranked 8th in the nation in deaths per one hundred thousand population. Idaho had an accidental death rate index of 85.8. Alaska was the highest state with 137.0 rate, while Rhode Island was the lowest state with a 33.3 death rate (Accident Facts, 1972).

Nationally, accidental deaths among young children ages one through four years can be classifed by cause. In 1966 motor vehicle accidents accounted for 33 percent of the deaths; fires and explosions accounted for 22 percent; drownings 14 percent; inhalation and ingestion 13 percent; falls and other accidents 12 percent; and poisonings 6 percent (Profiles of Children, 1970).

The leading causes of death to Idaho children between the ages of one and four are presented in Figure 2. As can be observed, accidents account for approximately 56 percent of the deaths to Idaho children within this age range. The deaths of young children in Idaho could be broken into several categories according to their place of occurrence. Nineteen percent were attributable to motor vehicle accidents, 16 percent to public non-motor vehicle situations, and the remaining 64 percent occurred at home. At home accidental deaths consisted of specific causes such as drowning, poisoning by gas or gas vapors, falls, fires, suffocation, fire-arms, and other unspecified accidents.

Idaho vehicle traffic accident deaths are available for the year 1972. During the year 1972, eleven children between the ages of 0-4 were killed in the State. During that same period of time 451 children were injured as a result of automotive accidents. This rate is more than one per day for the State of Idaho (Garrard, Parke, 1973).

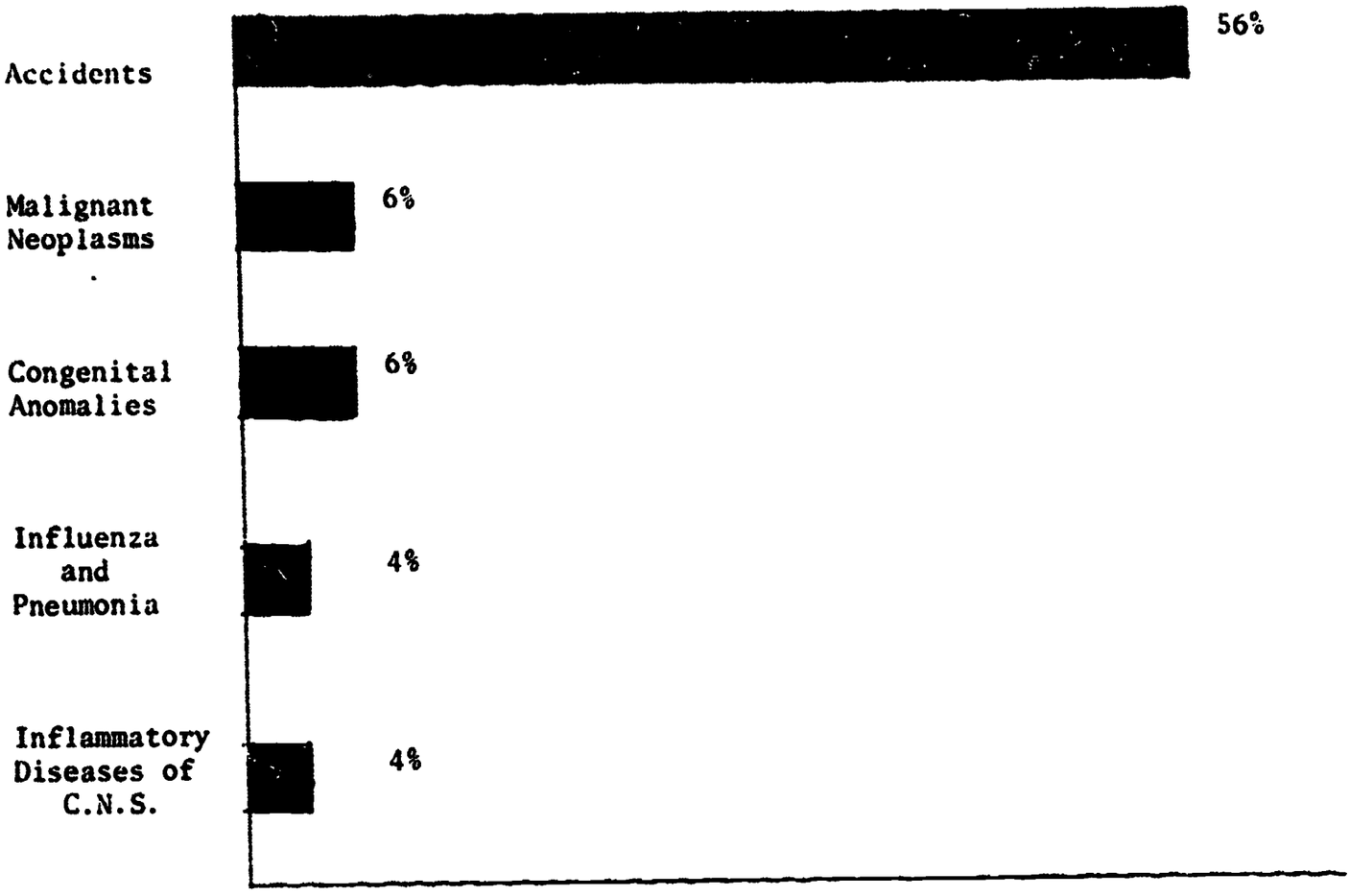

FIGURE 2: Leading causes of Death to Idaho Children, ages 1-4 years. 1970
Originally published in Idaho's Critical Health Indices, 1972.

Each year about one out of every three children require medical attention for an accidental injury. Nationally about 19 million children ages 0-15, are injured severely enough each year to seek medical care. Of these injuries about 67 percent occur in the area of the child's home. Another 13 percent occur on streets and highways and involve automobiles. The remaining 20 percent occurs at a variety of different places including kindergartens and preschools (Profiles of Children, 1970).

Figure 3 is the estimated number of accidental injuries to Idaho children from 0 through 4 years of age. It can be observed that approximately 73 percent of the accidents occur at home. The estimates in Figure 3 can be considered conservative because they would indicate that only 19 percent of the children in Idaho are injured annually. If one uses the National figure that about one-third of the children in this age group are injured annually, we would estimate that about 21,258 Idaho children are injured annually and that 15,476 of these injuries occur in the home. Several methods of estimating injuries are possible. Those based upon National percentages, using one-third as the universe are probably the best estimates.

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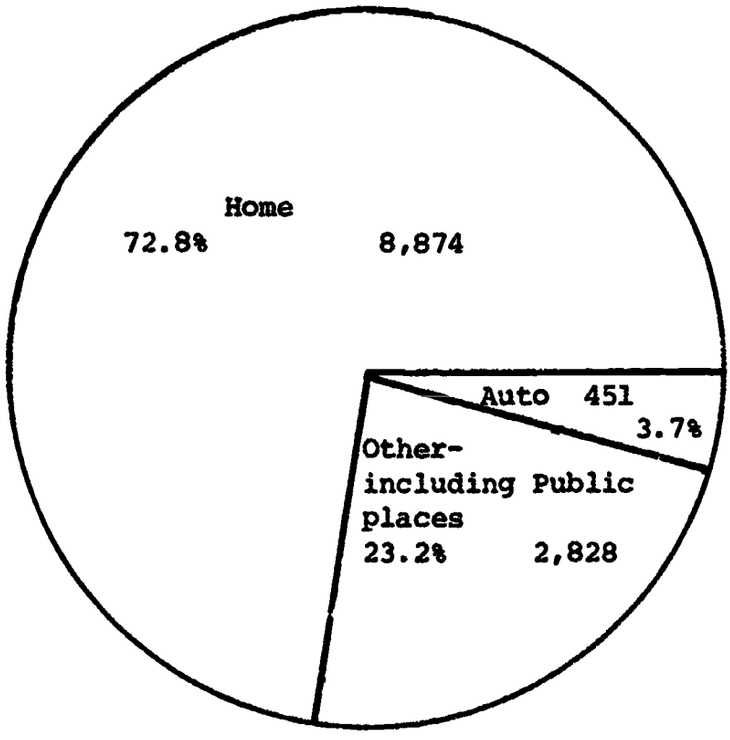

FIGURE 3: Estimated accidental injuries to children in Idaho, 0 through 4 years of age. Estimates based upon National figures and actual Idaho automotive injuries. National figures taken from Illness Among Children, DHEW, Children's Bureau, 1963.

The prevention of childhood accidents presents a major problem and comprises a challenge to the field of preventive measures. As already noted accidents are the leading cause of death in all ages of childhood after the first year. Their relative importance has steadily increased as other health problems came under greater control. Nelson (1969) has suggested a number of precautions that can be used to prevent accidents. During the first year of life the infant can often roll, creep, or pull himself erect. During this time he is also helpless in water and can place anything in his mouth. For the first year Nelson suggested precautions such as keeping the crib sides up; keeping small objects and harmful substances out of reach; not leaving the child in the tub alone; and not placing him on tables from which he could fall.

During the second year of life the child can assume an erect posture and generally go up and down stairs, has a great curiosity, puts almost everything in his mouth, and is probably still somewhat helpless in water. For the second year of life Nelson suggests keeping screens on windows; placing gates at the top of stairs; covering unused electirical outlets and keeping electrical cords out of reach; keeping the child within an enclosed space when out of doors and in the company of adults; keeping machines and household poisons and small objects out of sight and reach; keeping handles of pots and pans on the stove out of reach, especially those which contain hot foods and also keeping them away from the edge of tables. The child should also be protected from water in tubs and pools.

During the two to four year age range children are able to open doors; to run and climb; to ride tricycles; to investigate closets and drawers; to play with mechnical gadgets; and to throw balls

and other objects. During this period of time Nelson suggests keeping drawers locked when there is danger of falls; placing screens or guards on the windows; teaching the child to watch for automobiles in the driveway and the street; keeping fire arms locked up; keeping knives and electrical equipment out of reach; teaching about the risk of throwing sharp objects; and the dangers of following balls into the street.

A survey sponsored by the National Safety Council found that playground equipment such as merry-go-rounds, swings, and jungle gyms account for most injuries to the 2 - 7 year old child. They warned that any toy may be unsafe if given to the wrong age child. They also found that age five appears to be the most vulnerable single year for children to receive toy or play injuries (Safe Toys for Your Child, 1971).

A door to door survey of two percent of the Idaho families having preschool children revealed potential hazards. The surveyors found that 22 percent of the homes visited had obvious exterior hazards. the hazards included ditches, canals, busy streets, railroad tracks, lack of sidewalks, electric fencing, and farm equipment. At least 8 percent of the homes revealed readily observable interior hazards. The hazards most frequently observed included stairs, unscreened upstairs windows, and open gun racks.

Three percent of the homes were adjacent to commercial or factory operations which represented potential hazards. The commercial operations included farm equipment dealers, construction, air and water pollution, and road construction. The interviewers found that three percent of the children were suffering from accidental injuries at the

time of their visit. Two-thirds of the accident victims were under medical treatment while the remaining one-third had not received medical care.

It is interesting to note that in general almost 73 percent of the accidents occur at home; the very place where parents are able to engineer a safer environment for the child. Because of this it appears as though accident prevention in childhood must be based upon the parents understanding of typical behaviors and interests of the children at various stages in their development. With this type of understanding dangerous situations can be avoided and parents can make the appropriate environmental manipulations necessary for accident prevention.

CHRONIC ILLNESSES

Despite progress in the control of acute diseases through improved environmental hygiene, social and educational circumstances, antibiotics, and immunization agents there has been little progress in the prevention or treatment of chronic diseases. The American Academy of Pediatrics (1970) reported that there is a serious obstacle to identifying health problems in the preschool child. They indicated that only a small portion of the preschool population receives continuous health care and supervision from infancy to school age. They indicated that early identification of chronic conditions was difficult because in our society children are not brought together regularly in groups until school age. This barrier makes it almost impossible to conduct screening

examinations on this population at an early age.

One approach to the problem is a longitudinal study of the many illnesses contracted by a group of children. Valadian, Stuart and Reed (1961) conducted such a study by recording the illnesses of 134 children from birth to 18 years of age. They found that the total number of illnesses among the preschool years exceeded that of any other age. This appeared to hold true for both boys and girls. They found that 47 of their subjects had their maximum illness during the preschool years; 22 of the subjects had their maximum illness during the first two years of infancy; and 21 had their maximum illness during the early school years.

A second method consists of cross-sectional studies. The U.S. National Health Survey has provided us with the most comprehensive cross-section data yet available in this Country on morbidity. With regard to children, it provided a broad statistical view of the overall problems concerning children's illnesses and to a lesser extent a picture of the care given such conditions. There has been an increased tendency to deal with children's illnesses on a fragmented basis by conducting research and planning programs in terms of specific diseases and conditions. The National Health Survey data provides an opportunity to see the individual pieces as part of a whole. The Survey defined a chronic condition by using two criteria. They were as follows: Chronic conditions were described in terms of a check-list consisting of the names of such conditions or a check-list of impairments which consisted of descriptors identifying the conditions. Secondly it stated that the condition must have been observed more than three months before the week of the interview.

The National Health Survey and our Idaho survey used a household interviewer method. Unfortunately, the accuracy of responses using this method is somewhat questionable when reporting chronic conditions. The broader descriptions, therefore, may be considered to have greater validity than reports concerning specific chronic diseases.

The National Health Survey found that the prevalence of chronic conditions among children increased with age (Figure 4). The rate was lowest, 169.3 per thousand population for the age group 0-4 and highest, 309.3, for the age group 15-16. For the 0-4 age group they found that 34.5 percent of the chronic conditions consisted of allergies; 16.7 percent consisted of respiratory problems; 12.8 percent consisted of paralysis and other orthopedic impairments and the remaining 36 percent consisted of other unspecified conditions (Schiffer and Hunt, 1963). They found with respect to allergies and respiratory diseases (the two leading chronic conditions) that the rates for children living in rural, non-farm areas were higher than those living in urban areas - but that the rates for urban areas were considerably higher than those for farm areas. By combining urban and rural non-farm areas they were able to obtain an estimated rate per thousand children. They found that farm children had about 25 per thousand fewer cases of allergies and that they had about eight per thousand fewer cases of respiratory diseases. The researchers questioned their results indicating that they might reflect socio-economic and cultural factors rather than true differences. The only way true differences could be determined would be by the use of complete clinical examinations resulting in diagnoses of chronic conditions.

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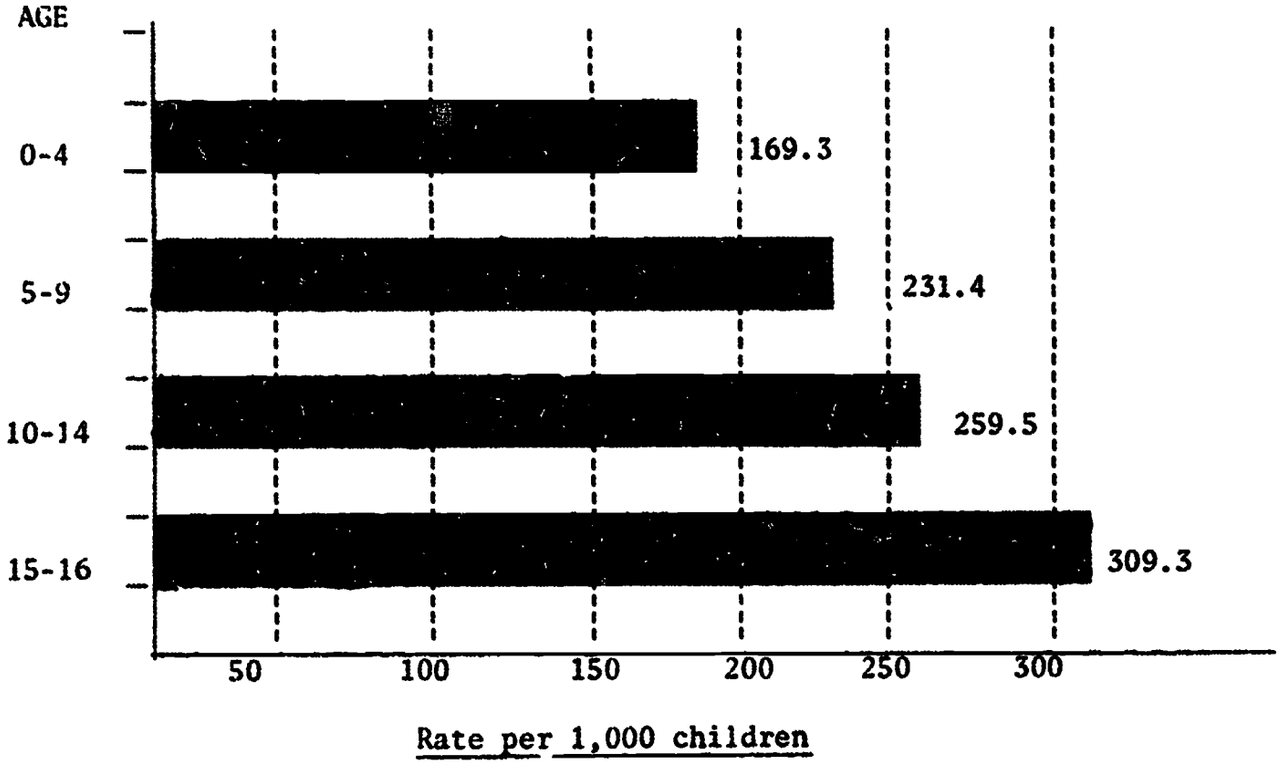

Figure 4: The Rate of Chronic Conditions Reported among Children under 17. Source: National Health Survey, July 1959 - June 1961.

The Idaho Child Development Survey utilized a check list of descriptors in order to identify possible chronic conditions. Results from the survey indicate a chronic condition prevalency of about 110.6 per thousand children. This is somewhat lower than the National incidence figure reported by the National Health Survey (a rate of 169.3 per thousand population for the age group 0-4). These reported findings for Idaho do appear to be consistent with the National Health Survey findings when one takes into consideration the ruralness of the State. The limitations which applied to the National Health Survey also apply to the household interview survey done by the Idaho Office of Child Development.

With reference to chronic conditions, during the interview the respondent was asked if the condition was being treated or was under medical supervision. Thirty-two percent of the respondents indicated that the chronic conditions at the time of the interview were not under medical treatment. This finding implies a certain amount of deficiency regarding treatment of chronic conditions contracted by Idaho children.

ACUTE ILLNESSES

It is difficult to obtain precise data concerning the true incidence of acute illnesses in childhood. Many children who are only mildly ill or even moderately ill may never come to the attention of physicians. In addition to this many physicians do not report all communicable diseases they see in practice. Surveys also have their limitations. Those completed through household interviews are influenced by such factors as the respondents knowledge, recall ability, and inclination to answer. Finally,variations among physicians in accuracy of

diagnosis also effects the validity of reporting.

In spite of all the various problems involved in getting an accurate incidence of acute illness, household interviews do provide information that can reveal trends. The National Health Survey Act of 1956 authorized a continuing survey of the United States to secure information concerning health conditions in the general population. The National Health Survey (1963) defined acute conditions as a "condition that lasts less than three months; or was medically attended, or restricted to patient's usual activity for one day or more." The annual incidence of acute conditions in both children and adults is shown below in Figure 5. As can be observed from Figure 5 children have more acute illnesses than adults. Figure 6, below, pictorially represents the frequency of occurrence of acute conditions afflicting children. As can be observed from Figure 6, respiratory conditions, infections and parasites consist of the two major categories under which most acute conditions fall. Figure 6 has been constructed so that accidents and injuries are not included in the total. If they were to be included they would account for about 11 percent of the total acute conditions. It should be noted that the data used to construct Figure 6 was based upon children under 15 years of age.

Acute infections of the respiratory tract are the most frequent occurring cause of illness in infancy (American Academy of Pediatrics, 1970). Most of the upper respiratory infections are of a viral origin and the minority are caused by bacteria. The Academy also reported that unfortunately, on clinical grounds alone, distinctions can often not be made. Cultures are necessary to establish a bacterial origin

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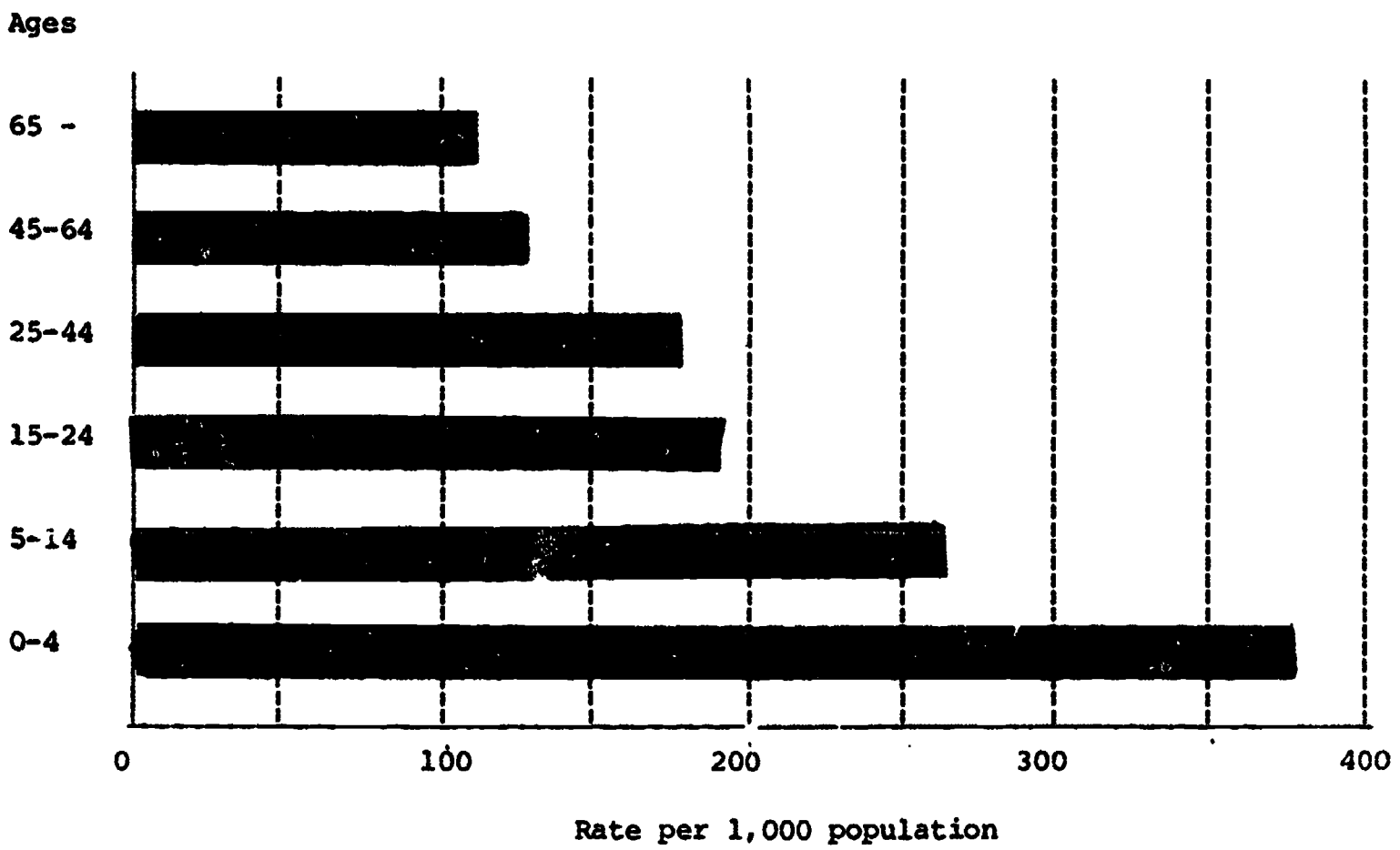

Figure 5: Acute Illnesses by age group (Children's Bureau Publication #405).

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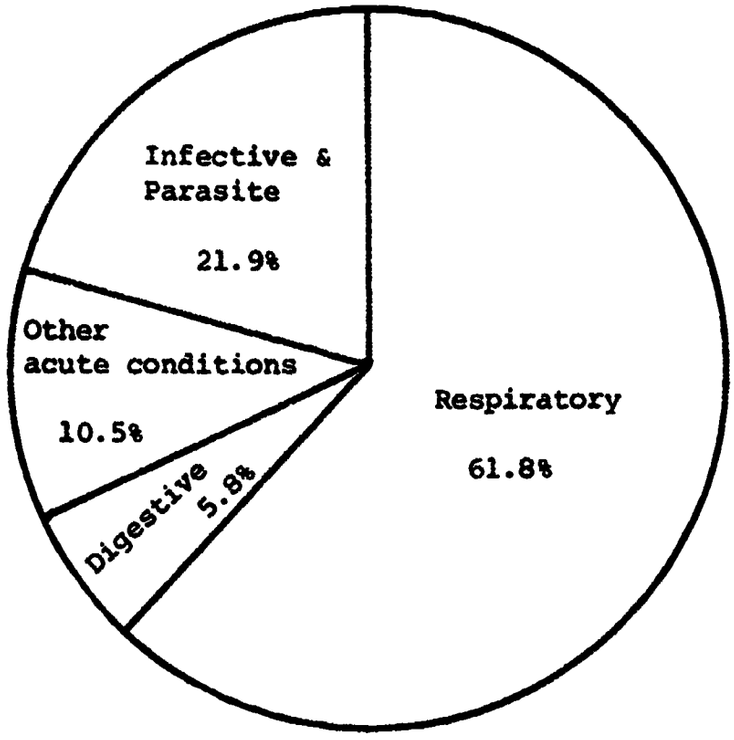

Figure 6: Conditions accounting for Acute Illnesses among Children under 15. Figures based upon U.S. National Health Survey Data Year ending June 30, 1961.

and many physicians do not fully utilize or recognize the importance of cultures. According to the Academy the consequences of inappropriate identification lead to excessive financial cost to the family and sometimes leads to the use of inappropriate drugs.

Otitis Media is the most common complication of upper respiratory infection. Frequently the child is not seen early enough to assure a rapid cure and the parents often do not cooperate in follow-up until the infection is gone. This type of care sets the scene for potential permanent hearing loss or mastoiditis.

Pneumonia is not infrequently a complication of simple infections that begin in the upper air passages. In the past pneumonia led to death or occassionally permanent impairment, however, with the advent of antibiotics the hazards of pneumonia have been reduced. Acute bacterial meningitis is another infection of the upper respiratory tract. Many children progress from the untreated or inadequatley treated respiratory infection into meningitis and often by the time the child reaches a physician his life is threatened or permanent injury to his brain has occurred.

Pyodermia is another example of a simple condition which may have serious consequences according to the American Council of Pediatrics (1970). If untreated it can lead to sepsis, purulent arthritis, osteomyelitis, perhaps acute nephritis, and other complications from organisms initially limited to the local lesions.

Acute infantile diarrhea is another common, but one of the more dangerous, diseases for very young children. Many infants are brought for medical attention only after the diarrhea has become life threatening. If not treated it may lead to progressive dehydration, acidosis, shock, and electrolyte imbalance. At the present time treatment of diarrhea

has improved and in recent years few children with this condition die after being admitted to the hospital. Most of the above illnesses occur during the first two years of the child's life.

From about 2 to 6 years of age acute illnesses are less frequent, partly because the child has established immunity against many organisms he encountered during the first two years. Certain diseases can be immunized against before the child has contracted them Diptheria, pertussis and tetanus immunizations are commonly referred to as the DPT shots. Polio is another disease which now can be immunized against by using oral Sabin trivalent or oral Sabin monovalent serum. Rubella, rubeola, and mumps also now have vaccines which provide protection against the disease.

The Idaho Department of Environmental and Community Services recommends that the DPT shots be given at 2 months, 4 months, 6 months, 18 months, and the last one between 4 and 6 years of age. Poliomyelitis oral vaccine is usually administered at 2 months, 4 months, and then depending upon the type, 3 or 4 more booster shots are needed. The rubeola and mumps can be administered from one year on and rubella is usually administered between one year to six years of age.

The Idaho Office of Child Development's interviews with parents at home found that in general children during the first year of life were fairly well up-to-date with their immunizations, however, the older children, those from two through six years of age, who were eligible for more boosters generally had not received them. Table I below gives the type of immunization and the immunized percentage of those eligible at the various booster ages. As can be observed only 23 percent of those

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TABLE 1

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Percent of Children Current in their Immunization Status by Type of Immunization (1972-73).

		2 mos.	4 mos.	6 mos.	12 mos.	16-18 mos.	4 years	6 years
DPT	Current	94	92	89		68	19	
	Not Current	5	7	9		30	80	
	Didn't Know	1	1	2		2	1	
POLIOMYELITIS*	Current	88	86			67		9
	Not Current	10	11			28		88
	Didn't Know	2	3			5		3
RUBEOLA	Current				63			
	Not Current				36			
	Didn't Know				1			
RUBELLA	Current				63			
	Not Current				36			
	Didn't Know				1			
MUMPS	Current				34			
	Not Current				65			
	Didn't Know				1			

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*Trivalent and monovalent have different immunization schedules. Most respondents could not distinguish between the two, hence the 6 months figures were not calculated for monovalent and responses were summed at common points in the schedule.

eligible for mumps shots had received them; only 54 percent of those eligible for rubella shots had received the immunization; and only 63 percent of those eligible for rubeola had been immunized. For both polio and DPT, the percentage receiving immunizations continued to drop off until the last boosters around 4 to 6 years of age showing that only 17 to 25 percent of those eligible were current in their immunization status.

Parents were queried concerning where they obtained their child's immunizations. Fifty-seven percent of the parents responded that they obtained their child's immunization through private physicians; 18 percent indicated that they received their child's immunization through public health; and 20 percent indicated that they received them through both resources; one percent indicated that they received them through other mechanisms; and four percent had no immunization record at all. When parents were queried concerning where they might obtain immunizations when needed, 23 percent indicated that they could be obtained through a private physician; 71 percent indicated the Public Health Department; 5 percent indicated that they did not know; and one percent gave another type of vendor. Hence it would appear as though public health is known as a vendor of immunizations, however, its utilization is considerably lower than that of private health vendors.

During the Prenatal, Perinatal and Postnatal Survey conducted by medical students, physicians frequently commented that the public vending of immunization could be a liability rather than an asset. They indicated that parents with children needing immunizations would frequently say that they would go to public health to obtain them. Several physicians indicated that to their knowledge, obtaining the immunizations from public health by the parents was never achieved.

Other countries have approached the problem of health care for preschool children in a uniform comprehensive manner. In Europe and especially in the United Kingdom and Sweden there is a general belief that early casefinding must depend upon a universal type of screening including the developmental process. They have initiated a process whereby children are carefully evaluated at regular intervals through the first 18 months of life for any congenital or chronic disability. After this, assessments are repeated annually. On each of these occasion a comprehensive developmental examination is carried out and an attempt is made to determine whether or not the child is making the expected progress. Management programs of this type whether vended by the public and/or by the private sector hold forth the possibility of continued comprehensive care for preschool children.

DENTAL HEALTH

The most common physical defect found in children is dental carries. The volume of dental care given to children has been used as an important gauge of the attention paid to the child's overall health problems. With this in mind, the National Health Survey during the period of July 1957 to June 1958, used household interviews to obtain data concerning dental care throughout the United States. Additional information was also solicited by the National Health Survey during the fiscal year 1963.

The data obtained from the National Health Survey showed a great lag in providing adequate dental care for children. They found that half of the children under the age of 15 in the United States (50.2 percent) had never been to a dentist. They found that even a smaller proportion of the younger group (0-5 years of age) had ever visited a dentist.

The adequacy of dental care seems to have some correlates or associated factors. According to the National Health Survey, rural children are twice as likely not to visit a dentist as urban children; more children living in the South had never been to a dentist than children living in other regions; more non-white children had never been to visit a dentist; about sixty percent of the children in low-income families had never been to a dentist; children who came from families where the father was better educated were also more likely to have been to a dentist sometime in their life. They did find, however, even if the family head had gone to college, 81.8 percent of the children under 5 years of age had

never been to a dentist. Figure I shows the time interval since the last dental visit. This Figure is a composite for all the regions and factors in the United States. It essentially provides us a National profile.

Tooth decay occurs most frequently in the deep grooves of the teeth, between the teeth, or along the gum lines. The cause of decay rests in the fact that food and bacteria collect frequently in these areas and form a sticky sponge-like layer called dental plaque. When sugars or sweets are eaten the plaque soaks up the sugar and holds it close to the teeth. Bacteria (streptococci) then changes the sugar into acid and the acid dissolves the enamel. This results in tooth decay.

Preventative procedures include the disturbing of the bacteria or the removal of the dental plaque. Disturbing the bacteria or limiting the sugar intake which restricts bacterial growth will promote dental health. Fluoridation of water or the use of topic fluoride to make the enamel stronger is another way of promoting dental health. Stronger enamel usually results in less decay. For children, snacks that will strengthen the teeth and make them last longer are recommended. Such snacks have the effect of either disturbing the bacteria or lowering the sugar intake. Cabbage wedges, carrots, celery, lettuce wedges, other vegetables and popcorn are recommended to help disturb the bacteria and clean the teeth. Snacks which really help build up the plaque and provide additional sugar to enhance the decay include sweet fruits and juices, chocolate milk, chocolate, carbonated drinks, other sweet drinks, honey, jellies and jams, cakes and cookies, candies, pies, crackers, etc.

The Home Interviewer Survey conducted throughout Idaho found that 52 percent of the parents of children between three and six

years of age indicated that their child had not visited a dentist within the last year.

The surveyors, however, also found that two percent of the children had dental problems which at the time of the visit had not been treated, but had been identified by the parents. They also found that one percent of the children had dental problems that were under the care of a dentist. It would appear as though in Idaho, visits to the dentist are much more frequent and likely to occur than the National profile indicates.

The AFDC screening, which provides an early periodic screening for children (ages 0-6) found children with dental problems ranging from five percent in some communities to close to 90 percent in other communities.

Typical examples are as follows: in Idaho Falls during February 1973 - 64 children (3-6 years of age) were screened. Of these children, 55 were referred for dental problems. During January 1973, 66 children were screened in the Pocatello area between the ages of 24 months and 72 months - of these children 39 were referred for dental problems. During March 1973. 42 children were screened in the Nampa area. They ranged in age from 24 months to 72 months. This screening found only two children in need of dental services. The screening exam usually looks for carries or the need for extraction. Hence the need for dental care varies widely within the State depending upon the resources and the extent of care being provided within each community.

NUTRITION

Research concerning the relationship of nutrition to intelligence and learning has expanded over the last decade and a half. When investigations of this type were undertaken they inevitably led to considerations involving a wider range of factors contributing to lower intellectual level and school failure. When broad environmental factors are taken into consideration they lead to investigations of poverty, poor housing, poor health, and in general defective circumstances for the development of the individual as a biological organism who interacts with his environment in a social, cultural, and educational manner. Such investigations ultimately lead to the conclusion that malnutrition never occurs alone but usually occurs in conjunction with low income, poor housing, family disorganization, a climate of apathy, ignorance, and despair (Birch, 1972). While these general factors do afford us a broader view of the interaction resulting in less than optimal outcomes, they do not give us precise or specific information concerning malnutrition or subnourishment.

Perhaps one of the most complete studies of the relationship of growth achievement to later intellectual development is that of Birch and his associates (Cravioto, deLicrde, Birch, 1966; Birch, 1971). The study involved Guatemalan rural indian children who live in environments where severe malnutrition and chronic subnutrition were present. According to Birch the children lived in villages having a significant level of both chronic and acute malnutrition . Prolonged subnutrition both in infancy and preschool years was also present.

In this retrospective study, Birch identified school age, relatively well-nourished children by better growth. Those previously exposed to malnutrition were identified by lower growth achievement for their chronological age level. Using growth criteria, Birch contrasted the taller and the shortest fourths of the children in the height distributions. The two groups of children were evaluated by means of an intersensory, integrative test battery. Results indicated that competencies in making judgements were clearly different between the two groups. At all ages tested (6-11 years) taller children exhibited higher levels of competency than did the shorter group. In general the shorter children lagged by two years behind their taller age mates. It is interesting to note that the study did control for broader environmental factors such as socio-economic status, housing, and parental education.

In late 1967 and early 1968 a study of the nutrition status of preschool children in Mississippi was undertaken (Owen and Kram, 1969). The researchers used trained dietary interviewers who were responsible for contacting and enlisting the cooperation of families. Each family was interviewed through three days to assemble information including such items as socio-economic status, sources of food, procedures of preparation, children's eating habits, and the children's eating patterns. Records of the child's dietary intake were kept for three days and then were coded using a manual adapted from a USDA Agricultural Handbook. The nutrient values of each diet were then analyzed using electronic computation.

In general the interviewers found that energy intake and intakes of calcium, ascorbic acid and riboflavin tended to be the most limiting factors in the diets of the Mississippi preschool children.

They also found that growth achievement and biochemical results lent support to implications from the dietary intake data supporting the supposition that poverty children are smaller than average and appear to be more at risk nutritionally than were the more affluent youngsters. The authors concluded that the decreasing consumption of milk and dairy products after the second year of life accounted, in part, for the apparent limiting supply of calories, calcium, and riboflavin in the diet of poor children during preschool years.

Fox, Friar, Lamkin, Vivian, and Eppright (1971) completed a rather extensive study of the nutritional status of children in what can be referred to as the North Central Region. The North Central Region includes Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Ohio, and Wisconsin. Research assistants interviewed mothers in approximately 2,000 households. Each household was randomly chosen and needed to meet the selection criteria of having at least one preschool child within the home. Interviews were conducted in the Fall of 1965. Each mother was asked to record the amount of all foods her child ate during three consecutive days. Interviewers helped the mothers record the food eaten the first day and reviewed the completed record after the third day. Nutrient intakes were then calculated from the food composition data in Home and Garden Bulletin #72 (1964). Statistical summaries were then developed for the intake of food energy and nutritients.

Results revealed that the intake of food energy, fat, and carbohydrates for the preschool children in the North Central Region increased rapidly during the first twelve to eighteen months of life and

tnen slowed from eighteen months to 72 months. Protein showed a somewhat different profile leveling off somewhat between 18 and 36 months and then increasing slowly to the 72 month age. They found that approximately two-thirds of the children were receiving the recommended allowances of calories and nearly all were receiving their recommended allowances of protein. They found that family income was not significantly related to the intake of food energy, protein, fats, and carbohydrates. This also appeared to be true for the mineral content of the diets. The amount of money spent for food seemed more important than the income or education of the mother in exerting a positive influence on the food intake of the child.

The intake of calcium, phosphorous, and iron increased rapidly during the early months. They did find, however, that iron decreased sharply before the end of the first year - the period during which it should remain relatively high. They found that calcium and phosphorous intakes compared favorably with the recommended dietary allowances and that the iron intake as indicated before was low as judged by the recommended dietary allowances. The above authors have not yet released their findings concerning vitamin intake and dietary supplements.

Recently a ten-state nutritional survey has been conducted by DHEW (1968-1970). Volume 5 of the survey deals with dietary intake. The overall objective of the survey was to describe nutritional status of groups and not necessarily analyze the nutritional status of particular individuals. With this objective they accepted the 24-hour recall method as the most effective technique. During interviews by trained personnel, individuals were asked to recall all foods and beverages they had consumed

during the preceding 24-hours. Data for infants and young children were obtained by interviewing their mothers. It is assumed that if a large number of a group consume intakes below the standard it can be asserted that in general the diets of the population are apt to be inadequate over a period of time. Also data from the 24-hour recall can be broken out for selected subgroups of the population and analyzed by contrasting food consumption with other subgroups.

The National nutrition 10-state intake study found that dietary intakes reported for infants were sufficient to meet the standards for all nutrients except iron. However, the distributions revealed a wide range of intake with many infants consuming much smaller amounts of calories, iron, vitamin A, and Vitamin C than required by the standards. The youngest white children (6-11 months of age) in the high income ratio states had the most satisfactory diets. Black and Spanish American infants had low dietary intake for most nutrients.

In order to assess the dietary intake of children in the State of Idaho, a procedure similar to that used in the Mississippi study and in the North Central study was used. It consisted of a consecutive three day intake study. The mothers of young children (under 6 years) selected randomly throughout the State were contacted by home interviewers who gathered a variety of information including the nutritional data. Mothers were instructed by the interviewers concerning the use of the nutritional forms and then asked to mail back the forms once they had recorded the three day dietary intake for their child or children. The procedure then consisted of simply recording the food eaten by each child including the times that he ate, the amounts that he ate, and any supplements that were

given. The data were then analyzed by computer providing a mean intake for nutrients over the 3-day period. Four-hundred fifty-one children were involved in the Idaho nutritional intake study. By breaking out the results of the Idaho survey in different ways they can be compared to the results of the aforementioned three studies. Figure 7 presents data relating the National Nutritional Survey to the Idaho findings. It compares the percentage of children, ages 12 to 36 months, below the recommended Dietary Allowances for the Idaho and the National Health Survey. It should be noted at this point that the National Survey utilized a 24-hour recall method of obtaining food intake and the Idaho survey used a 3-day recording method of determining the food intake. It is probable that the differences shown on the chart are not good estimates of the differences that exist in reality. Using the means for the 3-day dietary intake has the effect of pulling the tails of the distribution in and making the distribution more leptokurtic than the one-day recall distribution.

The Idaho data presented in Figure 7 is based both upon food intake and food intake plus supplements. The National data included in the Figure is based upon food intake only. For Idaho, 47 percent of the children sampled by the survey were receiving supplements - primarily in the form of multiple vitamins, however, approximately one-half of those children receiving supplements did not need them, in other words they were already over their RDA prior to taking the supplement.

Comparison of the Idaho survey with the National survey reveals that when no supplements are calculated for either survey, Idaho has more children (age 1 - 3 years) below their RDA in all nutrients except protein. However, when the supplements are added to the diets of Idaho children only calorie, calcium and riboflavin intake remain below the National level.

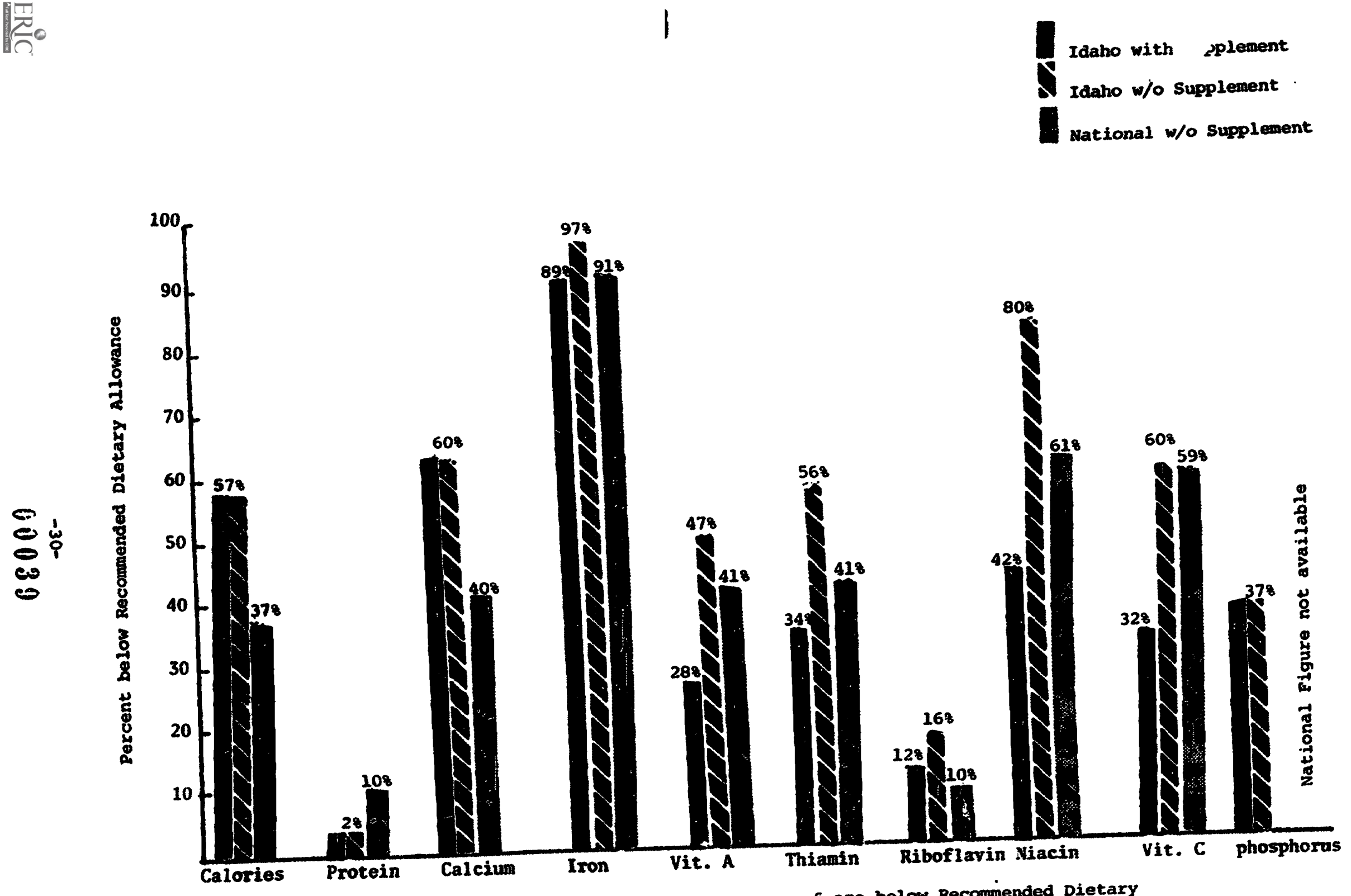

Figure 7: Percentage of children 1-3 years of age below Recommended Dietary Allowance for Idaho and Natior. N=239 (Idaho). N=1,401 (Nation)

TABLE 2

The mean dietary intakes for Mississippi, the North Central Region, and Idaho children, ages 1 to 2 years old.
(N=56 for Idaho)

BEST COPY AVAILABLE

	Calories	Calcium	Iron	Protein	Vitamin A	Thiamin	Riboflavin	Vitamin C
Mississippi	1,141	658	6.2	45	3,529	.65	1.3	45
Idaho	1,149	927	8.6	50	4,711	1.06	2.11	96
North Central Region	1,338	963	8.1	56	NA	NA	NA	NA
RDA*	1,100	700	15.0	25	2,000	.60	.60	40

*Recommended Dietary Allowances from Nutritive Value of Foods, Home and Garden Bulletin No. 72-4-0 USDA 1971.

00040

ERIC

TABLE 3

Mean Dietary intakes for Mississippi, the North Central Region, and Idaho Children, ages 2 to 6 years. (N=367 for Idaho)

BEST COPY AVAILABLE

	Calories	Calcium	Iron	Protein	Vitamin A	Thiamin	Riboflavin	Vitamin C
Mississippi	1,449	643	8.4	54	3,899	.80	1.3	50
Idaho	1,429	852	8.8	55	4,584	1.22	2.04	94
North Central Region	1,640	971	8.6	64	NA	NA	NA	NA
RDA* (Range)	1,250-1,600	800	10-15	25-30	2,000-2,500	.6-.8	.7-.9	40

*Recommended Dietary Allowances from Nutritive Value of Foods. Home and Garden Bulletin No. 72-4-0 USDA 1971.

000041

TABLE 4

Number of Nutrient Deficits (two-thirds or more below RDA) per child.

Number of Deficits per child (N=451)

	0	1	2	3	4	5	6	7
Frequency	164	157	63	37	13	9	6	2
Percentage	36.3%	34.8%	13.9%	8.2%	2.8%	1.9%	1.3%	.4%

TABLE 5

The Associative relationship between iron and other nutrient intake levels (N=451)

	x^2	C**
Calories	47.81*	.309
Protein	1.68	.054
Calcium	26.92*	.236
Vitamin A	12.47*	.164
Thiamine	40.49*	.286
Riboflavin	5.12	.105
Niacin	41.84*	.289
Vitamin C	18.74*	.199
Phosphorous	21.76*	.214

*Significant at .001 level
** Maximum possible C=.707

It is noted earlier that these are the same nutrients that Owen concluded in his Mississippi study as indicating a decrease in the consumption of milk and dairy products after the second year of life.

Tables 2 and 3 provide a comparison of the results of the Mississippi, North Central Region and Idaho nutritional intake studies. All three studies included supplements in their calculations and used the three-day intake procedure.

When contrasting Idaho with the other two studies it can be observed that it falls below both Mississippi and the North Central Region in mean calorie intake. Idaho was also below the North Central Region in mean intake for all nutrients except iron.

The Idaho survey data can be broken out to show the number of children receiving two-thirds or less of the Recommended Dietary Allowance (RDA) for specific nutrients. Table 4 presents data showing the number and perdentage of such children. Sixty four percent of the children were receiving two-thirds or less of their RDA for one or more nutrients. Figure 7 has shown that the greatest deficiency is in the area of iron intake. Table 5 shows the relationship between iron deficiencies and other types of nutrient deficiencies. As can be observed from the table, when iron deficiencies are evident, calorie and calcium intakes may also be low. Thus if a child is anemic, and it is assumed that his iron intake is deficient, the probabilities are greater than chance that his calcium and calorie intakes are also deficient and that appropriate intervention should include a dietary intake study rather than simply adding an iron supplement to the diet. As previously discussed the Early Periodic Screening has found pockets of anemia as high as 25 percent in various regions of Idaho.

Low niacin intake does not necessarily mean there is a need for a niacin supplement. The human body has the ability to convert the amino-acid tryptophan to niacin. Estimates of the amount of niacin from this

source are difficult to make because diets usually include a variety of protein foods (Nutrition Survey, 1968-70).

Idaho's data indicates that one and two year old children appear to be significantly more at risk nutritionally than all others under the age of six (Table 6 and Figure 8).

Table 7 shows that there was no relationship established between evidence of poor nutrition and the income level of the family. That is, poor nutrition is equally present in all three income levels (low, middle and high).

AGE LEVELS

Clusters	2 1	3 0	4 5

Figure 8: Age Levels and Their Clustering Groups

TABLE 6

The Relationship Between Age Group and Number of Nutrient Deficits Using Chi Square Technique

Age Group	Chi Squares			
	1 yr.	2 yr.	3 yr.	4 & 5 yr.
Under 1 yr.	13.03***	31.66***	3.09	0.0
1 yr.	-	1.24	7.05**	27.94***
2 yr.	-	-	18.47***	55.28***
3 yr.	-	-	-	10.73***

**Significant at .01 level
***Significant at .001 level

TABLE 7

The Relationship Between Income and the Number of Children with Nutrient Deficits Using Chi Square Technique

Income Level	Number of Children with Nutrient Deficits		
	No deficits	1 or more deficits	Total
$0-$4,999	12 (32%)	25 (68%)	37
$5,000 - $11,999	112 (36%)	198 (64%)	310
$12,000 - up	41 (52%)	57 (58%)	98
Total	165 (36%)	280 (64%)	445

$x^2 = 1.436$ N.S.
C = .06

00046

VENDORS OF SERVICE

It is difficult to completely identify and measure the impact of programs aimed at the reduction of environmental hazards. Some of the initiative for such action originates from Congressional action relating to automotive safety and toy safety.

As previously mentioned most accidents involving young children occur in or around the home. Because of this it would appear most expedient that home builders, city planners and parents become involved in the development of safer residences and residential areas. Failure to take into consideration the needs of young children when developing a residential area can result in greater potential for unnecessary accidents and deaths i.e. the exclusion of parks and playgrounds.

Most of the public information and awareness programs in Idaho are directed at the elimination of automobile traffic accidents. The Idaho Office of Child Development's vendor survey did not identify any public awareness programs directed at the prevention of accidents at or near homes. Because an estimated 15,476 Idaho children are injured annually in their homes and at the present time there is not a public education or awareness program attempting to intervene, the absence of such a program represents a major gap in the service program.

Almost all the health care provided ill children is through private physicians, clinics or hospitals. The Mountain State Regional Medical Program under the sponsorship of Western Interstate Commission for Higher Education (WICHE) developed a health profile of Idaho (Barton, 1969). After reviewing the professional and allied health professionals available in the

State they concluded that many of the supportive health professionals were in short supply. They singled out speech therapists, physical therapists and occupational therapists as examples of those allied professionals in short supply. With reference to the availability of professionals in the State the WICHE Report indicated that in many areas within Idaho certain professionals were nonexistent. This shortage of manpower has led to the consideration and development of paramedical personnel such as Medex, nurse practitioners, etc.

The major public vendor of health services is the Department of Environmental and Community Services (DECS). Their Preventive Medicine Division supplies vaccinations for various acute illnesses through Regional Health Districts. According to the Household Consumer Survey, conducted by the Idaho Office of Child Development (IOCD), about 18 percent received their immunizations through public health vendors, 20 percent used both public and private vendors and 57 percent received their immunizations through private physicians or clinics.

The Maternal and Child Health Division of DECS provided pediatric care for about 908 preschool children during FY 1971 throughout Idaho.

Health Districts throughout the State have the option of providing additional services such as physical, urine, blood and developmental screenings. This screening process may or may not be part of the well-baby clinics offered in some parts of the State.

Other organizations providing service include the American Cancer Society (five children below 6 years of age in 1972). The Community Christian Center and the Community Health Clinic in Nampa provided physical examinations for about 550 children in Planning Region III during 1972.

DECS provides subsistence payments for women with children needing

financial assistance. A portion of their benefits are utilized in providing medical care for welfare children. The AFDC program is designed to provide financial assistance for low-income families with children 18 years and younger or age 21 and younger if they are in school. In order to receive the subsistence payment the father cannot reside in the home unless he is disabled. When one is eligible for AFDC a medical card is issued and medical expenses that are encumbered are payed for primarily by Title XIX Social Security Funds.

Thirty-seven and eight tenths (37.8) percent of the children eligible for these funds are six years or under. In April of 1973 - $214,170 was expended by the Department under Title XIX to provide for the medical needs of children. Prorated we would estimate that about $80,956 of this money went for children six years and younger. The State also receives about $260,000 annually under Social Security Title IV-B funds which are used primarily for foster care, however, a small amount of this revenue also covers medical expenses for children.

Other non-profit organizations do provide services for those with health needs. The American Cancer Society is a statewide organization which provides services such as transportation, financial assistance, support, etc., for cancer patients.

Regional or local private organizations also provide assistance. The American Red Cross is active in some areas. Some Community Action Agencies may also provide health checks and services.

Head Start offers health care for those enrolled in the program. During 1972 about $51,900 was expended by the program to provide health care such as physical and followup treatment.

Other health organizations may provide services to special groups

such as the Fort Hall Indian Health Clinic, Idaho Migrant Council Program, Model Cities Health Clinics, Community Health Clinics, Visiting Nurses Association, Community Christian Center, etc.

Again dental health services are provided mostly by private practitioners throughout the State. At the State level, public vendors include Child Health, a Division of DECS. These services are preventative in nature and are usually rendered for young school age children. However during 1972 Child Health provided dental care for about 50 children in the Boise area. Other orgnaizations such as the Community Action Agencies will occasionally provide dental care for migrant children. Head Start will pay up to about $50.00 per child for appropriate remedial dental work. The Department of Dental Hygiene at Idaho State University provides examinations, oral fluoride applications, x-rays and cleans teeth for about 200 preschool children per year. The Fort Hall Indian Health Clinic and others also provide some dental services for preschool Indian children. Some Kiwanis Clubs also assist in providing dental therapeutic services to those financially unable to obtain them. Another active group that provides dental services is the Kootenai County Child Health and Welfare Council.

Under Title XIX of the Social Security Act, DECS has a dental program which provides for dental care up to the age of 16. Only recipients are eligible for treatment and it is estimated that around $27,000 was spent each month in support of the program. The Early Periodic Screening program complements this treatment program by acting as an intake mechanism identifying those needing further service.

Head Start also provides services for children needing dental care and not qualifying under DECS guidelines. Last year Head Start Programs throughout the State provided about $72,660 for dental examinations and services. Some county welfare offices still provide dental care for those

unable to afford it.

Few organizations provide nutrition services directly with specific target populations in mind. DECS maintains a nutritionist on staff in order to monitor and provide counseling concerning dietary intake of PKU children. The USDA Cooperative Extension Service covers about 17 counties and Fort Hall (as of 1972). They usually interview and counsel about 1,100 families a month. The visits may include one or more per family.

Model Cities has provided nutritional services for about 90 children yearly in its neighborhood. The Community Christian Center is also another organization which provides local services and may provide nutritional counseling for up to 45 children and their families during a year.

CHAPTER II

HEREDITARY AND ENVIRONMENTAL FACTORS WHICH INFLUENCE THE CHILD'S DEVELOPMENT

Hereditary and Environmental Factors Interact

In some quarters the argument continues around the impact of heredity versus environment upon a child's development. Studies which evaluate the effectiveness of environmental manipulations and find evidence of impact,simply imply that the independent variables manipulated within the study,had effect within the constraints of the study as related to the dependent variables. However this does not mean that all relevant independent variables have been manipulated and their impact upon the dependent variables assessed appropriately. At the present time the notion that the child is born with a fixed level of ability has generally been abandoned and most scholars are willing to accept the fact that both genetics and environmental factors play a significant part in the development of a child's skills.

While there can obviously never be a complete generality concerning the contribution of heredity or environment, several studies have attempted to sort out the effects of heredity or environment upon developmental skills. While the issue continues to be controversial in the behavioral and social sciences it has been resolved to a certain extent in biological sciences.

For the biological sciences, the concept has now emerged that genes themselves are part of the environment and are subject also to modification. That is, they can be modified by radiation or other influences. Thus just as growth may be modified by nutrition for a particular individual, the phylogenetic characteristics of a species can be modified through time, given

a changing environment and a changing genetic pool. Consequently the issue becomes entirely an environmental issue with the realization that certain elements of the environment change much slower, taking myriads of centuries in order to show adaptive change within the genetic constraints of the species.

While biologically the issue has been resolved, it is important to appreciate that it cannot easily be evaluated in social sciences and it is difficult to determine how much each force (nature or nurture) contributes to a particular set of developmental skills. Attempts to separate genetic from environmental factors have turned to the use of twins. In such research identical twins are used as controls upon one another assuming that each has the same genetic factors (genotype). Thus any difference between them may be attributed to environmental influences. Newman, Freeman and Holzinger (1937) used this method to study the effects of different home environments upon personality. While interpreting the results of twins studies, one should be cautious. It should be evident that environmental influences to which two children are exposed do differ even though they are both raised in the same family. Furthermore, it appears that these environmental influences may differ at least in some respects more for siblings or fraternal twins than for identical twins.

Several studies have shown that identical twins spend more time together, enjoy similar reputations, are more likely to be in the same classrooms, have similar health records and in other respects resemble one another more closely than fraternal twins or siblings (Jones, H.E., 1946). In general, one can say that his individual physical features are heavily based upon heredity. Examples of this are the color a a persons eyes, the shape of his nose, pigmentation of his skin, characteristics of his hair, etc. Anatomical traits

may also be traced to heredity but non-hereditary factors also begin to influence such traits. For example, nutrition, climate, exercise and other factors can begin to enter in. Again Newman, Freeman, and Holzinger (1937) found that among twins who were raised together, identical twins were consistently more alike than non-identical twins on measurement of height, weight and hand width. They also found that except in the cases of weight, identical twins reared in different environments resembled each other more than non-identical twins reared together.

In a study of adult identical and fraternal twins, Osborne and de George (1959) have shown that the long thin body build showed greater similarities between identical twins than between fraternal twins - especially for females.

We do know that certain anatomical formations are hereditary in nature. For example, cleft palate and club foot are more likely to occur in both members of identical twins than in both members of a pair of fraternal twins. Physiological traits have also been reviewed in twins. For example, in one study (Malkova, N.N., 1960) it was found that the average difference in blood pressure between identical twins was 5.1 as compared with 8.4 for non-identical twins. Similar findings have been obtained for pulse rate. The close correspondence between blood pressure and pulse rate for identical twins suggests that hereditary factors may play a role in determining some physiological traits. One can move quickly from the area of the impact of genetics upon physiological and physical characteristics to its impact upon mental retardation.

One of the hereditary characteristics that has been worked out in detail is called Phenylketonuria (PKU) (Jervis, F.A., 1959). Children with this disease lack an enzyme which is necessary for normal metabolic functioning. If the enzyme is missing the toxic chemical accumulates in the body and leads

to damage to the nervous system and mental deterioration. In addition to this p. ticular disease there is a small group of similar diseases where an enzyme is missing and the result again is often a metabolic failure and the consequences of mental retardation.

Heredity appears also to have an impact upon the mental health or lack of mental health in children. Specific examples can be sighted with relationship to schizophrenia. Though most investigators believe that the term schizophrenia refers to more than one disease process, they conclude that in general some forms are more strongly influenced by genetic factors than others (Kallmann, F.J., 1938;1953). He reasoned that if psychosis were influenced by heredity then the incides of schizophrenia would be higher among those patients genetically similar. In order to substantiate or refute this hypothesis he studied six different groups with varying degrees of genetic identicalness. Table 8 below presents the results of his findings.

TABLE 8

Genetic Relationships and the Probability of Having Schizophrenia

Identical Twins	85.8	Half-Siblings	7.0%
Fraternal Twins	14.7	Step-Siblings	1.8%
Full Siblings	14.3	General Population	0.9%

Recent reviews of this work by Rosenthal (1959) have indicated that perhaps there are two broad groups involved. He studied 37 pairs of identical twins, one or both of whom were schizophrenic, his results suggested that when both twins were schizophrenic there was a greater likelihood of the twins showing a long history of mental illness and that this was less likely to be true when only one of the twins became schizophrenic. However, when both twins

were schizophrenic in contrast to only one of them developing the disease there was a much higher incides of schizophrenia in the family of the twins. Rosenthal concluded that there are perhaps two broad groups of schizophrenics and that genetics may contribute greatly to the latter but contribute less to the former.

Because of the establishment of criteria it has been difficult to pursue research, with any type of reliable reputable results, in the area of personaility. However one piece of research does stand out and again shows some significant characteristics of what might be considered a high risk group. Telser, et al, (1968) conducted a study in which male inmates of four prisons were screened for their height and a chromosomal analysis was performed on all men six feet tall or taller. Ten percent of these men had an extra chromosome, that is, they had 47 instead of 46 chromosomes. Some of these men had two X's and one Y, others had one X and two Y's. Both of these patterns are abnormal since the normal pattern for the male is one X and one Y chrosome. Among non-criminal males over six feet tall in the general population the frequency of such abnormality is about one percent. The men with abnormal chromosome characteristics are usually characterized as having been involved in repeated acts of violent agression towards others. This high risk group could be identified with relative ease through an early chromosome study.

Careful review of genetic research relating to personality suggests that maybe one or two more dimensions are at least partially under genetic control. The tendencies can best be described as an inhibition toward social situations. In the past this personality type has been described as intraversion. Perhaps a more apt description would be that the person is timid,

shy and withdrawn in contrast to one who may act friendly and outgoing. Studies of twin infants also reveal that identical twins are more likely than fraternal twins to have a tendency to smile and show fear of strangers (Friedman, 1965).

Perhaps one of the most controversial areas is that of intelligence. H.E. Jones (1946) performed one of the most interesting studies and attempted to correlate the intelligence of children raised by foster parents with the intelligence of their own parents and their foster parents. This type of study is complicated by the fact that most adoption agencies try to take into consideration the child's socio-economic background and the intelligence of the true parents when they place the child in a foster home. They try to find a foster home of similar characteristics but yet Jones, in his study, found that the correlations between the IQ's of children and their foster parents were not as high as correlation between the child's IQ and the true parents of the child. This appeared to be true for all of his studies. The assumption that genetics has an impact upon intelligence is now being carried further by Jensen (1969) indicating that Blacks have a lower intelligence level than whites because of the composition of the gene pool. Jensen has pursued this line of research for several years and the issue has now become a hotbed of emotional activity.

Additional evidence concerning the control of genetic characteristics upon the development of behavior in humans has been revealed by Dennis (1940). He found that cradling did not delay the onset of walking, that smiling appears spontaneously in the absence of social example and that facilitation of the expression of laughter, fear and anger cannot be brought on earlier in normal sighted children as compared to blind children (Thompson, J., 1941).

Another demonstration of genetic impact upon the behavior

has been provided by McGraw (1940). He gave systematic daily toilet training to one member of each of a set of identical twins. After the first few weeks of life they failed to achieve bladder control any earlier than their co-twin whose training was postponed until responsiveness was indicated. Similarly in a pair of fraternal twins, (Johnny and Jimmy) who after practicing such activities as sitting, standing and walking, it was found that practice did not accelerate Johnny's development and only modified minor aspects of sequence and pattern (McGraw, M.B., 1935).

Numerous experiments have examined the impact of practice or training at an early age. Most training has shown to be ineffective until a later age is reached when readiness to perform the skill is predominant. In some studies an experimental group or identical twin is given extended early practice whereas an equateable control group or co-twin is given a short period of practice at a later age. Relative superiority of the latter procedure has been demonstrated in such activities as buttoning, stair and ladder climbing, cutting with scissors, tossing rings, cube building, throwing a ball at a moving target, etc. (Ausubel, D.P. and Sullivan, Edmund V., 1940).

On the other side of the coin however, it has been demonstrated that practice is more effective on tasks that are of a cognitive nature such as the learning of a vocabulary (Gates and Taylor, 1925) and the memorizing of digits (Hilgard, J.R., 1933). The fact that motor skills and skills somewhat under autonomic control do not respond in an effective manner to training indicates that they are more contingent upon readiness through maturation as contrasted with such skills as learning vocabulary and memorizing digits which are cognitive in nature. These findings brings forth the question of neuro-correlates of behavior and more precisely,the development of the brain as the child matures.

Some of the most interesting research in terms of neuro-correlates with behavioral development has been completed by Milner (1967). Milner found that cortical activity as measured by the electroencephalogram (EEG) emerges for the first time at about the eighth fetal month and does not change appreciably until the end of the first postnatal month.

To demonstrate the kind of activity and development that is occurring within the cortex during this period of time, Milner found that initially the EEG recording shows no difference between waking and sleeping. However, by the third year of age this difference approaches the adult pattern and its presence has been supported by actual anatomical research on the development of the brain during the early years of life. At birth an ordinarily laminated arrangement of cells and divisional differentiation of function are present, however, during the ensuing months the cortical cells become increasingly more differentiated. Their processes become longer and more elaborate, further localization of functioning takes place and the presence of myelin and neurofibers becomes more evident. These anatomical findings and the onset of functioning in different portions of the brain indicate that the maturity at birth is not evenly distributed over the brain and again we have evidence that the older parts of the brain, that is, the older parts phylogenetically, are more functional. Hence such activities as motor activities should be emerging prior to any kinds of cognitive activities such as language and problem solving ability (Peiper, A., 1963). In general 90 percent of the total postnatal brain growth will occur in the first three years of life. Within fifteen months the infant has accomplished sensory motor coordination which enables him to become self-propelled, to walk upright and to begin extensive exploration. As mentioned before, the major portion of this growth is in the

cortical regions and behavioral manifestations of it start with such things as sitting, learning of words, vocabulary and more complex social responses.

Anne Anastasi (1958) has summarized the results of many years of work in the field especially realting to individual differences centered around heredity and environment. She contends that the major problem now is how heredity, as well as how environmental factors, influence the development and behavior of an individual along a continuum. Several methodologies exist to pursue the problem. She lists them as follows:

- Hereditary conditions which underly behavioral differences between selective bred groups of animals.
- The relationship between physiological variables and individual differences in behavior especially in a case of pathological deviation.
- Role of prenatal physiological factors in behavioral development.
- Influence of early experience upon eventual behavioral characteristics.
- Cultural differences in child rearing practices in relationship to intelligence and emotional development.
- Mechanisms for somato-psychological relationship.
- Psychological development of twins from infancy to maturity, together with observations of their social environment.

Jopke (1970) has concluded that these approaches, while they are extremely varied, would provide a heterogeniality of methodology that is demanded in order to continue to unravel the interacting hereditary and environmental factors as they impact human development. It is best to mention at this point that what we are actually observing in the development of children is constraints of the interaction of both genetic and environmental components. Thus we have both internal and external influences impinging upon an individual with existing properties and predispositions. Predispositions themselves are actually prior interaction between hereditary and environmental

factors. For what was once the original environment, or outside the inherent genetic material, is now intrinsically bound up with it as the organism continues on its course of development. The basic question then becomes, as pointed out by Anastasi (1958) in part, and by Ausubel and Sullivan (1970), the relative contribution of variation in the genes and variation in the life history of the organism or child.

Ausubel and Sullivan (19 0) have reviewed numerous studies concerning evidence of the direct impact of various genes upon behavioral characteristics of the human being. They list the following characteristics as having a direct relationship to known genetic deficits:

- Feeble mindedness
- Amaurotic family idiocy
- Sex-linked idiocy
- PKU
- Microcephalics
- Huntington's Chorea
- Schizophrenia
- Male homosexuality
- Intelligence
- Verbal ability
- Motor ability
- Autonomic reactivity

It has been demonstrated that lower mammalian species can be selectively bred for many temperament traits including emotionality, spontaneous activity, tameness, agressiveness and maze brightness or intelligence (McClearn, G.E., 1962).

With this in mind it becomes rather interesting to note that meaningful relationships exist between various personality characteristics and various body types. This may suggest that the relationship between body type and temperament or personality characteristics is mediated by linked genes which have a direct effect upon physiological characteristics and the neurological base of the temperament or through genetically regulated hormone and autonomic mechanisms which then have an effect on the temperament or the personality of the human.

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COGNITIVE DEVELOPMENT

In the previous section we reviewed the development of skills and found that several researchers indicated intelligence may be subject to change under environmental enriching conditions.

Smith and Bissell (1970) have reviewed several of the earlier pieces of research leading to the conclusion that cognitive plasticity exists and that earlier intervention could lead to the amelioration of cognitive deficits observed in disadvantaged children. Disadvantaged children in this case were definded by an economic criteria - thus handicapped youngsters probably consitituted only a small proportion of those served in compensatory programs for the disadvantaged. They (Smith and Bissell) credit J. McV. Hunt, Benjamin Bloom, David Weikart, Susan Gray, Rupert Klaus, Carl Bereiter and Sara Smilansky with providing rationale and program evidence for the initiation of early compensatory programs.

This push during the Johnson administration lead to several programs being developed including Head Start which has been a popular nationwide program helping to lead the war on poverty. In 1966-67 an evaluation of the impact of Head Start was undertaken by Westinghouse - Ohio. It was a nationwide research-evaluation project which ultimately yielded a highly controversial report. Conclusions of the report read as follows:

- Summer Head Start programs do not produce cognitive or effective gains that persist into the early elementary grades.
- Full-year Head Start programs do not appear to influence effective development, but have marginal effects on cognitive development which can still be detected in grades one, two and three.
- Head Start programs appear to be more effective in mainly Negro centers in scattered programs in the central cities and in the Southwest.

- Head Start children are below National norms on the Stanford Achievement Test and the Illinois Test of Psycolinguistics ability- although their Metropolitan Readiness scores approached National norms.

- Parents liked the program and participated in it.

The entire issue of early compensatory education including kindergartens has since become more of an issue and various program parameters have been manipulated to attempt to prove the fruitfulness of early education under varying conditions. After a thorough survey of the literature, Mussen, Conger and Kagan (1969) concluded that children from deprived backgrounds score well below middle class children on both group and individual intelligence tests. In addition they concluded that children from deprived backgrounds came to school without the skills necessary for coping with academic work. In terms of academic achievement they are retarded an average of two years by grade six and about three years by grade eight. Following this they are more likely to drop out of school before completing a secondary education; and even when they have adequate ability, they are less likely to go to college. In an attempt to condense the volumonous amount of literature now being published a thorough search of ERIC, psychological abstracts and educational reviews was conducted by the Idaho Office of Child Development. This enabled us to review all readily available literature and not concentrate upon one study such as the Westinghouse - Ohio University National Head Start Evaluation.

In order to qualify as adequate research regarding the impact of programs we set forth the following criteria:

- The program must exceed six months in intervention time.

- A control or placebo group must be used.

- Long term follow-up is highly desirable.

- Improvement must account for more than regression toward the mean or spurious effects of the program such as the Hawthorne Effect.

One of the early and successful programs that has sustained intellectual gain over a long period of time is that of Susan Gray (1970). Susan Gray and her colleague Rupert A. Klaus used 88 negro children as subjects starting intervention at four years of age or later. They developed basically four groups - two of which were experimental groups. The first experimental group received three - (10 weeks) summer training sessions and a home visitor every week during the school year. The second experimental group received the same routine except they were provided the program for only two years.

The Stanford-Binet was used to check for significant cognitive differences that might occur between the groups. Data was subjected to an analysis of variance. Results indicated that at all times experimental groups were superior to control groups. The difference however failed to sustain significance to the end of the fourth year of grade school. This failure was attributed more to an increase in variance than a convergence of the means for each group. It is interesting to note that parents acted as the prime therapists during nine months of the year.

In a somewhat similar study, Karnes, et. al (1970) developed and evaluated a program which emphasized education at home by parents of disadvantaged infants. Two control groups were used. One consisted of siblings and the other of a matched sample. At the end of the intervention period when the children were three and four years old the experimental group proved superior to the control group by 16 IQ points as measured by the Stanford-Binet. ITPA post test scores also indicated that the experimental group was about average for their age while their matched controls lagged behind by about six months.

Hess and Shipman (1965) described the class differences that appear to contribute to the determination of lower cognitive abilities and lower achievement. They found that middle class mothers use more words in responding to the children's questions and in carrying out the tasks assigned them by the researcher. The middle class mother also offered more opportunities for labeling, for identifying objects, for feelings and demonstrated adult models for language use.

Merle B. Karnes, et al (1970-72) reviewed the results of their programs by initiating a five year follow-up study. Initially Karnes was comparing four groups which she later lumped into two groups. The two groups were used to compare the structural approach to that of an open approach (tradional). Initially the structured group showed a 14.1 IQ gain on testing while the traditional group showed an 8.2 gain. However, by the end of the third grade Karnes found that the structured group had lost 7.3 IQ points which it had initially gained while the traditional group lost approximately two points. It would appear as though the environment did not support the gains achieved by the experimental group. The two point loss can be accounted for by error of measurement or regression toward the mean. Unfortunately there was no control group which received either placebo training or no training at all.

Carl Bereiter and Siegfried Engelman developed a highly structured program which has resulted in the development of Distar materials. Their program was selected by A. Lewis (1970) as one of the outstanding programs in the nation in terms of providing positive results. With their highly structured rote memory program they were able to demonstrate immediate gain of 19.74 IQ points over the control group which received traditional kindergarten and preschool. A follow-up study three years later found that the two groups had reversed and the gains were no longer apparent (Lally, 1972).

Martin Deutsch (1970) began his preschool studies back in 1958. During the early part of the study he and his staff were convinced that disadvantaged children needed a good preschool foundation in the form of the best "early intervention" they could provide. However by 1964 Deutsch had changed his ideas sufficiently to expand his program into the elementary grades. Gradual fading of gains achieved, similar to the results obtained by previously mentioned investigaors, convinced him that more of the environment must be modified and that a supportive environment must be present at least through the elementary grades to maintain gains.

H.H. Spicker (1970) conducted two preschool programs and contrasted their immediate results and first grade results against a control group. The immediate post test demonstrated significant IQ gains. However during the follow-up of first grade students, Spicker began to find the "washout effect" just as other investigators such as Karnes and Gray experienced.

Perhaps one of the most widely known preschool programs is the Ypsilante Perry Preschool Project (Weikart, 1970). It was followed up and a report issued when the oldest children were in the seventh grade and the youngest in the third grade. Weikart had three general findings. First, they found that children who participated in the preschool obtained significantly higher scores on the Stanford-Binet IQ test than the control group children. This superior functioning disappeared by the third grade. Secondly, children participating in the preschool initially scored higher on achievement tests. The difference, however, was attained only in the first and third grades. Thirdly, the children particpating in the preschool program received better ratins in academic, emotional, social development than the control group. This difference continued through the third grade.

Frank Kodman, Jr. (1970) studied the effects of preschool enrichment on the intellectual performance of Appalachia children. He used a control group and several experimental groups. Initial gains in IQ were again observed, however, after experimental subjects entered into the first grade he observed that experimentals performed poorly even if they made significant gains during their preschool enrichment period. While his initial gains were dramatic - the "wash-out effect" again began to appear as the enrichment children entered school. However it was noted that the earlier enrichment occurred, and the more received, the greater sustaining power the gains seemed to demonstrate.

Beller E. Kuno (1972) has been the first investigator to develop gains using ECE* and then have them sustained over a period of time. At the final follow-up testing, his students had reached the fourth grade. It is interesting to note that the gains over controls in the area of cognitive development were about 10 IQ points. There was an additional factor in Beller's program which involved parents in the programming of their own children. The parents involvement may in part account for the sustained gains.

Louis Di Lorenzo (1969) undertook a massive research effort in New York State to evaluate the impact of preschool upon later achievement of children in the primary grades. Eight school districts were involved and about 1,800 children. The project comes closest to exemplifying or demonstrating what would happen to ECE under universal programming. Staff turnover was frequent, philosophies differed and mobility caused problems. At the end of the second grade no fifferences could be detected between experimental preschool student's achievement and those not receiving preschool. In fact the controls had a better mean score than the experimentals (Wave I of first year students).

*Early Childhood Education

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Significant differences were evident at the .05 level for the second group of children, however, one should bear in mind that they had only progressed through the first grade at the end of post testing.

Paul Street (1971) worked with Kentucky hill children ranging in age from three to five years. At the end of the first grade a control group receiving only first grade experience was compared with those receiving preschool experiences. The disadvantaged children receiving preschool did not excel significantly beyond those receiving only first grade experiences in grades received from their teachers.

Herbert Sprigle (1968-69) tried to determine the effectiveness of a new sequential learning program upon the achievement of culturally disadvantaged preschool children. His post test of Stanford-Binet scores at the end of the program and follow-up tests at the end of the first grade did trend toward the "wash-out effect". However, his experimental group did maintain a significant (statistical) developmental superiority at the end of the first grade.

Robert Spaulding (1972) studied the impact of early intervention plus follow through on cognitive gains in an ungraded primary program. His experimental group demonstrated that cognitive maintenance was highest the earlier the child entered the program (2 years of age). His results were also interesting in that although they had achieved "average intelligence" his experimental group did not significantly outperform the academic group at the end of the second or third year of primary school. Results such as these would lead one to suspect that motivational factors may have been operating to nullify transference of IQ gain to academic gains.

So far we have reviewed thirteen studies some of which are longitudinal or consist of pre-post test research on cognitive gains. All

programs did demonstrate that significant gains could be observed at post test time. However, those studies pursuing the maintenance of gains once the program ended (Gray and Klaus, 1970; Karnes, et al, 1972; Bereiter and Engelman, 1970; Spicker, 1970; Street, 1971; Sprigle, 1968-69) tended to find the "wash-out effect"; that is, children receiving intervention programs did not maintain their cognitive gains over controls as they progressed through the primary grades. If learning is reflected in the cognitive measures and is cumulative as an additive arithmatic progression, the differences would tend to become insignificant as the progression develops and cumulates. It should be noted that some studies did maintain their gain during longtitudinal follow-ups. They included Beller (1972) and Rodman (1970). Thus six longitudinal showed "wash-out effects" while two showed maintenance effects during follow-up testing.

Other studies reviewed were not included in the final tabulation because they were not longitudinal in the sense of having terminated the program and subsequently preferring follow-up testing.

Several methodological problems exist with most of the studies reviewed above including the lack of control for observer bias. While the Stanford-Binet purports to measure intelligence, the question of what intelligence is and how to best measure it ensnarl the results of all the above studies. Even if intelligence is changed, does this lead to a change in achievement? How does motivation impact the picture? Are you only measuring the effects of learning or are the changes observed real changes in intellectual potential?

While some of the above questions remain to be answered and are basic to understanding the results of the various studies, the appearance of the "wash-out effects" has led to the examination of the home environment

and its impact upon the development of the disadvantaged child.

Early emphasis centered around the interaction of mother and child. Research in general indicated that parents in disadvantaged homes were less likely to play verbal games with their children (Stendler-Lavatelli, 1968). C. Reutsche (1968) found that they were also less likely to label objects, point out the distinctive properties of stimuli and subtle differentiation between stimuli. M. Reutsch (1963) had previously pointed out that this restrictive environment corresponded with poor perceptual discrimination skills; inability to use adults as sources of information, correction reality-testing and as instruments to satisfy curiosity. He further observed that the poor environment (child-parent interaction) corresponded with impoverished language-symbolic systems, a paucity of information, lack of adequate concepts, etc.

Because the above information came to the forefront in the 1960's several investigators sought to involve parents in their programs by having assistants enter the home for weekly training sessions so that objectives of the preschool programs would be carried over in the home. Other investigators switched from classroom type setting to parent-training usually in the home. Both processes were an attempt to overcome the previously described poor home environment by involving parents and training them as co- or prime educators of their children.

One of the first investigators to work parents into a combination program was Susan Gray (1970). Her data did indicate that the children maintained their superior cognitive skills but as they progressed through the primary grades, variance in the abilities of the two groups (control and experimental) increased until statistical significance was wiped out.

Merle B. Karnes, et al (1970) established a twenty month training program which provided parents with games, curriculum, etc. to stimulate the development of their children. In this setting the parents acted as the prime educators of their children. Results as measured by the Stanford-Binet indicated a 16 point IQ gain over controls, however no follow-up testing could be found in the literature.

Susan Gray (1971) and her associates developed a home visiting program and contrasted it with an assembled preschool program, siblings of those children receiving intervention at home, and two control groups. Results of the study were complex, however, three major findings seemed to emerge.

- When mothers were involved in the assembled preschool, their involvement did not increase their child's performance on the usual test of intellectual ability.

- Home intervention at a later age appeared not to be as effective in raising IQ as intervention when the children were younger. Two groups consisting of program children and their younger siblings demonstrated superior performance. Because of this finding Gray concluded the highly economical treatment of the home visit appears to function as well for the younger children as a preschool program involving an older child and his mother

- Children whose mother's were involved in the preschool program maintained their IQ gains over those not involved in the program. Gray thus concluded that possibly mothers may help maintain IQ gains over long periods of time.

Ralph Scott (1973) initiated two types of programs and a control group of siblings to evaluate the impact of various settings or

procedures upon preschool children. His home start subjects started between two and five years of age while his preschool children started at four years of age in a classroom setting with no parental involvement. Scott ultimately concluded that in general the length of the program - that is the younger the child entered the home start program the more positive the results. Secondly, that home start programs may reach more vulnerable children than preschool programs.

Ira Gordon's (1972) work started in Florida in 1966 with 200 disadvantaged mothers and their infants living in rural areas. Both the control and experimental populations were selected from hospitals when the infant was born, by pulling the hospital admission forms coded as "indigent." No cases with multiple births, complicated deliveries , evidence of mental retardation or maternal mental illness were included in the study. Assignment to the experimental or control group was random.

The families in the experimental group were visited in their homes for one hour each week by a "parent educator". In addition to the weekly visit, when the child was two years old he started attending a "home learning center" with four other children for four hours a week. The parent educators were professionals for half of the experimental group and paraprofessionals for the others. Within each of these groups another split was made - either the parent educator taught the mother to work with the infant or the parent educator worked directly with the baby. Housing, health and parent's self-esteem were also investigated in relation to the child's IQ gains.

After five years some of his findings indicated that:

- Parents are generally devoted to their children and are looking for ways to improve their lives.
- Many parents are doing the right things as a result of "folk traditions".

-It is important for children and parents to feel that they have some control over their lives and circumstances.

- Housing density is related to infant's achievement on the Griffiths IQ scale (IQ increased as density decreased) and maternal discipline increased as space per person increased.

- Experimental families have higher expectations for their children as a result of the program and also attempt to get more books and magazines.

- Professionals worked better with baby girls but with the para-professionals there wasn't any significant difference in the gains of girls over boys.

- If the child was taught by the parent educator without the child and adult interacting the task proved significantly detrimental.

- If the mother taught the activity and there was a back and forth exchange with the baby it correlated highly with later test scores.

- Any action by the baby followed by a warm maternal response was highly positive.

- The mother's self-esteem had an impact on the performance of boys but the mother's skills were more important in the performance of baby girls.

Phyllis Levenstein (1970) compared three groups of children. The experimental group received verbal stimulation with mothers as prime therapists. The first comparison group received non-verbal stimulation and the second comparison group received no stimulation. The children were primarily Black and were started in the program at about two years of age. Post test data indicated a general IQ gain of 15 to 16 points over the two comparison groups.

Levenstein, Kochman and Adelman (1972) later repeated the experiment in the field. No control groups were used but baseline data and National norms provided a means of evaluating results. Levenstein and her associates found an increase in IQ from 89.8 to 106.0 as a result of program intervention. This gain corresponds closely with their previous gains and

demonstrated that mother-child home programs were as cognitively effective, at least in the first year of operation, as the original laboratory model reviewed above. Levenstein concluded that the two to four year old period is a critical point for the child's cognitive development and that home is the logical setting and mother is the proper education agent for stimulating good cognitive growth.

As we reviewed the available literature relating to parents as the prime educators of their children it becomes apparent that immediate gains are realized at the end of the programs and that these gains are comparable to those achieved through intensive early preschool programs. However, little follow-up information is available concerning the sustaining power of these gains through the primary grades. The hope is that once parents become aware of the major role they play in influencing their child's cognitive development, their awareness will perpetuate continued support and hence the gains may be maintained. Dr. Lally (1972) warned that while home intervention programs do hold forth much promise for solving some of the problems not overcome by early education programs in school settings, they also should not be viewed as a panacea.

Table 9 provide for a more comprehensive overview of some of the studies previously reviewed. Their inspection may help the reader answer additional questions that might have arisen.

TABLE 9

Experimental Studies Concerning Cognitive Development

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Investigators	Race & Number	Age of Subjects	Type of Program Intervention	Measurement Dependent Variable(s)	Results
Susan Gray Rupert A. Klaus (1970)	Negro (88)	Pretest - 4 & 5 years old at start of intervention. Intervention of 2 & 3 year olds. Posttest - last evaluation at 4th grade	10 week summer program for 2 or 3 summers and a month (2 to 3 years) home intervention program with parent as co- or prime therapist.	Stanford-Binet	Group means continue to maintain differences with only wider variances occurring through time. Last measurement at 4th grade showed no significant difference.
Merle Karnes James A. Teska Audrey S. Hodgins Earladeen D. Bodger (1970)	Negro (28) Caucasian (2)	Pretest - 12 to 24 month toddlers Post test 3 to 4 years of age	20 month parent training program providing parents with games, etc. to stimulate development of their own child - parent as prime therapist.	Stanford-Binet ITPA	Experimentals showed a 16 point IQ gain over controls on Stanford-Binet. Control group fell 6 months behind experimentals on ITPA results.
J. Ronald Lolly (1973)		Pretest - prenatal to 48 months of age. Post test - 36 months	Use of Classroom arrangements with men and women care givers plus home visitor for early intervention. 3 groups including control was used	Stanford-Binet	Program children from center scored at 36 months - testing 12.8 IQ points above controls but were outscored by a high educational group by 13.8 IQ points (H.E. = 100 IQ or more
Merle B. Karnes James A. Teska Audrey Hodgins (1970)	Disadvantaged children (60)	Nursery School age-4 year old. Pre & post - 8 months program	Four approaches were compared: 1) Traditional 2) Community - Integrated 3) Montessori 4) Experimental	Stanford-Binet ITPA PPVT	Experimental approach ranked highest on Stanford-Binet&ITPA. Second highest on PPVT. In general Montessori approach showed few gains and was the lowest of the 4 comparison groups.

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TABLE 9 --continued

Investagor(s)	Race & Number	Age of Subjects	Type of Program Intervention	Measurement Dependent Variable(s)	Results
Kuno Beller (1972)	Black children (90%) 163 children	4, 5 & 6 year olds	Types of Programs 1) Nursery school 2) Kindergarten 3) Controls entering first grade	Stanford-Binet	Those attending nursery school maintained gains over kindergarten and first grade entries.
Louis T. DiLorenzo (1969)	Disadvantaged children Black & white 1,800 children	Started at 3½ to 4½ years	Types of preschool programs: 1) Cognitive-oriented 2) Nursery-oriented 3) Early childhood oriented	Stanford-Binet & Metropolitan Achievement test	Only cognitive programs had an impact. They were able to close some of the gaps between advantaged and disadvantaged but only by less than half the difference.
Paul Street (1971)	Kentucky rural children - 3 to 5 years old 308 children	3 to 5 years old	Types of Programs: 1) Preschool including Kindergarten 2) Control entering education at first grade	Achievement as indicated by teacher grading	No differences were observed at the end of the first grade.
Herbert Sprigle (1966-69)	Negro Children 72 children	5 year olds	Types of programs: 1) Experimental 2) Traditional 3) No program control	19 measures i post-test including Stanford-Binet	Experimental group was superior to control groups however, a trend toward the wash-out effect could be observed at the end of the first grade.
Robert Spaulding (1972)	Black & white disadvantaged children 384 children	2 to 6 years old	Types of programs: 1) Education improvement program (classroom model) 2) No early education	Stanford-Binet	As children continued through program, experimentals maintained IQ while controls lost. The earlier intervention started the less loss was observed. controls lost about 15 points in IQ by 5 years of age. Achievement scores however, showed no difference between experimental and controls after 2 or 3 years of primary.

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Investigators	Race & Number	Age of Subjects	Type of Program Intervention	Measurement Dependent Variable(s)	Results
Merle B. Karnes R. Reid Fehrbach James A. Teska (1972)	Disadvantaged children (60) 2/3 Negro 1/3 White	First Testing at 4 years old and last tests at 3rd grade (5 year follow-up)	As above	Stanford-Binet	Cognitive gains decreased as child progressed along until no differences were observed between two groups at 3rd grade level.
Carl Bereiter Seigfried Engelmann (1970)	Negro	4 and 5 year old children	Comparison of: 1) Traditional preschool and kindergarten 2) Academic force-feeding program	Stanford-Binet	Results included immediate gains of 19.74 IQ points, however more recent testing has shown a reversal (1973) with the traditional group above the distar group.
Howard Spicker (1970)	White (139)	5 year olds with IQ from 50 to 85	Three types of programs were compared: 1)Controls with no program 2)Experimental preschool 3)Kindergarten	IQ gains	Immediate post test showed significant IQ gains yet both, kindergarten and experimental groups began to show wash-out effects after first grade.
Frank Kodman, Jr. (1970)	Applachian Children (50)	4 & 5 year olds post test 3 years later	Types of Programs: 1) Control 2) 1 year public school 3) 1 year preschool and 2 year public school 4) 2 years preschool and 1 year public school	Stanford-Binet	Following through 2 years of public school - decreases noted in sub-groups, but in general, gains were maintained.

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TABLE 9 --continued

Investigator(s)	Race & Number	Age of Subjects	Type of Program Intervention	Measurement Dependent Variable(s)	Results
Susan W. Gray (1971)	Negro	Began at 3½ years	1) 2½ year program for 40 weeks a year 2) Same as above except parents also acted as teachers at preschool 3) Weekly home visits 4) Proximal and distar control groups	Stanford-Binet	Group 2 showed 13 IQ point gain over control groups (4). Group 2 not superior to group 1. Mother involvement impacts younger siblings.
Ralph Scott (1973)	Negro (98) White (62) 160 children	4 year old children in classroom. 2 to 5 years of age in home start program	1) 4 year preschool preparatory program 2) Home intervention multi-disciplinary team. 3) Not treated. Siblings as controls.	Primary Mental Abilities	The home intervention program in general was more effective than the 4 and 5 year old preschool. Implications were that the longer the program and the greater the parent involvement the more durable the gains.
Phyllis Levenstein (1972)	Negro & White 37 children	2½ to 4 years of age	1) Mother-child home program 2) Controls using National norms and baseline data.	VIP (Cattell, Binet & PPVT).	Gain at post test time of 16.2 IQ points. Preschool is most effective at from 2 to 4 years of age.
Phyllis Levenstein (1970)	Negro (about 90%) 54 children	20 to 43 months at beginning of project	1) Experimental - Verbal stimulation intervention 2) Comparison - non-verbal stimulation intervention 3) Comparison group- no stimulation intervention	Stanford-Binet	16 and 15 point IQ gains over comparison groups. Learning can take place in the home with the mother acting as prime educator
David P. Weikart (1971)	Negro disadvantaged	4 years old at beginning-3rd to 7th grade at end of study	1) Preschool intervention program 2) Controls not receiving program	Stanford-Binet	IQ gains washed-out by 3rd grade but achievement differences were still evident at 3rd. Emotional and social skills maintained through improved status.

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By reviewing the census data for Idaho at least two interesting facts relating to poverty and children emerge. First about 10.96, or almost 11 percent of all Idaho families with children below 18 years of age, are living at or below the poverty level. Secondly, when there is a female head of the household with children six years of age or below, the family's likelihood of being at or below poverty level is 62.7 percent. Younger families are likely to have less economic resources hence the 11 percent in poverty is probably a minimum estimate of families in poverty with young children.

The consumer survey revealed that 10.2 percent of the children involved in the survey were lagging in cognitive development. This figure includes infants whose development may not have progressed significantly to reveal developmental lags.

When one contrasts poverty to cognitive lag as measured by the expressive language scale and information scale (PAR), the consumer survey found that only 21 percent of Idaho children with cognitive developmental lags were at or below poverty level. The poverty criteria utilized was the same as that used in the 1970 census.

Another way of looking at the relationship of lags to other factors is simply to contrast it against income level. Table 10 below provides this information.

Table 10

Cognitive Lags as Related to Parental Income Level*

Income Level	No Lag	Lag	
0 - $4,999	151 (159)	26 (18)	177
5 - $11,999	867 (868)	101 (100)	968
$12,000 and above	293 (284)	24 (33)	317
	1,311	151	1,462

*Number in parentheses indicates expected frequencies of occurrence

d.f. = 2 x^2 = 6.709 p .05

A quick calculation of the significance of the economic factor (using chi square) reveals that it is significant at the .05 level. However as we have previously observed it is not a potent factor for the selection of those who may need early intervention. It is apparent that there are a substantial number of children in all economic levels who are in need of intervention. For Idaho, which is a relatively homogeneous State, 79 percent of the children who may potentially need intervention are above poverty level.

CREATIVITY - COGNITIVE STYLE AND PROBLEM SOLVING

Cognitive style dimensions usually refer to self-consistent and enduring individual difference in cognitive organization and function. Elements of cognitive style may include memory (short and long term), experience, construction or flexibility in problem solving, preference for cognitive complexity or simplicity, for widely known or little known information and preference for broad or narrow categorization (Ausubel and Sullivan, 1970). Not a great deal is known about the development of cognitive style. Muus (1960) reported that highly cause oriented children are more tolerant of perceptually ambiguous materials and tend to arrive at premature closure slower than low causally oriented children. Low causal oriented children tend to make more guesses and their guesses are more likely to be rigid and judgmental in character.

Bruner, et al (1965) think that it is quite possible that consistant individual differences exist with regard to strategy of and general approach to problem solving. They feel that a particular strategy of concept acquisition is generally more likely to occur under some conditions than under others. It may be possible that self-consistent and generalized individual preferences are concommittantly operative.

Age level trends in problem solving approaches have received some investigation. As might be expected the frequency of overt trial and error approaches decline as age advances (Munn, 1954). Insight solutions become more evident and complete with advance in age (Alpert,1928). Lewin (1954) pointed out that they also reflect the widening and greater differentiation of the child's "life space".

Maier (1936) found that an older child's knowledge tends to be organized in terms of more highly systematic, inclusive and self consistent categories, hence he adapts a less fragmented approach to problem solving and is able to bring prior experience to bear on a current problem.

More recent research has been conducted by Ball (1971). She included 147 children, three to five years of age, in her research design. Through a factor analysis approach and longitudinal follow-up she concluded that predictability of development for each child was very poor. It might be expected that children who do relatively better than their peers on a specific aptitude at age four will also maintain their relative superiority at age five. Bell's data, however, did not confirm this hypothesis. Through correlation of factors and a conconical correlation the hope for a high predictive level was not sustained. One specific finding shows the complexity of factors involved. Bell found that homes having few or only children produced children exhibiting more imaginative qualities than other children. However, divergent productive aptitudes show little development in contrast to higher convergent productive development. Because of these findings Bell concluded that American culture does not provide optimum stimulation for the development of spontaneity, flexibility and originality of expression. Hence socialization tends to emphasize the importance of giving the "right" answers, following directions and copying models.

Cooperation has been investigated by Greenberg (1932) and Leuba (1933). Both researchers found that rivalry over affection and attention of adults is exhibited early in the child's developmental repertoire. They found, however, that true competitors, in the sense of performance, first appears between the ages of three and four. Thereafter the children gradually

internalize from the competitive norms of our culture, a desire to excel and competitiveness becomes an increasingly characteristic feature of their response to peer activities.

Wynne (1971) has discussed the problem of competition and cooperation and how it relates to students and their later occupational achievements. He presents no data but states that "my experiences and my professional studies have convinced me that present educational practices give students insufficient training in cooperation efforts, negotiation skills and the nature of professional work."

He states that the whole effort at cooperation may be complicated by numerous variables including money, common commitment, desire to achieve a common goal, determination of leadership, responsibility, etc. Wynne has developed a curriculum at the college level to encourage cooperation, negotiation and organization. His experiences with the curriculum indicated that some students can handle a situation in which they need to develop structure in order to complete the task. After experimenting with group cooperative efforts, Wynne concluded it is too bad that there is not a succession of courses beginning with first experiences that help build cooperation, negotiation and organizational skills.

We must agree with Ausubel and Sullivan (1970) that the development of temperament and personality are presumably important in determining cooperation and competitiveness, however, there seems to be little systematic attention to these attributes in the developmental literature.

Creativity is one of the most vague, ambiguous and confusing terms in psychology and education today. It has been applied to persons with broad unique approaches to a variety of situations or to individuals having

an outstanding trait or ability in certain specific areas of human endeavor.

Personality correlates with creativity vary widely. On the cognitive side creative individuals tend to be original, perceptive, insightful, independent in judgment, open to new experiences, skeptical and verbally facile. They are described as flexible, openminded and tolerant of ambiguity They also have wide ranging interests; they prefer complexity, shun small details and delight in theoretical ideas and symbolic transformation (Drevdahl and Cottell, 1958; MacKinnon, 1960-61-62).

D.W. Bishop and C.A. Chase (19) studied seventy-two - three and four year old children enrolled in a nursery school program. One hundred-nineteen parents of the children also participated in the project. Their results indicated that mothers classified as more abstract were more likely to have positive attitudes toward flexible, autonomous and complex play experiences for their children and were more likely to report that such experiences were provided in the home. The children of such mothers were more likely to display complex and varied choice behaviors on a performance task. They felt that this finding indicated that perhaps the child's potential creativity was related to an apparently stable personality characteristic of parents in the home environment.

Torrance and Phillips (1969) attempted to stimulate creativity as measured by elaboration in four and five year olds. The results were conflicting for the two age groups as followed over a three year period. Hence the question arises, as in cognitive growth, if gains can be sustained after program termination.

Skipper (1970) in a rather narrow sense of creativity was able to observe more creativity in 188 - eight, ninth and tenth graders who enrolled

in a many faceted art program. His three year follow-up indicated that the experimental groups excelled in fluency, flexibility and originality.

Greenberg, et al (1970) have tried to investigate relationships between the above variables. In so doing they examined the relationships of creativity, cognitive style, personality and motivational variables. The subjects were enrolled in grades one through three. They found that alertness to the environment was more strongly associated with problem solving flexibility (PSF) in boys than in girls. High PSF children showed better recall for novel information and were rated higher on curiosity by their teachers. Boys scoring high on the PSF were also characterized by being more intrusive, active and assertive. The same characteristics were present for girls but somewhat more subdued. PSF was associated positively but weakly with IQ not related to tested anxiety and positively correlated with achievement.

From the foregoing discussion it is apparent that we are not completely aware of the complexities of creativity including its emergence and environmentally associated factors. While creativity, problem solving flexibility and cognitive styles are at times discussed as independent constructs, it is apparent that they are associated and may represent only one major construct.

SOCIAL DEVELOPMENT

Under the general rubric of social development one can pursue the environmental factors contributing to personality, emotional development and moral development. Each of these categories can be further defined and environmental agents impacting upon specific traits can be discussed.

Murphy, et al (1962) have given us an outline of the developmental steps through which young children progress. According to Murphy and her associates, by three to four months the child is able to manage his own body. At about this time there is early differentiation of self from environment. Between three and six months of age clear signs appear that the child receives pleasure in being a cause: that is, he has begun to manipulate his environment to obtain certain outcomes such as getting action from his mother. At around six to ten months of age, with the onset of teeth, setting up and separation anxiety, the child begins to relate differently to his regular caretakers, such as his mother or father. By the end of the first year and the beginning of the second year, the child develops locomotion and the independence associated with mobility. Following this at about two and one-half to three years of age children have developed highly individualized patterns, defense mechanisms and coping styles. Murphy and her associates concluded that individual differences between children in management of new and strange circumstances are clear cut by three years of age.

Ricciute (1969) has reviewed articles concerning emotional development through the first two years. From the review he concluded

that such negative emotions as fear of the strange and unexpected or fear of maternal separation, certainly can be regarded as having some adaptive or survival value for the infant in that they alert him to potential danger and impel him to act in ways which may help him to avoid such danger.

Biller (1968) has pointed out sex role orientations, that is knowing what belongs to the role of one's sex, is acquired, for the most part, between two and three years of age.

Schopler (1966) observed a sharp increase in the use of distance receptors, especially visual, between the age of three and six years.

The major source of learning about the rules of human relations is in direct experience of them. Hess and Shipman (1965) quote Bernstein who argues that the structure of the social system and the family shape the child's code for human relations (value system development). The child develops rules in respect to the construction of social relations that are consistent with those experienced.

Likewise DesLauriers and Carlson (1969) also advanced the idea that the child would start learning, not by being taught anything special but by being exposed in an atmosphere of effective and sensory stimulation involving a wide variety of experiences.

Wolman, Lewis and King (1971) studied the internalizing of social controls. Their subjects (children) reported that conditions stimulating emotions occur more frequently within themselves as they grew older. They found that the internalization process was smooth with no

significant period at which it suddenly occurred. They also found that intelligence, socio-economics class, birth order and school performance showed no signs of systematic roles in the child's ability to free himself from reliance on external arousal cues.

It is difficult to determine the necessary environmental factors to propagate a healthy personality. In part this is because during the past four decades studies in personality and emotional development have centered around the development of neurosis or psychosis. The small amount of psychopathology in early childhood is often related to organic deficiencies and difficulties that prevent the normal unfolding of social adeptness. For example Maller (1968) states that infantile psychoses is not to be thought of as a psychotic process induced by an emotionally disturbed mother. Along the same line Ornitz and Ritvo (1968) speak about a failure of homeostatic regulation of sensory input as underlying the deficits found in autistic children. They suggest that autistic children may provide their own input by their characteristic preoccupation with spinning and whirling objects.

The general question of the relationship of early environmental occurrences and their influence upon later behavior still remain. Correlative studies such as the one conducted by Jordan (1971) have revealed certain relationships. Jordan used a variety of events and circumstances prenatally and neonatally to predict later social outcomes at two years of age. The subtest responsibility proved to have no relationship to prediction factors. However, Jordan did find that creativity was related to biological and social class predictors. Information or knowledge seemed to be related to social class but no other factors under investigation.

Thomas, et al (1968) remarked that there are relatively few instances of psychiatric symptoms appearing before three years of age. A sharp increase in incidents of psychiatric symptoms begins at this time and rises to a peak between four and six years. There is a progressive drop in new cases of children with behavioral disorders after this age.

It would appear from Thomas' study that preventive intervention during the first three years may be helpful in resolving later emotional-personality problems.

Studies concerning young children during the first few years of life have provided information that social-emotional stability may be in jeopardy during infancy under certain environmental conditions.

Yarrow and Goodwin (1973) observed infants transferred from a foster mother figure to another adoptive mother. Their results revealed that the immediate responses, in the great majority of separate infants, show disturbance less than that noted in institutional studies, but increasing from minimal, at ages below three months, to intense and nearly universal after the age of six months. While this demonstration that a type of dependency or an attachment does exist and that immediate effects are observable - the study did not attempt to demonstrate sustained effects.

Spitz and Wolf (1946) conducted a long term study during which they observed 123 infants each for a period of twelve to eighteen months. Their findings suggest that drastic changes and damage are produced by separation from the mother after a close tie has been formed. Their findings also suggest the closer the tie, the more intense the effect of separation.

Ainsworth and Bell (1972) studied the relationship of mother-infant interactions and the development of competence in eight and one-half and eleven month old infants. They concluded that a mother's prompt responsiveness to her baby's signals tends to foster the development of varied and clear modes of communication and thus the development of one facet of social competence. They also found evidence that the quality of mother-infant interaction influences the quality of the infant's attachment relationship to his mother, and that it also influences the level and quality of exploratory play.

They also concluded that the social responses of infants when played with and cared for by parents, contributes in important ways to the establishment of the social bond or attachment between parents and infants thereby laying the groundwork for mutually rewarding adult-child interactions as well as for adaptive interpersonal relationships later on in life. In contrast with these adaptive and integrative functions, emotional excess and chronic exposure of the infant to conditions generating anxiety, fear or anger under circumstances in which these emotions are difficult for the infant to manage, may well increase the likelihood of difficulty in subsequent personality adjustment.

In short they concluded that in the first two years of life the infant's emotions can be regarded as playing a key role in helping to ensure that the environment provides for his physiological and safety needs. This is accomplished by the establishment of early social bonds and patterns of interpersonal relationships which are of long term importance. They also concluded that at the same time, the emotions represent a major component of the motivational system which underlies

virtually all of the infants early learning and psychological development.

Another facet of social-emotional development involves the early roots of coping behavior. This important area has not received extensive study , yet it may represent one of the most valuable abilities for adaptation to changing social, economic, moral and psychological conditions.

Rothenberg (1971) studied coping behavior of children three to seven years of age. She defined coping ability as actions observable in children's behavior that are expressed in the child's handling unfamiliar and stressful situations and a skill that is seen as likely very influential in an individual's total development, both social-emotional and cognitive development. Her preliminary results show that the younger children, ages three to four years, showed different coping styles than the five, six and seven year old children and that a hierarchy of more or less mature forms of coping could possibly be developed in future studies.

In a follow-up study of coping behavior, Murphy (1971) reviewed the characteristics of mother-child diads including their individual personalities and interactions. The sample was relatively small consisting of 31 babies and 27 mothers. She concluded the following from her research findings:

- For infants the development of a capacity to protest, to communicate discomfort, dislike or needs is part of active coping along with developing some tolerance for frustrations, some capacity to delay and some capacity to struggle to meet one's own needs.

- She also concluded that verbal stimulation does not guarantee a well-functioning child who copes well with the opportunities, demands and frustrations of the environment.

- The total interaction of the child with his environment as he develops is a complex checkerboard of factors from which it is dangerous to try to devise simple formulae for mother-child interactions.

- Relationships are probably not linear but curvilinear in nature.

Longitudinal studies of emotional development are difficult to find however, MacFarlane and Clausen (1971) reported on three studies including the Guidance Study, the Oakland Growth Study and the Berkeley Growth Study. From these longitudinal studies which traced infants from birth to about 36 years of age, several observations or generalizations emerged.

By studying the same individuals over long periods of time the investigators found that those who came down with psychosomatic ailments in adulthood, became mentally ill or showed other evidence of psychological trouble had been reported as having a worse than average adjustment to life at 11 years of age. When these individuals were less than two years old, their families had shown more than average amount of disturbance. One of the investigators reported that a major factor in the onset of psychosomatic illness seems to be a tendency toward depression reaching far back into childhood.

Certain personality traits were found to be present early and persist into the teenage years. The child who at five was either reserved and shy or expressive and gay tended to show the same characteristics at the age of 16 years. The child who was either reactive and explosive or calm and phlegmatic at five was likely to be the same at the age of 16. Boys who at the age of four were friendly social and independent remained so through their adolescence.

Another finding was that early talkers were more introspective as adults, perhaps because language rather than action had always been for them the favored response pattern.

An additional finding of the Guidance Study was that when professional workers encouraged the discussion of family problems, their child tended (as adults) to have more flexible qualities and a better ability to cope with situations. Four times as many divorces were found among the control groups as the experimental groups which received guidance from the counseling service.

It has usually been assumed that the family environment in which children are raised has a significant lasting impact upon their personalities. Environments involving unhappy marriages or divorce are assumed to be less than optimal by many professionals.

Westman, et al (1968) studied 148 cases of divorce involving 105 children. Their findings pointed out that it is not so much the divorce that is disturbing to the child as the nature of the parent's personalities and their relationships with their children. Their finding indicated that about one-third of the divorces involving children were followed by continued conflicts between the parents with significant impact on the emotional status of the children involved. It should be noted that Westman's study indicated that most divorces involving children proceed without manifest incident and presumably with satisfactory financial and child rearing arrangements. Where the parents, on the basis of their own personal maturity or with the assistance of appropriate medical casework and legal counsel, are able to deal honestly, wisely and supportively with the needs of their children, divorce need not have a long range traumatic influence.

In a later study Westman (1972) makes two additional points. He stresses that of greatest importance is the emerging need for divorce counseling, not only for the benefit of effected children but also to

help divorced parents with significant post-divorce problems. He feels strongly that a professional response to the need for specific counseling after divorce has occurred is needed. He also points out that from a preventative point of view potentially traumatic life situations place divorce in an urgent category for the development of prevention methodology.

Esnor (1971) studied strife laden marriages finding that one of the most blatant indicators of such a marriage is the emotionally disturbed child. He found that children in strife ridden families can spot unerringly any tensions in the lives of their parents, and that they have an uncanny feel for the quality of the parents relationship. He concluded that there is good reason to believe that a successfully resolved divorce may in the long run have a healthier influence on the children than the continuation of an unhappy conflict-laden marriage.

KINDERGARTEN

For a diversity of opinions, effective reactions on the part of adults and conflicting results, one need only ask the question - What is the effect of kindergarten upon later performance?

Jones, et al (1967) felt that the reason for diverse and contradictory results may revolve around parameters such as formality and informality of programs; skills focused upon and diversity of curricula.

To give an idea of how some of the research has proceeded and inferences drawn from it, the following few paragraphs will review literature concerning reading readiness etc.

Durkin's work (1961) gave impetus to ECE. She studied a group of children who learned to read before attending school. All had had help from siblings or parents. In contrast Silberberg and Silberberg (1967-68) described children who had learned to read in a seemingly incidental or spontaneous way. They suggested that word recognition was a normal "psychological variant", or in other words, a variable dependent upon maturation.

Along similar lines, Moore (1972) has reviewed empirical evidence concerning success and school entry age. Moore cited the work of Olson (1947) who found that children of the same age and the same grade locations are regularly found to differ by as much as four to five years in their maturation and their readiness to perform tasks.

Davis (1952) studied 239 first grade children's achievement in arithmetic and reading as related to their age. His results showed that the older the child, the greater his achievement and fewer errors committed on standardized tests.

Other comparisons of reading achievement of early and later studies were made by Carroll (1964) in the third grade, Halliwell and Stein (1964) in the fourth and fifth and Hampleman (1959) in the sixth grade. All found, generally, that later entrants significantly excelled those who started school earlier. Other studies by Carter (1956) Baer (1958) and Green and Simmons (1962) have found similar results.

After reviewing these results Moore (1972) concluded that except for the handicapped or severely deprived, research provides scant evidence of lasting benefits from early schooling. He also concluded that empirical evidence favors later admission for normal children. In addition, he reviewed literature which led him to conclude that early entrance leads to a greater likelihood of regression of motivation as the child progresses through school.

McKee, et al (1966) in a study of the long-term effects of reading readiness training, found that the effects of such early training persisted through the primary grades. However, this is the only study reporting long-term benefits and it therefore requires replication.

Selberberg, N.E. et al (1972) conducted a study which followed the kindergarten students to the end of the first grade. At that point they concluded that the special kindergarten training in letters and numbers had no discernible effect upon end-of-first-grade reading. They point out that their results are analogous to those obtained in investigating other aspects of reading and demonstrated the danger of drawing conclusions from cross-sectional studies as opposed to longitudinal determination of benefit. They pointed out, as have other researchers, that short term studies may merely reflect the results of teaching tasks specifically related to criterion evaluation (test-teaching).

A review of recent articles conducted by the Idaho Office of Child Development found an almost 50/50 split with some programs claiming success during or at the end of the first grade and the remaining 50 percent found the "wash out effect". Studies following the children farther than the first grade, predominantly found the effects of kindergarten washed out by the fifth grade. Studies were taken from a review by the University of the State of New York, Department of Education, Bureau of Child Development and Parent Education, Albany, 1964.

The same report cites a study by Paul E. Mawhinney (May, 1964) which followed 386 students for 14 years. The students were evaluated on social, emotional, academic and demonstrated leadership qualities. Mawhinney's findings indicated that 30.6 percent of the early entrants were considered to be poorly adjusted. Four and six-tenths percent were judged to be outstanding leaders, while 74.4 percent were considered to be lacking entirely in leadership ability. They also found that 24.4 percent were superior academically while 25.3 percent were either below average or had repeated a grade. These statistics are interesting because all 386 participants were considered bright and approved for early entrance into kindergarten. Mawhinney noted that the early entrance policy was abandoned because of the findings and parent disapproval.

At this point there does seem to be a strong case for later entry into the system. This type of approach would correspond with Piaget's work on cognitive development and present knowledge concerning development of cerebral cortex functioning.

Our consumer survey found that 58.3 percent of the five year old Idaho children attended public or private kindergarten during 1972.

In an appended question asking what services Idaho parents would like to see available for their children, 74.2 percent mentioned that they were in favor of more public kindergarten; 4.8 percent indicated that they would prefer privately operated facilities.

Table 11 below presents information concerning the growth of kindergartens in the State from FY 1970 to FY 1973. It should be noted that the FY 1973 statistics were projections and that the lower projection was based upon the anticipation by private operators that public kindergartens would be provided through legislation.

Table 11

Kindergarten Growth in Idaho

	1970	1971	1972	1973*
Total Facilities	146	173	220	194
Total Number Served	4,818	6,533	7,691	6,719

*Projected Growth Rate

The figures from 1970 through 1972 represent actual growth. Table 12 below provides additional information concerning public support, the number operating at capacity, those having special criteria for admission and the number having sliding fee scales.

Table 12

Idaho Public and Private Kindergarten Profile
(1972)

	Number	Number having Public Support	Number Operating at Capacity	Number having Special Criteria	Number having Sliding fee Scale
Kindergarten Programs	201	37	64	18	16
Kindergarten with Developmental Programs	19	18	6	15	2
Total	220	55	70	33	18

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There is little doubt that the impetus toward kindergarten has built over the past few years and that regardless of its merits or lack thereof, it is a popular program with parents.

HANDICAPPED CHILDREN

Skeels (1966) has reported perhaps one of the most lengthy intervention studies concerning handicapping. While his experimental and control groups were small in number (11 and 12 respectively) the follow-up results were extremely impressive. After the experimental group received early developmental intervention and were placed in adoptive homes they were compared with the twelve control children who stayed in the orphanage. Over a period of two years during the intervention the experimental children showed a marked increase in rate of mental growth, whereas the children in the contrast group showed progressive mental retardation. The experimental group made an average gain of 28.5 IQ points while the contrast group showed an average loss of 26.2 IQ points. Two and one-half years later the difference still seemed to be about the same between the two groups.

Thirty years after the study, Skeels initiated a follow-up and found that all of the experimental group was self-supporting while one of the controls died during adolescence and four were wards of institutions. Educationally the control group obtained a median of less than the third grade. The experimental group in contrast had a median completion level of the twelfth grade. Economically the control group attained a median institutional cost of $890.22 (mean of $2,367.75) while the experimentals attained a median institutional cost of $9,108.50 (mean of $11,547.64). The study revealed that the experimental group had a yearly average income 2.5 times higher than the control group.

One of the earliest studies concerning the impact of physical care as opposed to mother-child interaction was conducted by Spitz (1960). The experimental group was raised in a "nursery" environment by their own mothers. The control group was reared in a "foundling home"

from the third month of life by overworked nursing personnel (one nurse cared for 8 to 12 children). At the end of the first year of life the developmental quotients (IQ) of the infant control group had dropped to nearly 30 points below the experimental group. One of the most impressive results found that 37 percent of the control children died during the two year observation period.

One of the more recent studies conducted concerning the impact of early intervention upon handicapping is the Milwaukee Project. Its directors (Rich Heber and Howard Garber) used an experimental group and a contrast group. All subjects consisted of high risk infants. The program provided through the project, is complex and was reviewed by the investigators at the National Leadership Institute Teacher Education - Early Education under the sponsorship of the University of Connecticut. Heb er and Garber (1973) reported that the control group had an average IQ of 91 at 66 months of age while the experimental group had achieved an IQ level of 123.4 at 66 months of age. What remains to be seen is if these gains will sustain themselves as those of Skeels experimental group. Nonetheless the present results are impressive with a 32.4 point spread between experimental and control groups.

Evans and Bangs (1972) have recorded a follow-up study of the impact of preschool intervention upon potential learning disability children. They enlisted 3 to 6 year old children as subjects and provided at least two years of intervention. In the follow-up study they compared the achievement of "normals" against experimentals and controls at about the third grade level. Their results found that 75 percent of the "normals" were at or above grade level. Experimentals were close behind with 70 percent of them being at grade level or above. However, controls who did not receive the early intervention program demonstrated that only 18 percent

were at grade level or above. The results seem to indicate that early intervention for potential learning disabilities does have lasting impact.

Goldfarb (1945) compared children who had been institutionalized up to three years of age with those that had been placed in foster homes shortly after birth. Four age groups were investigated:

1) Between three years and three years and seven months
2) Six years and seven months
3) Eight years and five months
4) Twelve years and two months

Goldfarb's results tended to verify that inferior intellectual performance was characteristic of institutionalized children at all ages. The median IQ for those children institutionalized during the first three years and then placed into foster care was 75. The low IQ did not vary significantly between younger (6-11) and older (11-18) children - remaining about constant. Concept formation, especially with relationship to abstract thinking and generalization, appeared to show the greatest differences.

Samuel A. Kirk (1958) initiated a rather extensive study of the young mentally retarded child (3-6 years of age) and the impact of an early education program upon their later (first grade) performance. Kirk found that the ECE program increased the IQ of the experimental group significantly beyond the contrast group on the Binet, Kuhlman and Vineland scales. Kirk did conclude that it was more difficult to modify the rate of growth of those organically impaired as opposed to children not having an organic etology.

One of the most recent and perhaps well known projects is the

Portage Project. It was designed specifically for young (0-6) handicapped children living in Wisconsin. The project serves children having behavioral disorders, emotional disturbance, mental retardation, physical handicaps, impaired vision, impaired hearing, culturally deprived and handicapped in the area of speech and language.

While results are not longitudinal, Schearer and Schearer (1972) report average IQ gains of 13.5 to 18.5 with the average child achieving 13 months in an eight month time interval.

Calvert, et al (1972) have reported a special preschool program for deaf-blind children. This represents a special type of multiple handicap and employes specialized techniques both for programming and evaluation. Evaluation of the program was based upon attaining skills such as those required for eating and drinking, dressing, toilet training, playing, etc. The author concluded that the program was successful via attainment of the above criteria, but also explained that its success depended upon emphasizing the total child and developing parental support and counseling rather than communication skills.

In reviewing the available early intervention data for handicapped children and its impact upon their intellectual attainment, it becomes apparent that we do have positive evidence that such intervention is beneficial. However, the real longitudinal studies contrast very different environments for early rearing and as of yet we have no overwhelming body of evidence that traditional programs have prolonged impact. Within the next decade such information should emerge from studies now being conducted under the sponsorship of the Bureau of Education of the Handicapped. Additional longitudinal follow-up studies are badly needed,

especially with investigation of parameters such as time of intervention, differential diagnosis as related to differential treatment and extent of amelioration.

From the above research we can also glean the indication that early inappropriate child-adult interactions pose a serious threat to the attainment of that child's full potential. It may be that social reinforcement of parents may prove to be one of the most effective intervention tools for early amelioration of handicapping.

The extent of handicapping among young Idaho children is difficult to assess. Two procedures have been used to estimate the extent of handicapping.

The first procedure was to ask parents during the clientele interview if their young child had any handicaps. The results are recorded in Table 12 located in Appendix I. From this table one can observe that speech and orthopedic handicaps were most frequently reported by parents. Visual and auditory problems far exceeded the reported prevalence of mental retardation. Ultimately this finding is inverted as children enter school and better evaluative diagnostic procedures are available. Those children previously reported as evidencing developmental lags will probably demonstrate functional retardation in the elementary grades.

The second approach for finding out approximately the type of handicapping present in Idaho is to simply review the diagnostic data obtained by three of the seven child development centers located throughout the State. The centers used to obtain the data were located at Idaho Falls, Boise and Coeur d'Alene. Table 13 below is a composite of the data obtained from the multidisciplinary diagnostic centers.

Table 13

Clinical Diagnosis of Children Receiving Services at Region I, IV and VII Child Development Centers by Age of Child. (1972)

Age Group	Mental Retardation	Learning Problems	Speech Problems	Blind or Deaf	Behavior Disorders	Multiple Handicapped	Dysfunctional Family	Physical Problems	Total
0-4	28	9	43	12	16	29	20	25	182
5-9	100	63	79	11	51	57	50	42	453
10-14	81	53	38	10	29	43	31	28	313
15-19	65	18	21	5	14	28	19	18	188
20-24	70	10	24	7	3	39	20	26	199
Totals	344	153	205	45	113	196	140	139	1,335

Total Cases Considered:

Region VII N=190
Region IV N=252
Region I N=130

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This table can be used to assess the types of problems observed in children referred to the centers. It give us an idea of the type of problems which have motivated parents to have diagnostic workups for their child. They represent more the demand for services than prevalancy of handicapping types.

CHILD CARE

Ruderman (1968) has reviewed literature on social biases concerning the working woman. A traditional and long standing argument has been that for a wife and mother to work outside the home and to earn money independently of her husband would weaken the family by depriving the husband-father of his traditional predominance and undermine his self-esteem.

More recently, writers and social scientists (Ruderman) have argued that the negative consequences have not shown that some women have a personal need to work, and that in a free society all have a right to self-fulfillment.

Ruderman's review revealed that in general, studies have found the following:

- There is no higher rate of delinquency among children of working mothers than among children of non-working mothers.
- Husbands and children become more involved in housework and other domestic chores when the wife-mother works, but there is no blurring of basic role distinction.
- Most studies suggest that there is little or no change in husband-wife or parent-child relations and that the social development of children is not impaired or improved.

One of the first statistical studies describing child care arrangements was jointly conducted by the Bureau of the Census and the Children's Bureau DHEW (Lajewski, 1959). From the study emerged a large scale picture of supplementary child care in the United States. They found that most child care was given by relatives and that care was generally given in the home. Non-relatives provided for about one-fifth

of the care. Eight percent of the children had no arrangements made for them i.e. they were expected to care for themselves. Group day in nursery schools, day care homes and centers accounted for only about two percent of the care.

Later studies (Keyersling, 1971-72) demonstrated a shifting demand toward day care group homes and centers. For preschool children, 50 percent were taken care of at home, sometimes by fathers who worked at night. Thirty percent were taken care of in the homes of other people and 15 percent of all children under six years were taken by their mother to work. There is a remaining five to six percent that were cared for in group centers.

Keyserling (1972) has provided us with a National view of the economic impact of working mothers upon their families' quality of life. She found that most mothers seek jobs for compelling economic reasons. According to her, 7 percent of the families would have dropped into poverty without the supplementary income. With the additional supplemental income 33 percent of these families would have dropped to incomes between $3,000 and $7,000. She finally concluded that three-fourths of the families would have had incomes of less than $10,000 a year had the supplementary income been removed.

Child care appears to be a social phenomena involving economic pressures and the wish of women to attain self-fulfillment in the world of work. Consequently when parents leave the home for gainful employment, the person or persons taking the responsibility for the child become surrogate parents and for the optimal development of the child should provide an adequate environment to stimulate development in language, physical growth and socialization.

A number of investigators have been appalled at the conditions observed in some centers. Keyserling (1971) tells about one home which was licensed to care for no more than six children. When it was visited, 47 children were present including eight infants tied to cribs, toddlers tied to chairs and older children sitting in chairs almost in a stupor. Undoubtedly this represents an extreme case.

Elizabeth Prescott (1972) has tried to evaluate different child care environments to determine which environments have a desirable impact upon children. A necessary prerequisite to optimum outcomes are quality activities. Two of Prescott's associates have reviewed their findings concerning quality day care (Chapman and Lazan, 1971). They indicated that quality is associated with the following factors:

- Size of center related directly to the quality of care. Centers of highest quality were of moderat size - 30 to 60 children. Quality seems to decline once 60 or more children are included in a center.

- With reference to centers proprietary - centers were more concerned with pleasing parents. Family day care seemed to offer more intimate, relaxed experiences and greater flexibility in caring for infants and toddlers than center based day care.

- They reported that quality of teacher performance was directly related to the type and amount of staff training.

The general picture of the demand for child care in Idaho can, in part, be revealed by contrasting census data. For example, between 1960 and 1970 there was a 37 percent increase in the number of eligible working age females in the labor force. In 1970, thirty-one percent of the mothers in the State of Idaho with children below six years of age, worked. Fifty-one percent of the mothers with children six to 17 years of age work.

Table 14 demonstrates the growth of child care in terms of the number of slots availabe during 1970-71-72 and 73. A review of the figures shows a rather constant number of slots added each year. The information was gathered from a sample of 97 centers and homes.

Table 14

Day Care Growth in Idaho*

Type of Facility	1970	1971	1972	1973**
Number served in group day care homes (6-12)	384	486	653	710
Number served in day care centers (12 or more)	1,241	1,399	1,471	1,566
TOTAL	1,625	1,885	2,124	2,276

*Sample of 97 centers and homes
**Estimated numbers of day care operators

During 1972 the Idaho Office of Child Development conducted a random sample survey consisting of two percent of the families in Idaho with children under six years of age. About 1,000 parents were interviewed concerning a variety of developmental concerns including child care. Table 15 presents the resultant findings. As can be observed from the table, group homes and day care centers account for about three percent of the total care, however, one can also note that the highest dissatisfaction rate was with this type of arrangement. But when one asked those who were dissatisfied with their child care arrangements, which type of arrangement they wished, 47 percent chose day care centers.

Table 15

Types of Child Care Used in Idaho and Related Factors (1972)*

	Self care	Sibling care	Relative or friend living with family	Relative or friend from outside home	Hired sitter in own home	Hired sitter outside of home	Family day care home	Group day care home	Day care center
Percent Utilization	17	10	2	26	34	4	4	1	2
Percent Dissatisfied	1	1	6	5	6	9	14	17	16
Alternatives Wanted (dissatisfied only)	0	0	0	5	31	2	10	5	47
Mean Hours of use per month	14	14	37	16	11	50	65	55	81

*Data based on a two percent random sample of families having children 0-6 years of age.

Hence there will probably be a continuing trend toward this type of care. This seems to coincide with the fact that as the number of hours of utilization increases the trend is toward day care homes, group day care homes and day care centers.

UNCO (1973), a research firm based in Tacoma , did a study of quality care in Idaho day care homes and day care centers. With reference to physical safety, they found 47 percent of the centers did not have an approved working fire extinguisher or an available emergency power source. Sixty-seven percent had not had their paint tested for lead content and 47 percent did not know persons with whom the child might leave the facility. Their findings with reference to nutrition and health were as follows:

- Seventy-three percent had no written plans posted for evacuation in case of fire or other emergencies.
- Eighty-seven percent did not have a first aid chart conspicuously posted or emergency phone numbers adjacent to a telephone.
- Thirty-three percent did not offer at least one nutritious meal for children in care for five hours or more, etc.

Idaho Law (39-1211) provides for day care licensing by stipulating "The Department of Health and Welfare shall have the power and it shall be its duty, to promulgate appropriate rules and regulations..." However, the law does not include an enforcement clause or penalties for non-licensure or non-compliance with standards. Thus many day care facilities, both centers and homes, are neither checked for, nor meet basic health, fire and safety standards. Although several specific licensing regulations are contained in the law, most of the day care standards have been developed by the licensing department. These regulations are difficult

to interpret and enforce, as they lack specific language and measureable standards, thus much is left to the discretion of the licensing worker. An example of the vagueness is "adequate nutrition" (adequate is a frequently used word) rather than "two thirds of the Recommended Dietary Allowance (RDA) for a child in care six hours or more. The Idaho standards have also been called weak in an independent study financed by DHEW.

Licensing is currently administered by each Department of Health and Welfare Region using regional staff. The procedure usually includes a visit to the facility by the DHW staff person, the fire marshall (if in a fire district) and a public health sanitarian.

As indicated in the above statement the lack of uniformity and spotty jurisdictions is a problem throughout the State - particularly in the area of fire standards, since there is not a uniform format. The Life Safety Code and the Uniform Building Code are generally used by the fire marshalls. However, these nationally recognized codes vary from edition to edition, and older versions often do not deal specifically with day care. In rural Idaho areas there usually isn't any trained fire personnel able to make an inspection. However, in rural areas the Department of Employment can be asked to make inspection under the Life Safety Code. Another major problem is the insufficient number of trained licensing staff within DHW.

The cities of Boise and Pocatello have local day care licensing ordinances which include enforcement clauses. In both cities operating day care without a license is a misdemeanor with a fine up to $300. However, the Pocatello ordinance emphasises sanitation, but barely covers fire and safety. Under the Pocatello ordinance it is permissable for one

adult to care for up to 30 children - a situation which cannot be considered good for the children as developing individuals, and is dangerous in cases of emergency.

The Boise ordinance covers fire and safety very well since the ity has adopted the new Life Safety Code. Health and sanitation are also well covered. However there have been complaints that the law is not being enforced and so many children are not being protected.

A model day care code has been developed nationally to help provide inputs for State officials, day care operators, parents and specialists in pediatrics, law, fire protection, building codes and zoning. The Guide for Day Care Licensing is a practical and applicable model for the protection of young children and would alleviate some of the problems of day care licensing if adopted in Idaho.

The UNCO Corporation recently studied the quality of day care in Washington, Oregon, Alaska and Idaho using the proposed Federal Day Care Standards. The following Table shows Idaho's ranking in relation to the other states:

Table 16

The Rank of Idaho in Day Care Home and Day Care Center Qualities

Indicators of Quality	Day Care Centers	Day Care Homes
Physical Safety	4th	3rd
Nutrition and Health	4th	4th
Adequate and Competent	3rd	4th

Better day care licensing is necessary so that the basic health and safety of young children is insured. However, licensing is only the first step. Parents need to know what constitutes good child care and how to choose a facility and people who will best care for their children. Currently the day care centers with the greatest demand are those that are licensed and have an education program. Day care homes are also desired by parents, particularly for infants and toddlers.

A third step for upgrading the quality of day care is to provide day care personnel with opportunities for training. Some of this could be done by the licensing worker if helpful materials and resources were offered with licensing. Educational resources such as public television and community groups would also be useful so that a license would not hinge upon acceptance of certain training models.

Vendors of Service

Providers of service for young handicapped children in the State of Idaho consists of several agencies. The Department of Environmental and Community Services (DECS) provides service through their Crippled Children's Division or through the Regional Child Development Centers. A few schools are providing services along with other agencies such as the Elk's Rehabilitation Center, Panhandle Child Development Association, State School for the Deaf and Blind, the Ada County Association for Retarded Children, Head Start Programs, Idaho State School and Hospital, the Easter Seal Society, Mental Health Centers, and Idaho State University Speech and Hearing Center.

When all children served during 1972 were identified through the Agency Survey about 1,616 were receiving early intervention programs. If one includes physical and congenital handicaps, it can be calculated that about 12.0 percent of those needing service received it during 1972.

The longevity of early services may vary from child to child and handicap to handicap. This confounds the issue and makes it difficult to estimate those not receiving services. However, in an unpublished study by Schrag,and Schrag (1971) it was found that only five out of 25 preschool educationally handicapped children were known to agencies in a Northern Idaho community. This is probably true statewide and would be somewhat confirmed by the Agency Service Survey results if previously contrasted against a 10 percent handicapping estimate.

Kindergarten services are provided through both public and private sources in Idaho. In 1972, 18.4 percent of the kindergarten programs operating in Idaho were State supported. The remainder were proprietary

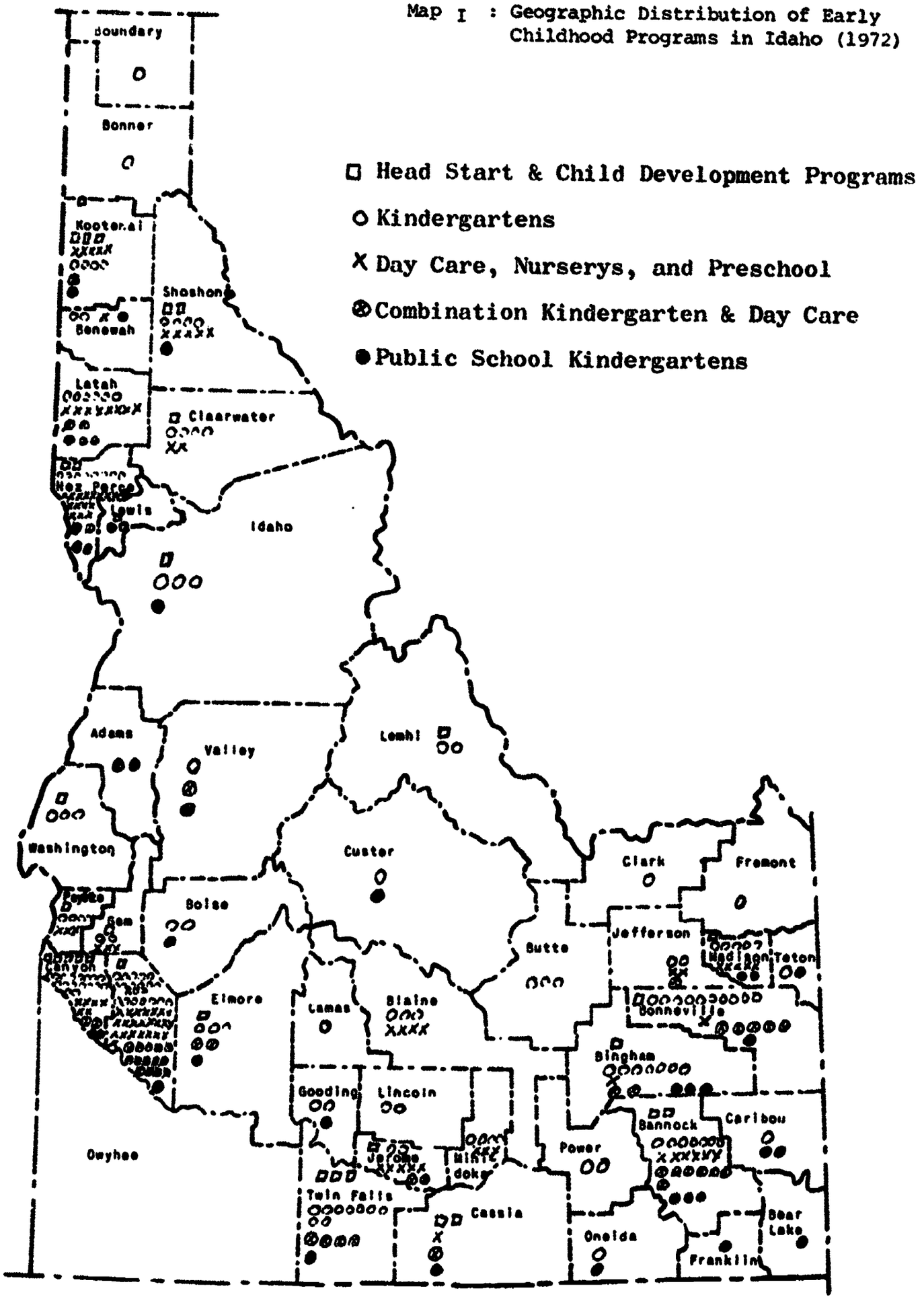
establishments. Through the services of both types of agencies, about 61.5 percent of those eligible for kindergarten were receiving it. If one adds Head Start programs to this, the total percentage increases to 67.2 percent. Since 1972 several local school districts have selected the option of providing kindergarten on their own.

Most day care in the State of Idaho is provided by private operators. Only 10 percent of the providers have some type of public fiscal support. Of the day care centers and homes included in the survey, 55 percent provided custodial care, 43 percent provided an educational element in their program and the remaining two percent were full developmental programs. Sixty-six percent of those having developmental programs were under the sponsorship of public funds. Thirty-four percent of those providing day care services openly admitted that they would not include handicapped or difficult children. Map I shows the distribution of Head Start and child development programs; kindergartens; day care, nurserys and preschools; combination kindergarten and day care and public school sponsored kindergartens. Each symbol on the map represents a location of service (classroom, day care home, etc.) except for public school kindergartens which are designated by one symbol per district.

There are few parent intervention programs in the State. Some mental health services might be considered parent support and intervention programs, however, a calculation of the number of children served statewide in 1972 indicates that the centers are reaching about One-twentieth of the population that needs to be served.

Head Start is another program which has a parent intervention component referred to as Home Start. During 1973 ninety children were

Map I : Geographic Distribution of Early Childhood Programs in Idaho (1972)



- Head Start & Child Development Programs
- Kindergartens
- Day Care, Nurserys, and Preschool
- Combination Kindergarten & Day Care
- Public School Kindergartens

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involved in a home start program. The programs were piloted in South Central and Southeastern Idaho. Some child development centers (DECS) are beginning to develop infant stimulation programs, however, they are too recent to determine the number being served and the impact they may have.

The development of competent manpower is contingent upon the availability of training resources and facilities. In Idaho, the University of Idaho has a curriculum in home economics emphasizing child development that leads to a Bachelor's degree. Ricks College provides an Associate Degree in child development. Both Idaho State University and Boise State University are co-grantees involved in the development of a pilot C.D.A* project. Bois State University also has a vocational program (2 years) leading to a certificate in child development. At the present time there is no well integrated interdepartmental Bachelor level degree or advance degree available in the field of early childhood from Idaho institutions of higher education.

*Child Development Associate

SUMMARY

Accidents can be discussed in accordance with their outcomes (deaths, hospitilization, clinic treatment or home treatment). They can also be categorized in accordance with their place of occurrence and their frequency of occurrence.

For young children in Idaho about 73 percent of their accidents occur at home. Using National figures as a projection base this would indicate that about 15,476 young children are injured annually in Idaho and that another 4,039 are injured in other environments including automobile accidents, public parks, playgrounds, day care homes, centers, etc.

Programs to help prevent early childhood accidents in Idaho are virtually nonexistent. The general campaign to prevent automotive accidents will have some impact upon childhood injuries, however, only 451 preschool children were injured in automotive accidents during 1972 in Idaho. This figure could be reduced if appropriate precaution was taken by parents. The Consumer Survey conducted by the Idaho Office of Child Development (IOCD) found that only 16 percent use safety belts for their children regularly and that 63 percent never use safety seats or belts.

The entire area of accident prevention for children has been ignored in Idaho. In order to ameliorate many of the accidents that occur it will be necessary for many elements of the community to change products, initiate public awareness programs, and to provide more effective planning. Accident prevention remains a complete gap in the Idaho service system.

Both chronic and acute illnesses present problems in Idaho. The American Academy of Pediatrics (1970) reported that there was a serious obstacle to the identification of health needs in young children primarily

because in the United States we fail to regularly bring together preschoolers in groups which can be screened and referred for further diagnosis.

The Idaho household survey found a prevalency rate of about 110.6 chronic conditions per thousand children (ages 0-6). This rate is somewhat lower than the National figure of 169.3 per thousand for 0-4 year old children. Thirty-two percent of the Idaho respondents indicated that their child's present chronic condition was not under treatment at the time of the interview.

Acute illnesses include respiratory infections, otitis media pneumonia, polio, rubeloa, mumps, etc. While it is difficult to treat chronic conditions, some acute illnesses can be prevented through immunizations. In general the household survey conducted by IOCD found an acceptable level of immunization (about 85 percent up-to-date) during the first year of life for the infant population. However, after this period of life the percentage of children up to-date in their immunizations declined until in most cases only 25 percent of the population (4 to 6 years old) were current in their immunization schedule.

The general problem in improving the percentage of the population immunized appears to be a systems linkage problem as opposed to a social barrier preventing treatment. Several types of linkages have been tried including using indiginous paraprofessionals, public information campaign, and evening clinic hours.

The most common physical defect found in children is dental carries. It has been found nationally that about half of the children under the age of 15 in the United States have never seen a dentist. The IOCD survey conducted throughout Idaho found that 52 percent of the parents of children between three and six years of age indicated that their children had not visited a dentist within

the last year. An additional finding of the survey was that two percent of the children had dental problems, which at the time of the interviewer's visit re remained untreated.

Dental screening completed throughout the State indicates that dental problems are not uniform throughout the State but vary with locality and the extent of naturally occuring fluoride in the water of Idaho.

Nationwide one dentist is needed to serve a population of about 2,000. For Idaho the present ratio is lower than the National (one dentist per 1,400 people). The major problem in Idaho seems to be distribution with many small rural communities still in need of more immediately available services.

The nutritional intake survey while rich with information and comparisons lead to some major conclusions. It appears as though a greater percentage of Idaho's children, as compared to the National average, are receiving below the Recommended Dietary Allowance for most food elements. Improvement in the consumption of iron, calcium, thiamin, total food calories and perhaps niacin. The consumption of all could be improved. If it is true that what a preschool child eats is characteristic of his family, there would appear to be a need for a great deal of nutritional counseling throughout the State.

Another finding was that those children deficient in iron intake are also likely to be deficient in calories, calcium, vitamin A, thiamin, niacin, vitamin C and phosphorous. If it can be assumed that an anemic child is low on iron intake it would appear as though a full nutritional intake study may be warranted.

While Idaho's intake study compares favorably with Mississippi's by showing better intake means in general, it does, however, compare less

favorable when contrasted with the North Central Region Survey.

Consuming two-thirds or below the Recommended Dietary Allowance is usually considered serious enough to impose the consequences of malnutrition if sustained for a period of time. Of the sample of 451 children used in the dietary intake study, 282 showed a deficit as great as two-thirds or more, averaged over a three-day period. Hence only 37 percent showed adequate nutritional intake.

This information above would imply a need for access to and incentive to utilize nutritional information, counseling, purchasing, etc. It would probably be best if the launching of nutritional programs in the State take into consideration other risk groups such as teenagers and the aged. Both groups have shown a tendency toward poor nutritional habits.

The nature-nurture controversy has become less bipolar and now the major scientific question being asked about the relationship of the two is the relative contribution of each to the ultimate outcome (criteria or dependent variable).

In general it has been concluded that certain attributes such as walking, laughter, smiling, fear, anger, etc. are spontaneous and appear as maturation progresses, however, certain cognitive features such as language acquisition and memory enhancement appear to emerge in response to environmental factors. Social skills also appear to emerge as interpersonal interactions provide experiences in the every day lives of children.

While they have received comparatively little attention - coping, creativity, cognitive style and problem solving all appear to be constructs needing further investigation. They appear to be more important in view of the world children will be living in and working in two to five decades from now.

Because language acquisition and memory enhancement appear to be modifiable by environmental input, a variety of programs have sprung up over

the past years to enhance this development. Among programs developed to enhance modifiable capabilities were kindergarten, Head Start, developmental or educational day care, nursery schools and a variety of experimental programs. Longitudinal follow-up results tend to indicate that early intervention (birth to 3 years) may have greater impact and that perhaps parent training may be the most cost effective mechanism to obtain the desirable immediate results. Cost benefit is difficult to project because of inadequate follow-up research on the impact of early intervention.

For handicapping, ECE appears to have good potential, but here again there is a dearth of longitudinal research. Total change of environment very early in life from institutional care to family living, does have an outstanding impact upon the ultimate productivity of the adults.

Ultimately whether the program is kindergarten, Head Start, day care, parent intervention, nursery school, preschool, etc., the question of economics emerges. Even if it is demonstrated that young children can learn a skill in advance of its normal appearance, we still must decide whether it is desirable and appropriate. The crucial question is, if such learning is reasonably economical in terms of time, effort and money; and if it ultimately helps children in terms of their education and career in an ever changing - complex world. It is this last criteria that few proponents of early programmings have contemplated. If one develops programs that are rote in nature and stress social conformity, is one adequately preparing individuals for living most of their productive lives in the next century?

Met and Unmet Needs Profile

The following profile has been developed to provide a visual display of needs and the amount of need being met by both public and private programs. The entire length of a bar represents 100 percent need. In most cases it does not represent the entire population. For example, only 85 percent of the population needs to be immunized in order to prevent an epidemic, hence the total population or area on the bar represents only 85 percent of the population. The population portion or number is recorded at the top of each bar.

Some of the bars represent composites which can be broken down into specific categories. Nutrition and up-to-date immunizations are examples of such composites. These composites have usually been broken down into their respective components in the text or in the appendices.

Agencies attempting to meet the needs have been enumerated in the text, but lumped into the public and private sector for purposes of developing a simplified profile format. The bar showing therapeutic programs for handicapped preschool children overlaps somewhat with the bar showing cognitive lags. However, physical and congenital handicaps were included in therapeutic programs for handicapped young children, while only children with language and informational lags were involved in the cognitive lag bars.

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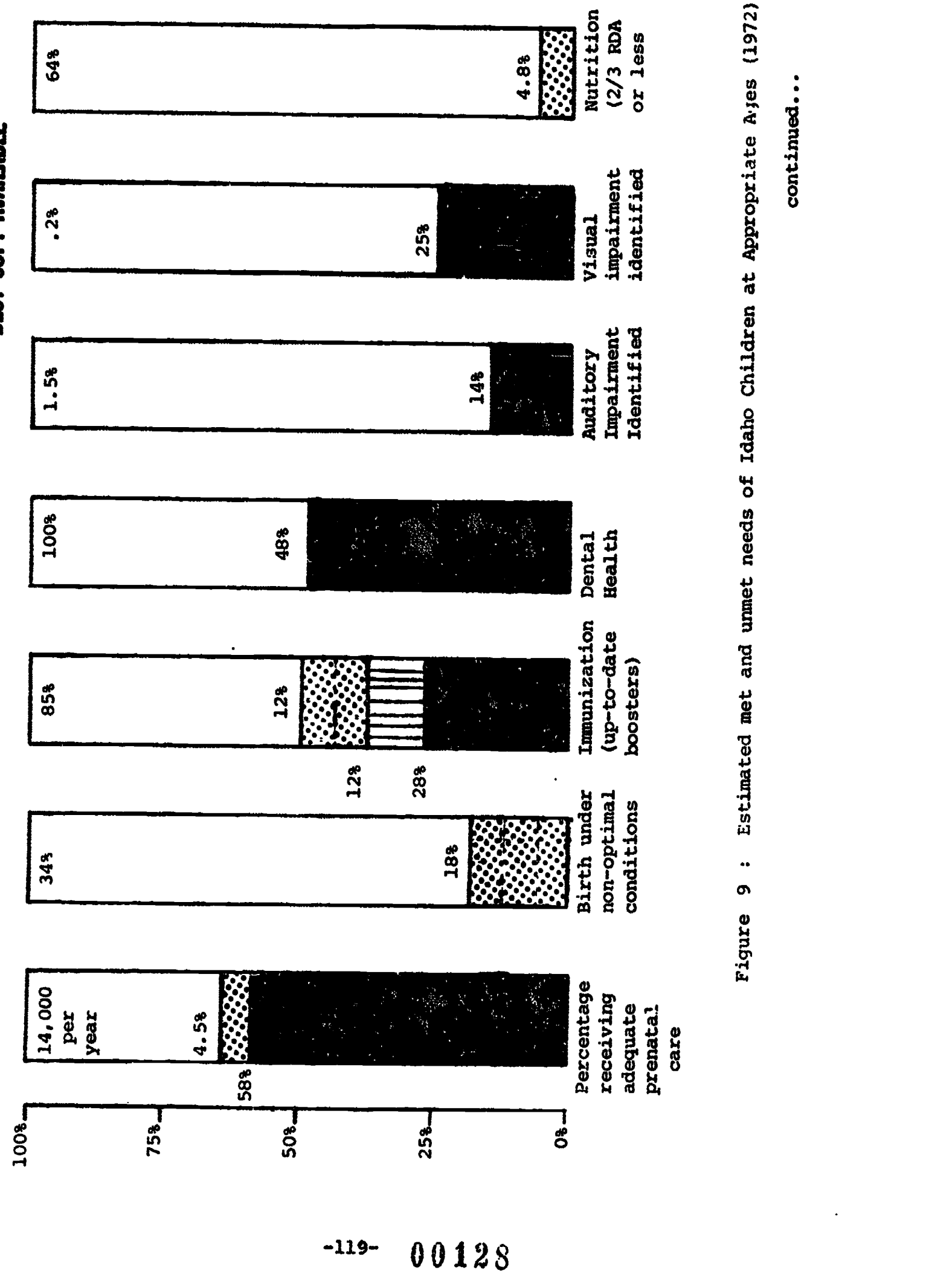

Figure 9 : Estimated met and unmet needs of Idaho Children at Appropriate Ages (1972)

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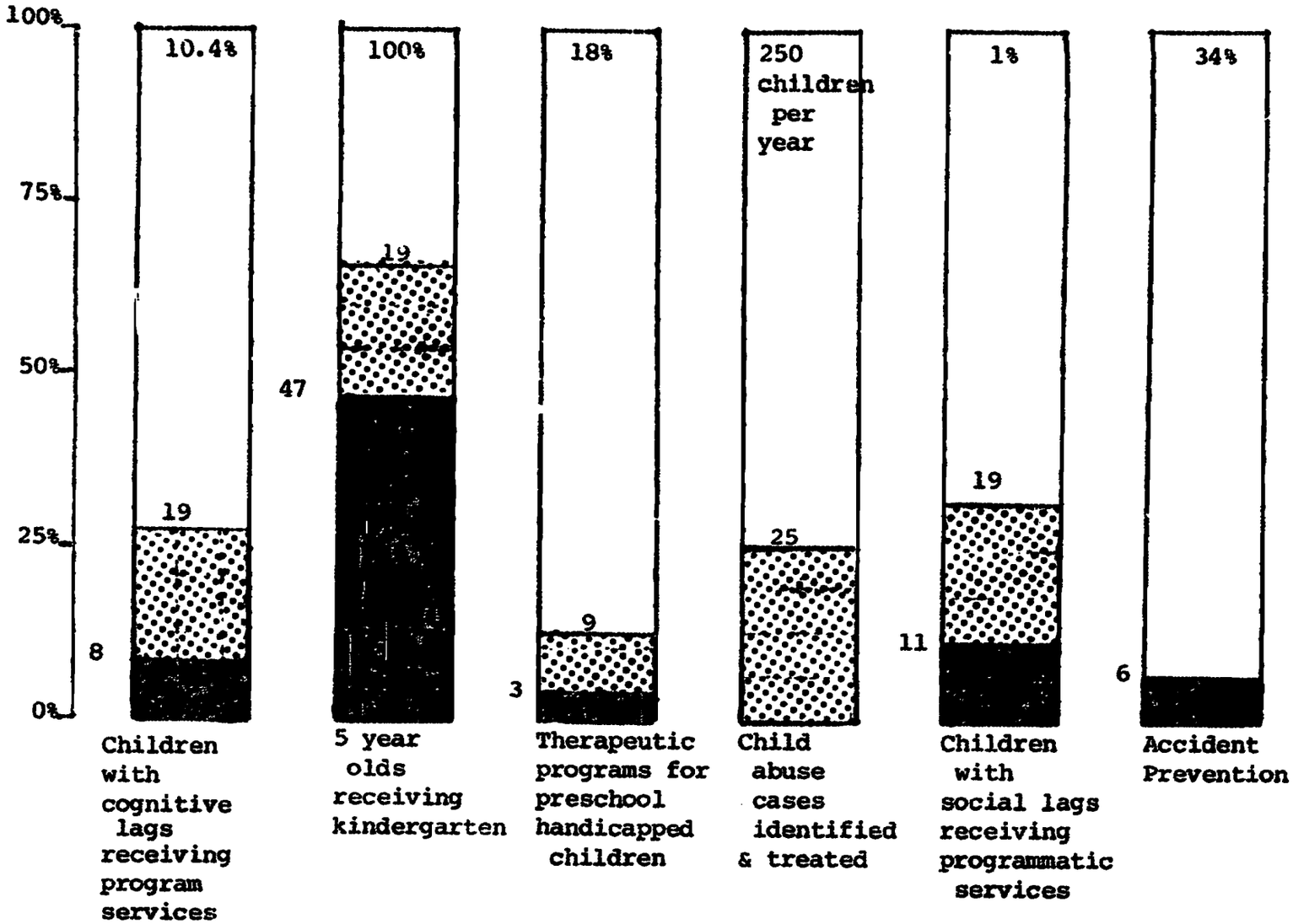

CRITICAL PERIODS NEEDING EMPHASIS

Nutrition

From our review it has become apparent that nutrition is a critical environmental factor during the third trimester through infancy. It is during this period which rapid brain growth occurs and malnutrition, especially the lack of protein, can result in intellectual impairment. Only four percent of those involved in the survey showed protein deficits. This does indicate to us that a few Idaho children may be impaired by nutrition deficits.

It should also be noted that iron deficiency resulting in anemia significantly impact attentiveness. Our findings indicate that this is most likely to occur in one and two year old children. Because linguistic acquisition is dependent upon attentiveness and starts at about nine months of age and rapidly accelerates until three years of age, it is critical that the child be physiologically sound to enhance his linguistic development.

Some evidence is also now beginning to emerge that poor nutrition for girls during the first six years of life later effects their ability to produce healthy offsprings.

Social-Emotional Development

Our reviewing the literature would indicate that normal development requires that a good maternal bond be formed within a few days after birth. Such a bond (claiming behavior) is necessary and if not formed makes the family high risk for abuse, neglect or death of the child.

Stimulation during infancy appears to be important to foster development and child-parent interactions which ultimately result in an infant attachment at about three to six months of age. If this attachment is not developed or is broken, results can vary from death to chronic mental illness during adolescence and adulthood. Parental loss during the first five years of life also has a greater probability of causing mental illness later in life.

Cognitive Development

Cognitive development is contingent upon the previously discussed factor of nutrition and social-emotional development.

Additional research has pointed out that language stimulation during the early part of the language acquisition period, is critical to the later intellectual performance of children. Many programs are now zeroing in on mother-child linguistic interactions between one to three years of age. If these interactions are poor, a functionally retarded child may emerge in the elementary grades.

RECOMMENDATIONS

As a result of the needs surveys, the Idaho Office of Child Development recommends the following programs to improve the developmental conditions of Idaho children:

1. That the state and local communities initiate an all-out campaign to enhance responsible parenthood. The following information should be available to all parents and teenagers:

   A. Optimal conditions for conception and prenatal development of a child.

   B. Optimal child development conditions and skills including nutrition, health; physical, social, emotional and intellectual growth and accident prevention.

   C. Community resources available for helping and enhancing the growth of children.

2. That the State expand the early periodic screening program to include all children 0-6 in the State of Idaho. This program provides a comprehensive screening, checking for common problems in the areas of medical (including immunization) visual, auditory, dental, nutritional, social, intellectual and physical development.

3. That the State of Idaho develop multidisciplinary programs for "high-risk" children (ages 0-6) that are primarily home-based. Such programs would serve low birth weight infants, babies medically identified as high-risk, children in less than optimal environments and children having developmental lags. The program could be administered by child development centers in conjunction with the early periodic screening.

The program could provide skills for parents with help from professionals and paraprofessionals to initiate the needed intervention.

A. In order to initiate this recommendation, collaboration between State agencies and higher education will be necessary to develop a compatible manpower plan.

B. That if such coordination develops, the basis for planning manpower training in part could spring from a review of early periodic screening diagnosis and treatment follow-up results.

4. That the early periodic screening diagnosis and treatment results be tabulated and gaps in services be identified. That these gaps be made public so that support can be generated for their elimination.

5. That some type of human resources development and needs assessment agency be created in State government to continually monitor needs and programs developed to meet the needs. That this agency report directly to the Governor and help establish priority in the areas of human needs programs, etc. That it be independent of program operation and engage in long term preventative planning where feasible.

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INTRODUCTION TO USE OF APPENDIX

Methodology

It has been estimated that there are approximately 49,000 families who have children under the age of six in the State of Idaho. Approximately a 2.0 percent random sample was drawn from this population representing 964 families who were contacted and took part in the survey. Families interviewed were representative of the general Idaho population as contrasted with 1970 census factors such as geographic distribution, SES and race.

The collection of data began in April 1972 and was completed in March 1973. A personal home interview was selected as the best interviewing method for the survey. A structured questionnaire was developed to record the data. The questionnaire was compiled after reviewing other research completed and available in Idaho so that duplication could be prevented.

The nutritional data was gathered using a form similar to that used in the North Central Survey. Information gathered included amount of and type of food eaten, where eaten, when eaten and if vitamin supplements were being used. A self-addressed and stamped envelope was left with families to return the nutrition form. Of the 964 families who took part in the survey, 46.8 percent filled out and returned the three consecutive day nutritional form.

The developmental assessment of the children was gathered by the utilization of cognitive and social scales from the Preschool Attainment Record and other developmental scales. Assessment was conducted directly

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with the child when available and through parent interview when absent.

Data Processing

The responses from completed questionnaires were converted into numeric codes and data was punched on to eighty-column cards. All tabulations were made utilizing a counter sorter.

Data from the nutrition portion of the survey was processed differently. Each returned questionnaire was reviewed by a dietician and each food item was assigned a coded number using the U.S.D.A., Home and Garden Bulletin #72. The quantities of each food item were also entered on computer cards and with the aid of a standard computer program purchased from U.S.D.A., the nutritive value of consumed food was determined. Data was then presented for each child indicating his nutrient intake for each of three days, a mean value was calculated for the three days and this was compared to the Recommended Dietary Allowance (RDA) established for his age and all one-third or two-thirds deficiencies were noted.

The previous paragraphs describe the methodology used in the IOCD study. Following is a group of detailed tables and graphs referred to in the text. Some results not referred to in the text are included in the graphs and tables.

The tables for the most part present raw numbers, however, percentage figures are given where appropriate. A dash (-) indicates zero quantities NA refers to data not available. A copy of the questionnaire used in the survey is included at the end of the appendix.

Data presented in the appendix generally follows the format of first showing State total figures then breaking this total down into the six planning regions within the State. The counties making up the regions are presented in the map at the beginning of the table section.

The degree of reliability associated with data presented may be

calculated from the following formula:

$$\sigma\% = t\sqrt{\frac{pq}{n}\,\frac{(N-n)}{(N-1)}}$$

Where: $\sigma\%$ = degree of reliability ($\pm$)
p = percent of attribute in universe expressed as a decimal
$q = 1 - p$
N = size of universe
n = size of sample

t = 1.96 (.05 level of confidence)
2.58 (.01 level of confidence)

This formula can be used for determining the degree of reliability for any given percentage data, so long as the universe figures are known.

Example:

From Table 4 the percent of women with children under six who are employed is given as 32 percent. To find the degree of reliability (or the range of percentage points ($\pm$) that is acceptable at a given confidence level) use the above formula in the following way: Percent of attribute is 32 percent (.32 expressed as decimal), $q = (1 - .32) = .68$. The universe of women who are married in Idaho is 44,592 (Table), the sample size is 964. If we use the .01 level of confidence then $t = 2.58$ (if the .05 level of confidence is used $t = 1.96$).

Then: for .01 confidence level

$$\sigma\% = 2.58\sqrt{\frac{(.32)\ (.68)}{964}\,\frac{(44{,}592 - 964)}{(44{,}592 - 1\ )}}$$

$$= 2.58\sqrt{\frac{(.2176)}{(\ 964\ )}\,\frac{(43{,}628)}{(44{,}591)}}$$

$$= 2.58\sqrt{(.0225)\ (.978403)}$$

$$= 2.58\sqrt{.000220}$$

$$= (2.58)\ (.014832)$$

$$= \pm\ .038$$

$$\sigma = \pm\ 3.8\%$$

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Conclusion:

One can expect the true population percent to fall within (±) 3.8 percentage points of the percent found in the sample 99 percent of the time. In other words we can expect the true value to be as high as 35.8 percent or as low as 28.2 percent of all women with children under the age of six to be employed. This compares favorably with the 29.0 percent found by the census in late 1969.

The same formula can also be used to calculate the degree of reliability for percent figures given for each region as well as the State total data. To do so one needs to first establish the universe data for each region which can be ascertained from Tables

Example:

We wish to establish the degree of reliability of data given for percent of women with children under six who are working in Region I. The universe figure for women is 4949 (Table), the percent found in the sample is 18 percent (Table 4), sample size is 108.

Then for .01 confidence level:

$$\sigma_{\%} = 2.58\sqrt{\frac{(.18)\ (.82)}{108}\ \frac{(4949-108)}{(4949-1)}}$$

$$= 2.58\sqrt{(.001366)\ (.978375)}$$

$$= (2.58)\sqrt{.001339}$$

$$= (2.58)\ (.036606)$$

$$\sigma_{\%} = \pm .094$$

$$\sigma = \pm\ 9.4\%$$

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Conclusion:

One can expect the true population percent for Region I to fall within (±) 9.4 percentage points of the percent found in the sample, 99 percent of the time. In other words one could expect to find the true value between 27.4 percent and 8.6 percent for employed women in Region I with children under six years of age.

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STATE PLANNING REGIONS

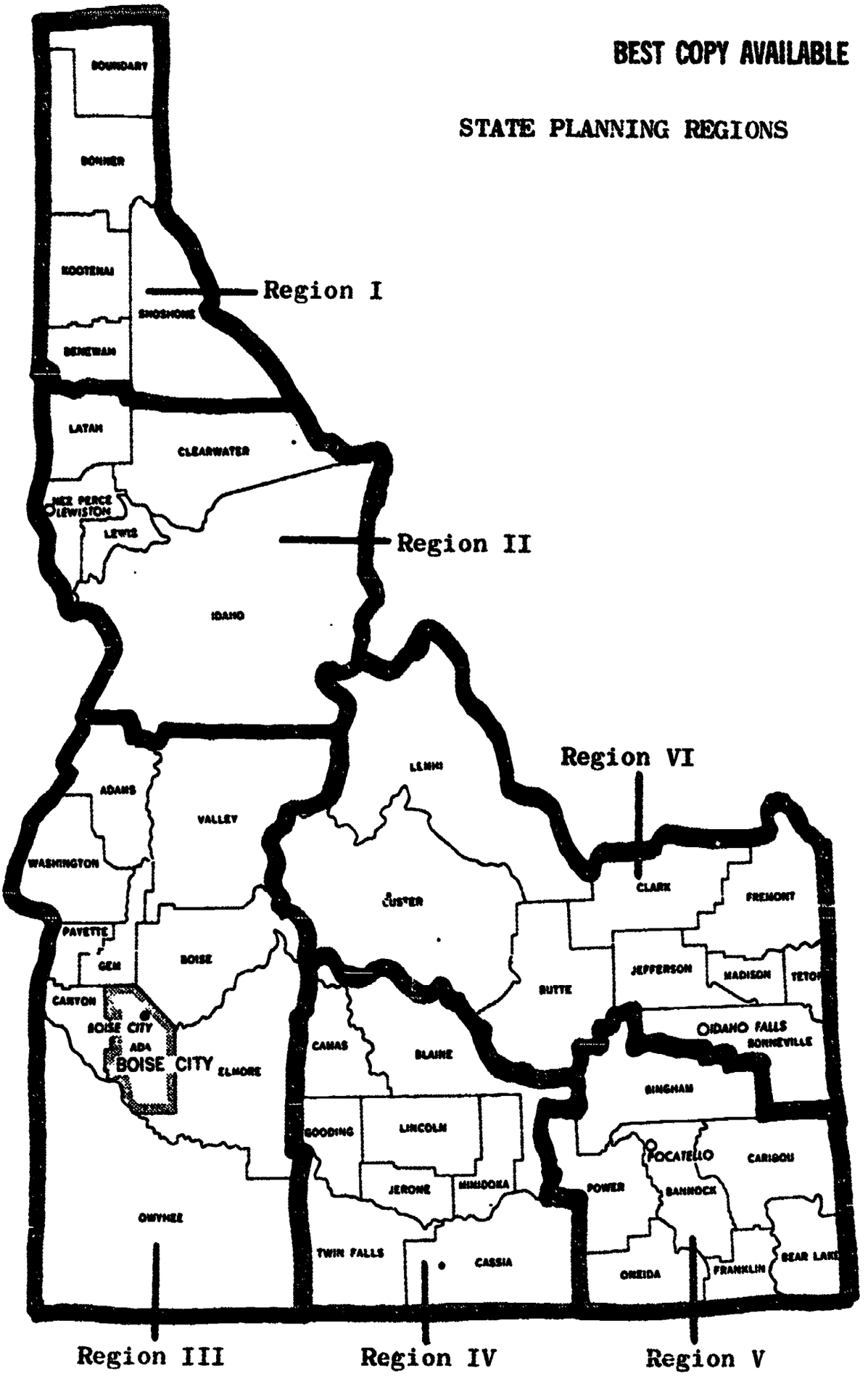

TABLE 1

GENERAL CHARACTERISTICS OF FAMILIES W/CHILDREN UNDER SIX YEARS OF AGE.

	State Total	Regions I	II	III	IV	V	VI
# Families Interviewed	964	108	108	299	132	161	156
# Two Parent Families	912	106	103	275	128	154	148
# Single Head Household	50	2	5	24	4	7	8
Percent of Families below poverty level	10.3	7.4	9.3	12.4	10.6	8.1	10.9
Marital Status							
Married	913	106	103	275	128	154	147
Widowed	3	-	1	1	-	-	1
Divorced	28	2	4	11	2	4	5
Separated	12	-	-	6	2	2	2
Never Married	7	-	-	6	-	1	-
Father: All Ages	913	106	103	275	128	154	147
19 & under	1	-	-	-	1	-	-
20 to 24 yrs.	80	4	11	27	14	12	12
25 to 29 yrs.	294	34	31	109	37	43	40
30 to 34 yrs.	294	35	31	86	45	49	48
35 to 39 yrs.	141	16	20	33	17	31	24
40 & over	96	17	10	20	14	12	23
Median Age	31	32	31	28	31	32	32
Mother: All Ages	956	108	108	292	132	161	155
19 & under	15	-	2	7	2	2	2
20 to 24 yrs.	199	15	20	71	35	32	26
25 to 29 yrs.	369	41	36	123	48	67	54
30 to 34 yrs.	219	31	32	58	28	28	42
35 to 39 yrs.	109	15	9	26	13	21	25
40 & over	45	6	9	7	6	11	6
Median Age	28	29	28	26	27	28	29
Years of School Completed							
Father:							
None Completed	3	-	-	2	1	-	-
1 to 6 yrs.	13	1	-	6	3	1	2
7 to 8 yrs.	25	-	-	8	10	4	3
9 to 12 yrs.	438	56	49	133	67	73	60

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TABLE I....continued

	State Total	Regions I	II	III	IV	V	VI
College:							
1 to 4 yrs.	223	19	29	63	30	47	35
Bachelor's	137	20	13	44	10	20	30
Master's	58	9	10	15	5	4	15
Doctorate	13	3	1	5	2	-	2
Median school yrs.	12.8	12	13	12	11	12	13.9
Mother:							
None completed	1	-	-	-	1	-	-
1 to 6 yrs.	17	1	3	6	4	2	1
7 to 8 yrs.	21	1	5	4	1	2	8
9 to 12 yrs.	577	67	56	168	90	111	85
College:							
1 to 4 yrs.	253	28	31	83	29	35	47
Bachelor's	77	11	10	29	5	9	13
Master's	9	-	3	2	2	1	1
Doctorate	-	-	-	-	-	-	-
Median school yrs.	12	11	11	11	11	12	12.2
Racial Group of Parents							
Father:							
Anglo	878	105	102	260	120	149	142
Black	2	-	-	1	-	-	1
Chicano	28	-	-	14	7	5	2
Native American	2	-	1	1	-	-	-
Other	2	1	-	-	1	-	-
Mother:							
Anglo	912	106	105	275	123	155	148
Black	1	-	-	-	-	-	1
Chicano	30	-	-	15	6	6	3
Native American	10	1	3	2	2	-	2
Other	3	1	-	-	1	-	1
Income of Families							
Less than $1,000	3	-	-	2	1	-	-
1000 - 1999	13	1	1	4	2	3	2
2000 - 2999	21	3	4	9	2	1	2
3000 - 3999	40	3	5	16	1	9	6
4000 - 4999	41	3	5	15	8	3	7
5000 - 5999	56	4	3	20	11	13	5
6000 - 6999	86	3	5	28	18	16	16
7000 - 7999	111	14	12	38	18	12	17
8000 - 8999	92	11	12	28	8	20	13
9000 - 9999	123	14	5	33	17	24	15

Table I.... continued

	State Total	Regions I	II	III	IV	V	VI
10,000 - 11,999	177	26	19	59	19	23	31
12,000 - 14,999	130	16	22	28	14	23	27
15,000 - 24,999	60	10	10	17	6	7	10
25,000 - & over	21	-	3	2	7	5	4
Median Income	9,090	9,800	10,200	8,600	8,620	9,120	9,630
Number of Children living with family	2,674	308	280	705	370	513	498
Average No. Children per family	2.7	2.9	2.6	2.4	2.8	3.2	3.2
No. of children under six years	1,486	170	156	431	204	258	267
Average No. children under six per family	1.5	1.6	1.4	1.4	1.5	1.6	1.7
Children Under Six years							
Male (total)	754	92	74	224	97	127	140
Under 1 yr.	61	9	6	19	5	9	13
1 -2 yrs.	123	14	14	34	16	22	23
2 -3 yrs.	97	7	13	25	18	18	16
3 -4 yrs.	152	15	16	49	24	23	25
4 yrs.	170	24	14	53	21	28	30
5 yrs.	151	23	11	44	13	27	33
Female (total)	732	78	82	207	107	131	127
Under 1 yr.	76	8	8	16	17	17	10
1 -2 yrs.	115	12	15	42	13	18	15
2 -3 yrs.	101	10	10	23	17	17	24
3 -4 yrs.	141	14	15	44	19	29	20
4 yrs.	161	19	19	39	23	26	35
5 yrs.	138	15	15	43	18	24	23

Number of Children Considered for Ideal Family Size	Total Percent	State Total	Regions I	II	III	IV	V	VI
Husband								
None	.7	6	1	-	4	-	1	-
1	1.1	9	2	3	2	1	1	-
2	45.0	378	51	47	156	54	35	35
3	22.0	185	24	23	52	24	29	33
4	18.0	151	16	16	38	21	31	29
5	5.0	42	3	1	4	5	15	14
6 & over	9.0	76	4	6	13	8	28	17
Median #		2	2	3	2	3	4	3

Table 1 .....continued

	Total Percent	State Total	Regions I	II	III	IV	V	VI
Wife								
None	.2	2	1	-	1	-	-	-
1	.7	7	1	-	5	-	1	-
2	44.0	396	54	48	159	57	44	34
3	23.0	204	27	22	59	22	32	42
4	22.0	196	18	23	55	32	36	32
5	4.0	33	2	-	6	1	11	13
6 & over	7.0	67	3	6	8	6	26	18
Median #		2	2	3	2	3	4	3

	State Total	Regions I	II	III	IV	V	VI
Percentage of Families who feel that activities (work, etc.) prevent them from spending sufficient time with their children (N=151)	34% (N=151)	20% (N=20)	NA	3% (N=88)	28% (N=18)	NA	40% (N=25)

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TABLE 2

Housing Characteristics of Families with Children Under Six Years

	Percent Total	State Total	Regions I	II	III	IV	V	VI
Rent	28%	265	20	32	99	41	46	27
Own	70%	678	86	76	190	88	115	123
Other	2%	20	2	-	10	3	-	5
Inadequate Plumbing Facilities	.6%	6	3	-	2	-	-	1
Inadequate Kitchen Facilities	.5%	5	2	-	2	-	-	1
Number Persons Per Room								
.50 or less	24%	224	37	39	73	25	19	31
.51 to .75	39%	366	34	25	131	57	67	52
.76 to .99	21%	215	23	33	40	22	41	47
1.00 to 1.50	14%	135	13	9	40	22	32	19
1.51 to 2.00	2%	17	-	2	6	6	2	1
2.01 or more	.3%	3	1	-	1	-	-	1

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TABLE 3

Birthplace of Children Under Six Years by Region and Out of State

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Birthplace	State Total	Current Residence I	II	III	IV	V	VI
Region I	156	109	39	6	1	1	-
Region II	79	2	65	11	-	-	1
Region III	298	-	1	290	2	1	4
Region IV	180	-	1	9	166	4	-
Region V	207	2	-	3	2	187	13
Region VI	223	1	1	3	2	22	194
Out of State	331	55	52	96	32	40	56

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TABLE 4.

EMPLOYMENT STATUS OF FAMILIES WITH CHILDREN UNDER SIX YEARS OF AGE

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	Total State	Regions I	II	III	IV	V	VI
Total Households	964	108	108	299	132	161	156
Both husband U wife present	912	106	103	275	128	154	156
Husband:							
Employed fulltime	875	103	96	262	125	145	144
% of husbands	96%	97%	94%	95%	98%	95%	98%
Employed part-time	8	-	3	2	1	2	-
% of husbands	1%	-	3%	1%	1%	1%	-
Total percent of husbands employed	97%	97%	97%	96%	99%	96%	98%
wife:							
Employed fulltime	234	16	21	105	30	27	35
% of wives	26%	15%	20%	38%	23%	18%	21%
Employed part-time	57	3	4	12	7	20	11
% of wives	6%	3%	4%	4%	5%	12%	7%
Total percent of wives employed	32%	18%	24%	42%	28%	30%	28%
Single head household	50	2	5	24	4	7	8
Male single head	1	-	-	1	-	-	-
Female single head	49	2	5	23	4	7	8
No. employed (part time and full time)	23	-	3	12	-	3	5
% of single head	47%	-	60%	52%	-	43%	62%
% of all households	2%	-	3%	4%	-	2%	3%
Total percent of all households with women working	34%	18%	27%	46%	28%	32%	31%

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TABLE 5

Types of Activities Parents are Involved in While Making Child Care Arrangements for Their Children

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Percentage of Households and Average Number of Hours Spent in that Activity per Month	State Total	Regions I	II	III	IV	V	VI
Employment	26%	14%	22%	36%	21%	22%	24%
Mean Hrs.	87	57	80	86	88	102	96
Leisure Activities	71%	80%	84%	77%	39%	61%	83%
Mean Hrs.	10	6	10	10	17	9	10
Schooling	5%	0	2%	13%	1%	1%	1%
Mean Hrs.	29	0	23	7	45	70	40
Other	13%	11%	10%	13%	14%	23%	7%
Mean Hrs.	5	6	1	3	5	11	6

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TABLE 6

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Types of Child Care Arrangements Utilized for Children Under the Age of 14 Years and the Percentage Dissatisfied With That Care

Type of Child Care Arrangements	State Total	Regions I	II	III	IV	V	VI
Take Care of Self	17%	12%	9%	14%	20%	22%	20%
Mean hrs. per mo.	14	NA	NA	16	NA	21	5
Not satisfied	1%	-	-	4%	-	-	-
Desiring this type for alternative care *		-	-	-	-	-	-
Sibling Care	10%	11%	5%	9%	12%	12%	14%
Mean hrs. per mo.	14	11	6	19	17	15	10
Not satisfied	1%	-	-	3%	2%	-	-
Desiring this type for alternative care *	-	-	-	-	-	-	-
Relative or Friend Living with family **	2%	2%	4%	1%	3%	1%	2%
Mean hrs. per mo.	37	2	13	54	70	25	32
Not satisfied	6%	-	-	18%	-	-	-
Desiring this type for alternative care *		-	-	-	-	-	-
Relative or Friend from the outside **	26%	29%	30%	32%	28%	23%	15%
Mean hrs. per mo.	16	8	9	22	17	16	16
Not satisfied	5%	8%	-	18%	7%	3%	3%
Desiring this type for alternative care *	4%	-	100%	2%	-	-	14%
Hired sitter in own home	34%	41%	40%	32%	29%	29%	37%
Mean hrs. per mo.	11	9	12	8	8	21	9
Not satisfied	6%	-	-	14%	7%	-	2%
Desiring this type for alternative care *	27%	40%	-	27%	33%	-	14%

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Table 6 continued.....

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Type of Child Care Arrangements	Total	I	II	III	IV	V	VI
Hired sitter outside home	4%	5%	8%	3%	3%	6%	3%
Mean hrs. per mo.	50	24	30	106	77	15	7
Not satisfied	9%	6%	9%	20%	8	-	-
Desiring this type for alternative care *	1%	-	-	2%	-	-	-
Family Day care home	4%	-	1%	5%	3%	3%	6%
Mean hrs. per mo.	65	-	80	71	73	93	63
Not satisfied	14%	-	-	21%	40%	-	7%
Desiring this type for alternative care *	9%	-	-	11%	8%	-	-
Group day care home	1%	-	2%	1%	1%	2%	3%
Mean hrs. per mo.	55	-	132	36	95	53	97
Not satisfied	17%	-	-	25%	-	-	36%
Desiring this type for alternative care *	4%	-	-	7%	-	-	-
Day care center	2%	-	1%	3%	1%	2%	1%
Mean hrs. per mo.	81	-	85	72	70	112	130
Not satisfied	16%		-	20%	60%	9%	-
Desiring this type for alternative care *	41%	60%	-	30%	58%	100%	71%
Drop in care							
Desiring this type for for alternative care *	13%	-	-	20%	-	-	-
Use of Relatives for child care							
** Relationship to child							
Aunt or uncle	18%	15%	30%	14%	10%	20%	22%
Grandparents	59%	53%	56%	50%	61%	76%	62%
Cousin	4%	-	-	5%	6%	5%	6%
Friend or neighbor	19%	32%	14%	31%	17%	-	10%

* Figured only on those who were dissatisfied

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TABLE 7

Amount of Money Families are Either Currently Paying or Willing to Pay Per Child for the Type of Child Care They Want per Month

A percentage of households and the amount per child per month	State Total	Regions I	II	III	IV	V	VI
$0-10	85%	88%	88%	80%	88%	81%	87%
11-20	5%	6%	5%	7%	3%	6%	3%
21-30	3%	2%	1%	3%	1%	6%	2%
31-40	2%	1%	2%	2%	1%	4%	2%
41-50	2%	1%	2%	4%	1%	2%	1%
51-60	1%	1%	1%	1%	1%	-	3%
61-70	2%	2%	2%	2%	3%	1%	1%
71-80	-	-	-	-	-	-	1%
81-90	1%	-	1%	1%	1%	1%	1%
91-100	-	-	-	-	1%	-	-

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TABLE 8

Availability of Health Care Facilities to Families
With Children Under Six Years of Age

	State Total	Regions I	II	III	IV	V	VI
No. using a pediatrician	384	23	30	130	56	76	69
Percentage of total	37%	22%	28%	43%	42%	47%	44%
No. using a family doctor	727	102	99	192	111	110	113
Percentage of total	75%	96%	92%	65%	84%	68%	73%
No. not visiting a doctor as often as they wish	153	6	12	61	28	18	28
Percentage of total	16%	6%	11%	22%	21%	11%	18%
Reasons for not visiting: (percentage of those not visiting)							
Too far	2%	-	-	6%	-	-	-
too much trouble	11%	16%	33%	1%	4%	16%	10%
not enough time	7%	-	8%	-	4%	28%	3%
cost	65%	84%	33%	63%	79%	56%	76%
other	15%	-	26%	34%	13%	-	10%
No. refused health services	42	3	4	22	5	4	4
Percentage of total families refused	4%	3%	4%	7%	4%	3%	3%
Place where refused:							
Hospital	10	1	2	3	-	1	3
Doctor	30	2	2	18	5	2	1
Public Health	2	-	-	1	-	1	-
Percentage of 3-6 year olds who have visited a dentist	47%	41%	40%	48%	49%	48%	51%
Percentage of 4-6 year olds who have visited an optometrist	15%	6%	25%	14%	11%	22%	15%

continued...

Table 8 continued.....

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	State Total	Regions I	II	III	IV	V	VI
Percentage who know where to obtain immunization from the following:							
Private physician	43%	23%	43%	47%	50%	23%	54%
Public Health	53%	75%	56%	46%	46%	71%	43%
Other	2%	1%	1%	5%	1%	5%	2%
Don't know	2%	1%	-	2%	3%	1%	1%
Places where people would go to obtain family planning information (percentage):							
Doctor	53%	39%	46%	50%	57%	56%	67%
Public Health Clinic	21%	37%	28%	19%	10%	29%	11%
Church	2%	2%	-	1%	3%	1%	3%
Relative	-	-	-	-	-	-	-
Planned Parenthood	1%	1%	2%	2%	-	1%	.6%
Other	1%	20%	1%	20%	25%	6%	1%
Don't know	17%	-	22%	5%	4%	7%	9%
Don't need or want	5%	2%	1%	2%	1%	-	8%

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TABLE 9

Distance of Families with Children Under six Years of Age From Their Pediatrician and Family Doctors.

Miles	State Total	Regions I	II	III	IV	V	VI
From Family Doctor:							
0-1	13%	15%	16%	11%	14%	13%	25%
1-5	44%	36%	38%	44%	40%	53%	38%
5-10	18%	29%	12%	21%	20%	9%	13%
10-20	13%	11%	8%	14%	15%	15%	13%
20+	12%	9%	26%	10%	11%	10%	11%
From the Pediatrician:							
0-1	6%	5%	3%	2%	1%	2%	26%
1-5	49%	19%	24%	56%	33%	59%	54%
5-10	13%	14%	33%	21%	5%	3%	9%
10-20	9%	-	10%	14%	13%	5%	4%
20+	23%	62%	30%	7%	48%	31%	7%

TABLE 10

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Immunization Schedule of Children Under Six Years of Age and the Percentage Who are up-to-date on Each Immunization

Type of Shot	State Total	Regions I	II	III	IV	V	VI
DPT							
2 mos.	94%	87%	90%	95%	92%	92%	94%
4 mos.	92%	89%	91%	92%	87%	89%	92%
6 mos.	89%	88%	93%	90%	82%	84%	90%
18 mos.	68%	64%	59%	70%	64%	68%	70%
4-6 yrs.	19%	29%	21%	19%	11%	25%	6%
POLIO							
2 mos.	88%	80%	82%	90%	86%	88%	91%
4 mos.	86%	84%	88%	86%	80%	85%	88%
6 mos.	86%	56%	84%	89%	94%	86%	96%
18 mos.	67%	71%	74%	58%	62%	73%	65%
6 yrs.	9%	18%	11%	7%	1%	17%	4%
RUBEOLA	63%	68%	53%	65%	56%	63%	63%
RUBELLA	63%	72%	58%	68%	51%	54%	66%
MUMPS	34%	31%	32%	38%	36%	23%	37%
Percent receiving no immunization	4%	5%	6%	4%	8%	4%	5%
Percent of immunizations obtained from:							
Public Health	20%	33%	35%	11%	18%	18%	19%
Private Health	54%	36%	43%	60%	64%	57%	53%
Both	23%	27%	14%	26%	18%	20%	26%
Other	1%	-	2%	1%	-	1%	3%

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TABLE 11

Frequency of Medical Problems Present in Children Under Six Years of Age
(Treated and Untreated by a Physician)

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Problems	State Total		Regions											
			I		II		III		IV		V		VI	
	T	U	T	U	T	U	T	U	T	U	T	U	T	U
Unexplained Weight loss *	1	3	1	-	-	1	-	2	-	-	-	-	-	-
Eating problems	23	44	7	4	2	4	7	19	1	6	6	6	-	5
Unexplained Tiredness *	8	1	1	-	-	-	3	1	1	-	3	-	-	-
Running Ear *	8	5	1	1	3	1	1	1	-	-	2	2	1	-
Poor vision	12	11	1	-	2	3	3	1	1	1	4	2	1	4
Headaches *	-	2	-	-	-	-	-	-	-		-	1	-	-
Toothaches	7	9	2	-	1	-	1	3	-	2	2	4	1	-
Skin rash *	43	43	14	5	4	4	12	13	5	7	5	6	3	8
Pain in chest *	3	1	2	-	-	1	-	-	1	-	-	-	-	-
Cough *	18	11	4	1	1	2	9	6	-	-	3	1	1	1
Short breath *	8	2	1	-	2	-	2	1	1	-	2	-	-	1
Cough blood *	2	2	1	-	-	-	1	-	-	2	-	-	-	-
Backache *	1	1	-	1	-	-	1	-	-	-	-	-	-	-
Pains in joint *	6	9	1	2	1	-	1	5	2	-	1	-	-	2
Open sores *	2	1	-	-	-	-	1	-	-	-	-	1	1	-
Vomitting *	2	-	-	-	-	-	1	-	1	-	-	-	-	-
Pains in Stomach *	6	4	2	2	-	-	1	-	1	2	2	-	1	1
Rupture *	10	4	2	1	2	-	3	-	-	2	3	-	-	1
Fainting *	1	-	-	-	-	-	1	-	-	-	-	-	-	-

T=Treated
U=Untreated

continued.....

Table 11. continued.....

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Medical Problems	State Total		Regions I		II		III		IV		V		VI	
	T	U	T	U	T	U	T	U	T	U	T	U	T	U
Stuttering	2	19	-	2	-	2	2	9	-	2	-	2	-	2
Seizures	5	1	-	-	-	1	3	-	1	-	-	-	1	-
Accidents	26	4	4	-	3	1	9	2	3	-	6	1	1	-
Other	7	7	-	1	-	-	5	4	1	2	-	-	1	-
Total-all medical problems	202	184	43	19	21	20	68	67	19	27	39	26	12	25
Percent of all children	14%	13%	25%	11%	13%	13%	15%	15%	10%	15%	15%	10%	5%	9%
Total - Chronic illnesses only *	120	89	29	12	13	9	38	29	12	14	21	11	7	4
Percent of all children	8%	6%	17%	7%	9%	6%	9%	7%	7%	7%	8%	4%	3%	5%

*Chronic illnesses

TABLE 12

Types and Frequencies of Handicapping Conditions
Present in Children Under Six Years of Age

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Handicap	State Total	Regions I	II	III	IV	V	VI
Speech	38	8	4	11	3	10	2
Mental Retardation	4	2	-	1	-	1	-
Visual	14	-	3	4	3	1	3
Auditory	9	4	3	2	-	-	-
Seizures	2	-	-	1	-	1	-
Orthodontic	10	4	-	-	1	1	4
Orthopedic	30	3	9	3	4	2	9
Heart	13	4	3	3	2	1	-
Cerebral Palsy	1	-	-	-	-	1	-
Potential Learning Disabilities	11	6	-	1	2	2	-
Cleft Palate	1	-	-	1	-	-	-
Other	30	-	2	5	2	15	6
Total	161	29	24	32	17	35	24
Percent of all Children under six years of age	11%	17%	15%	7%	8%	14%	9%

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TABLE 13

Number of Children Under Six Years of Age Lagging in Social, Informational and Language Development

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	Social Development			Information Development			Language Development		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
State Total Number Total Percent (N=1,486)	20 1.3%	14	6	30 2.0%	21	9	140 9.4%	82	58
Region I Number Total Percent (N=170)	4 2.4%	2	2	6 3.6%	4	2	20 12.1%	13	7
Region II Number Total Percent (N=156)	2 1.3%	1	1	6 3.8%	4	2	23 15.3%	10	13
Region III Number Total Percent (N=43)	6 1.5%	6	-	6 1.5%	6	-	55 13.3%	38	17
Region IV Number Total Percent (N=204)	1 .5%	1	-	1 .5%	1	-	14 7.0%	8	6
Region V Number Total Percent (N=258)	4 .8%	2	2	4 1.6%	4	-	14 5.4%	9	5
Region VI Number Total Percent (N=267)	3 1.1%	2	1	4 1.5%	2	2	14 5.2%	4	10

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TABLE 14

Presence of Unhealthy or Unsafe Environments in Families with Children Under the Age of Six Years

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	State Total	Regions I	II	III	IV	V	VI
Presence of Inadequate Play Area*							
Interior	18%	23%	19%	18%	23%	19%	13%
Exterior	10%	9%	6%	12%	11%	8%	8%
Presence of Safety Hazards*							
Interior	9%	11%	11%	5%	8%	8%	7%
Exterior	44%	55%	57%	47%	46%	22%	41%
Home near Commercial or Factory Operation that is Hazardous to the Safety and Health of a child*	10%	8%	7%	15%	11%	3%	6%
Relatively unclean & unsanitary premises*	3%	7%	7%	4%	2%	.6%	.6%
Percentage of time that children utilize a car seat or seat belt							
0%	63%	51%	69%	51%	68%	72%	75%
25%	7%	15%	5%	9%	7%	7%	2%
50%	8%	12%	6%	10%	5%	5%	6%
75%	6%	5%	5%	9%	6%	2%	4%
100%	16%	16%	15%	19%	14%	14%	14%

*Percent of all homes

TABLE 15

Percentage of Families With Children Under Six Years of Age Using Public Agencies and the Percentage of Those Dissatisfied With Services Received

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	State Total		Regions I		II		III		IV		V		VI	
	U	D	U	D	U	D	U	D	U	D	U	D	U	D
Health (1)	54	7	70	5	64	4	56	10	42	5	40	8	51	9
Welfare (2)	11	28	17	17	5	40	22	24	10	3	6	11	8	25
Education (3)	9	19	4	25	-	-	5	13	13	23	14	23	16	16
City (4)	4	3	2	-	-	-	2	-	1	-	4	14	12	-
Community Action (5)	3	15	5	-	-	-	1	25	6	13	2	33	4	16
Other (6)	5	4	7	-	1	-	5	7	3	25	6	-	5	-

U=Used D=Dissatisfied

Footnote: Types of Service from each agency

(1) Immunization, CCS, well-baby clinic, Family Planning, Visiting home nurse, Prenatal classes, maternal-infant, marriage counseling, mental health counseling.
(2) CDC, Foster care, adoption, AFDC, food stamps, public assistance, commodities
(3) Public kindergarten, learning disabilities, preschool screening
(4) Library story hours, zoos, parks, recreation, Model Cities
(5) Head Start, public day care
(6) Unemployment, adult services

TABLE 16

Frequency of Community Services and/or Programs Desired by Families with Children Under Six Years of Age

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Types of Services and Programs	State Total	Regions I	II	III	IV	V	VI
Don't know what is available	90	4	4	48	20	6	8
Satisfied with what is available	30	9	3	3	6	2	7
Playgrounds	132	24	31	42	7	13	15
Recreation centers and programs	119	12	22	38	9	14	24
Swimming facilities and programs	81	11	18	28	5	12	7
Day care centers	142	21	23	42	24	16	16
Day care facilities	58	1	1	31	12	6	7
Drop-in services	28	-	3	15	6	2	2
TV programs for children	48	-	1	17	6	9	15
Community meeting places	6	1	1	2	-	-	2
Some place where children can get together with others and socialize	79	2	5	26	12	24	10
Library programs	47	1	3	17	5	7	14
Special education programs	22	5	4	4	4	2	3
Kindergarten public	715	62	54	249	112	112	126
Kindergarten private	46	4	1	18	4	3	16
Head Start	54	3	2	24	21	1	3
Immunizations	57	3	2	22	5	7	18
Doctors & nurses	27	7	10	3	2	4	1
Health clinics and facilities	173	8	13	89	30	16	17
Dental clinics	26	3	3	5	1	6	8
Eye clinics	31	1	3	5	6	7	9
Preschool screening for all children	90	-	2	26	20	8	34

TABLE 16.....continued

BEST COPY AVAILABLE

Types of Services and Programs	State Total	Regions I	II	III	IV	V	VI
Family planning clinics	8	-	-	6	1	-	1
Mental health & parent counseling	23	4	4	3	3	4	5
Education on maternal health, childbirth & child care	7	-	-	1	3	2	1
Child Welfare Services	7	1	1	2	1	2	-
Services available to everyone regardless of income	34	8	-	21	4	1	1
Other	132	23	8	63	13	10	15
Opposed to any State or Federal programs	9	-	1	2	1	-	5
Church provides services needed	12	-	3	6	-	1	2
Speech & hearing clinics	16	-	1	3	4	5	3
Programs for the handicapped	36	2	24	2	2	1	5
Educational nursery schools	98	13	3	33	16	8	25
Public Transportation for preschoolers	8	6	1	1	-	-	-
Information Referral	13	-	1	12	-	-	-

TABLE 17

Child Development Programs Desired by Families With Children Under Six Years of Age

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	State Total	Regions I	II	III	IV	V	VI
Percent of families that would watch informative TV programs on child development	90%	93%	86%	95%	88%	90%	85%
Desired Programs:		Frequencies					
Nutrition	4%	4	4	4	4	7	1
Health Problems	15%	15	10	17	14	21	9
Behavior patterns	23%	15	11	36	13	21	21
Free time activities	5%	1	5	7	3	6	3
Educational (intellectual) development	31%	27	24	32	34	41	24
Emotional development	9%	2	2	6	17	15	9
Social development	3%	-	-	1	7	7	2
Physical development	3%	1	-	5	5	4	1
Adolescent programs	4%	1	8	2	3	5	7
General programs	26%	5	13	13	41	39	53
Discipline	11%	5	9	10	14	14	16
Emotional restraint of parents	1%	13	3	2	1	1	-
Special programs handicapped	1%	5	-	1		-	2
Sex Education child birth	1%	-	1	2	1	-	-
Other	8%	5	-	16	16	3	1
Don't know	7%	-	10	8	10	1	-
Most convenient time to watch TV for:							
Respondent							
Morning	21%	39%	29%	19%	15%	20%	15%
Afternoon	28%	22%	29%	26%	36%	26%	32%
Evening	32%	20%	21%	42%	29%	30%	27%
Night	19%	19%	21%	13%	20%	22%	27%

Table 17 continued.....

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	Total	I	II	III	IV	V	VI
Spouse							
Morning	0.6%	-	-	1%	-	1%	1%
Afternoon	1 %	-	1%	4%	1%	1%	1%
Evening	35 %	9%	9%	51%	28%	56%	21%
Night	27 %	18%	18%	21%	37%	42%	27%
No response	36 %	73%	72%	23%	34%	-%	48%
Percent of families that would use booklets and pamphlets on child development	85%	87%	86%	88%	75%	88%	82%
Percentage of parents who would use the following services if their children were lagging in development:							
Center	51%	57%	52%	57%	50%	47%	45%
Clinic	71%	71 %	70%	78%	64%	68%	67%
In home	55%	62%	46%	69%	45%	49%	42%
In home and at sitters	17%	15%	10%	27%	18%	12%	6%
None	1%	2%	1%	1%	1%	-%	3%
Alternative given	4%	3%	2%	9%	2%	3%	1%

Table 18

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Idaho Day Care Profile

Type of Facility	Number of Facilities	Number of Children	Average Cost Per Child Per: Year	Month	Day
Group Care Homes (6-12)					
Licensed	14	93	$570	$48	$2.40
Nonlicensed	18	131	$636	$53	$2.65
Total	32	224	$607	$51	$2.55
Day Care Centers (12 or more)					
Licensed	27	869	$679	$57	$2.85
Nonlicensed	25	528	$567	$47	$2.35
Total	52	1,397	$625	$52	$2.60

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Table 19 Population of Children (0-5) by Age and Race for Region I

BEST COPY AVAILABLE

County	AGE under 1		1		2		3		4		5				
	caucasian	other	caucasian	other	caucasian	other	caucasian	other	caucasian	other	caucasian	other	caucasian total	other total	gran tota
Benewah	108	5	94	7	101	7	108	9	105	9	108	7	624	44	668
Bonner	228	1	214	2	215	1	202	2	217	5	264	4	1340	15	1355
Boundary	96	0	101	0	95	1	109	1	113	0	125	1	639	3	642
Kootenai	578	5	586	9	560	7	551	3	570	5	616	5	3461	34	3495
Shoshone	424	7	410	9	380	8	391	11	385	3	434	10	2424	48	2472
TOTAL	1434	18	1405	27	1351	24	1361	26	1390	22	1547	27	8488	144	8632

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Table 20 Population of Children (0-5) by Age and Race for Region II

BEST COPY AVAILABLE

County	AGE under 1		1		2		3		4		5				
	caucasian	other	caucasian	other	caucasian	other	caucasian	other	caucasian	other	caucasian	other	caucasian total	other total	gran tota
Latah	465	9	426	9	370	12	356	11	348	7	357	7	2322	55	2377
Nez Perce	503	27	503	27	492	31	480	24	537	20	524	32	3039	161	3200
Lewis	56	5	66	1	48	2	53	1	57	3	61	2	341	14	355
Clearwater	191	3	216	5	181	5	215	1	174	0	203	9	1180	23	1203
Idaho	202	1	208	4	196	1	191	3	247	5	263	7	1307	21	1328
TOTAL	1417	45	1419	46	1287	51	1295	40	1363	35	1408	57	8189	274	8463

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Table 21 Population of Children (0-5) by Age and Race for Region III

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County	AGE under 1		1		2		3		4		5				
	caucasian	other	caucasian	other	caucasian	other	caucasian	other	caucasian	other	caucasian	other	caucasian total	other total	grand total
Adams	48	0	43	0	43	0	39	0	39	0	56	0	268	0	268
Valley	68	1	54	0	47	0	54	1	54	0	66	0	343	2	345
Washington	114	1	111	3	110	1	102	2	103	7	108	3	648	17	665
Payette	195	3	196	5	200	2	176	1	193	5	201	4	1161	20	1181
Gem	153	2	168	2	148	4	130	1	137	4	172	1	908	14	922
Canyon	1088	21	1030	23	982	15	952	24	957	15	1007	20	6016	118	6134
Ada	2030	30	1925	35	1810	30	1813	29	1889	21	2005	22	11472	167	11639
Owyhee	110	9	114	4	100	10	109	9	111	9	89	11	633	52	685
Elmore	422	20	344	27	278	19	316	21	312	29	382	26	2054	142	2196
Boise	27	1	27	0	26	1	37	0	33	0	33	0	183	2	185
TOTAL	4255	88	4012	99	3744	82	3728	88	3828	90	4119	87	23686	534	24220

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Table 22 Population of Children (0-5) by Age and Race for Region IV

County	AGE under 1		1		2		3		4		5				
	caucasian	other	caucasian	other	caucasian	other	caucasian	other	caucasian	other	caucasian	other	caucasian total	other total	grand total
Jerome	174	0	170	1	130	1	158	0	139	1	168	2	939	5	944
Twin Falls	722	8	655	7	672	9	686	4	683	6	703	8	4121	42	4163
Minidoka	300	8	273	3	289	5	291	10	297	4	309	13	1759	43	1802
Lincoln	41	0	55	0	33	1	49	0	36	0	48	1	262	2	264
Gooding	130	0	132	1	117	4	126	0	135	1	145	2	785	8	793
Camas	6	0	13	0	7	0	7	0	9	0	11	0	53	0	53
Blaine	95	1	88	1	96	1	101	0	89	1	98	1	567	5	572
Cassia	352	6	394	10	331	3	334	6	379	7	317	7	2107	39	2146
TOTAL	1820	23	1780	23	1675	24	1752	20	1767	20	1799	34	10593	144	10737

1970 Census of Population. General Population Characteristics: Idaho

0184

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Table 23 Population of Children (0-5) by Age and Race for Region V

County	AGE under 1		1		2		3		4		5				
	caucasian	other	caucasian	other	caucasian	other	caucasian	other	caucasian	other	caucasian	other	caucasian total	other total	grand total
Power	91	7	85	5	93	6	65	4	78	4	90	7	502	33	535
Bingham	591	67	567	63	518	67	580	49	562	61	586	50	3404	357	3761
Bannock	1089	52	1013	37	946	29	962	38	949	38	919	37	5878	231	6109
Bear Lake	94	2	94	0	93	0	114	2	98	0	97	0	590	4	594
Caribou	133	0	124	0	129	0	151	0	149	0	129	0	815	0	815
Oneida	33	0	59	0	48	0	43	0	39	1	47	0	269	1	270
Franklin	144	1	131	1	125	0	145	2	123	0	135	1	803	5	808
TOTAL	2175	129	2073	106	1952	102	2060	95	1998	104	2003	95	12261	631	12892

1970 Census of Population. General Population Characteristics: Idaho

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Table 24 Population of Children (0-5) by Age and Race for Region VI

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County	AGE under 1		1		2		3		4		5				
	caucasian	other	caucasian	other	caucasian	other	caucasian	other	caucasian	other	caucasian	other	caucasian total	other total	grand total
Bonneville	1120	21	1119	24	1040	34	1158	20	1082	20	1127	19	6646	138	6784
Butte	51	0	52	0	57	1	58	0	56	0	67	1	341	2	343
Custer	57	1	40	0	47	1	38	1	42	1	45	2	269	6	275
Clark	19	0	14	0	15	0	15	2	15	0	13	0	91	2	93
Fremont	180	4	167	1	145	3	183	2	189	4	135	1	999	15	1014
Jefferson	197	5	248	9	248	7	234	2	220	5	233	8	1380	36	1416
Lemhi	85	0	101	0	91	0	84	0	85	1	100	1	546	2	548
Madison	265	3	241	3	204	1	212	2	206	2	209	1	1337	12	1349
Teton	36	3	39	0	43	0	39	0	52	0	48	0	257	3	260
TOTAL	2010	37	2021	37	1890	47	2021	29	1947	33	1977	33	11866	216	12082

1970 Census of Population. General Population Characteristics: Idaho

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Table 25 Population of Children (0-5) by Age and Race for the State of Idaho

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Region	AGE under 1		1		2		3		4		5				
	caucasian	other	caucasian	other	caucasian	other	caucasian	other	caucasian	other	caucasian	other	caucasian total	other total	grand total
Region I	1434	18	1405	27	1351	24	1361	26	1390	22	1547	27	8488	144	8632
Region II	1417	45	1419	46	1287	51	1295	40	1363	35	1408	57	8189	274	8463
Region III	4255	88	4012	99	3744	82	3728	88	3828	90	4119	87	23686	534	24220
Region IV	1820	23	1780	23	1675	24	1752	20	1767	20	1799	34	10593	144	10737
Region V	2175	129	2073	106	1952	102	2060	95	1998	104	2003	95	12261	631	12892
Region VI	2010	37	2021	37	1890	47	2021	29	1947	33	1977	33	11866	216	12082
TOTAL	13111	340	12710	338	11899	330	12217	298	12293	304	12853	333	75083	1943	77026

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1970 Census of Population. General Population Characteristics: Idaho

Table 26 Types of Families With Own Children Under Six for Region I

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	all families			husband-wife families			families w/female head			families w/male head		
County	total	white	non white	total	white	non white	total	white	non white	total	white	non white
Boundary	391	390	1	359	358	1	29	29	0	3	3	0
Bonner	850	846	4	796	792	4	46	46	0	8	8	0
Kootenai	2248	2225	23	2003	1986	17	224	220	4	21	19	2
Benewah	422	403	19	404	390	14	16	11	5	2	2	0
Shoshone	1473	1446	27	1387	1362	25	71	70	1	15	14	1
TOTAL	5384	5310	74	4949	4888	61	386	376	10	49	46	3

1970 Census of Population. General Population Characteristics: Idaho

Table 27 Types of Familes With Own Children Under Six for Region II

BEST COPY AVAILABLE

	all families			husband-wife families			families w/female head			families w/male head		
County	total	white	non white	total	white	non white	total	white	non white	total	white	non white
Latah	1592	1568	24	1524	1501	23	61	61	0	7	6	1
Nez Perce	2038	1973	65	1802	1751	51	224	211	13	12	11	1
Clearwater	790	777	13	745	736	9	37	33	4	8	8	0
Lewis	226	218	8	215	209	6	7	6	1	4	3	1
Idaho	819	810	9	781	774	7	33	32	1	5	4	1
TOTAL	5465	5346	119	5067	4971	96	362	343	19	36	32	4

1970 Census of Population. General Population Characteristics: Idaho

Table 28 Types of Families With Own Children Under Six for Region III

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County	all families			husband-wife families			families w/female head			families w/male head		
	total	white	non white	total	white	non white	total	white	non white	total	white	non white
Adams	182	181	1	175	174	1	6	6	0	1	1	0
Valley	228	226	2	218	217	1	9	8	1	1	1	0
Washington	431	423	8	402	395	7	28	27	1	1	1	0
Payette	747	738	9	685	676	9	59	59	0	3	3	0
Gem	625	622	3	587	584	3	35	35	0	3	3	0
Boise	116	115	1	106	106	0	8	7	1	2	2	0
Canyon	3865	3800	65	3520	3462	58	309	304	5	36	34	2
Ada	7719	7623	96	7043	6958	85	629	619	10	47	46	1
Elmore	1513	1425	88	1407	1331	76	99	87	12	7	7	0
Owyhee	417	386	31	394	365	29	18	16	2	5	5	0
TOTAL	15843	15539	304	14537	14268	269	1200	1168	32	106	103	3

1970 Census of Population. General Population Characteristics: Idaho

0190

Table 29 Types of Families with Own Children Under Six for Region IV

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	all families			husband-wife families			families w/female head			families w/male head		
County	total	white	non white	total	white	non white	total	white	non white	total	white	non white
Camas	35	35	0	34	34	0	1	1	0	0	0	0
Blaine	380	378	2	352	350	2	27	27	0	1	1	0
Gooding	482	477	5	462	457	5	17	17	0	3	3	0
Lincoln	169	167	2	165	164	1	4	3	1	0	0	0
Jerome	601	600	1	558	557	1	34	34	0	9	9	0
Minidoka	1144	1120	24	1080	1058	22	58	56	2	6	6	0
Twin Falls	2686	2663	23	2411	2390	21	257	255	2	18	18	0
Cassia	1332	1310	22	1225	1205	20	96	95	1	11	10	1
TOTAL	8829	6750	79	6287	6215	72	494	488	6	48	47	1

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Table 30 Types of Families With Own Children Under Six for Region V.

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	all families			husband-wife families			families w/female head			families w/male head		
County	total	white	non white	total	white	non white	total	white	non white	total	white	non white
Bingham	2250	2102	148	2086	1959	127	145	127	18	19	16	3
Power	343	333	10	328	318	10	12	12	0	3	3	0
Bannock	3951	3844	107	3590	3499	91	323	309	14	38	36	2
Caribou	506	506	0	483	483	0	22	22	0	1	1	0
Oneida	169	169	0	164	164	0	5	5	0	0	0	0
Franklin	493	490	3	472	470	2	18	18	0	3	2	1
Bear Lake	371	371	0	362	362	0	9	9	0	0	0	0
TOTAL	8083	7815	268	7485	7255	230	534	502	32	64	58	6

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Table 31 Types of Families With Own Children Under Six for Region VI

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County	all families			husband-wife families			families w/female head			families w/male head		
	total	white	non white	total	white	non white	total	white	non white	total	white	non white
Lemhi	341	340	1	325	325	0	16	15	1	0	0	0
Custer	171	169	2	164	162	2	7	7	0	0	0	0
Butte	217	216	1	202	201	1	13	13	0	2	2	0
Clark	56	54	2	55	53	2	1	1	0	0	0	0
Fremont	608	603	5	586	581	5	19	19	0	3	3	0
Jefferson	838	818	20	793	774	19	36	36	0	9	8	1
Madison	809	804	5	790	786	4	18	17	1	1	1	0
Teton	157	156	1	151	150	1	4	4	0	2	2	0
Bonneville	4334	4265	69	4029	3963	66	280	278	2	25	24	1
TOTAL	7531	7425	106	7095	6995	100	394	390	4	42	40	2

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Table 32 Types of Families With Own Children Under Six for the State of Idaho

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	all families			husband-wife families			families w/female head			families w/male head		
Region	total	white	non white	total	white	non white	total	white	non white	total	white	non white
Region I	5384	3310	74	4949	4888	61	386	376	10	49	46	3
Region II	5465	5346	119	5067	4971	96	362	343	19	36	32	4
Region III	15843	15539	304	14537	14268	269	1200	1168	32	106	103	3
Region IV	6829	6750	79	6287	6215	72	494	488	6	48	47	1
Region V	8083	7815	268	7485	7255	230	534	502	32	64	58	6
Region VI	7531	7425	106	7095	6995	100	394	390	4	42	40	2
TOTAL	49135	48185	950	45420	44592	828	3370	3267	103	345	326	19

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001094

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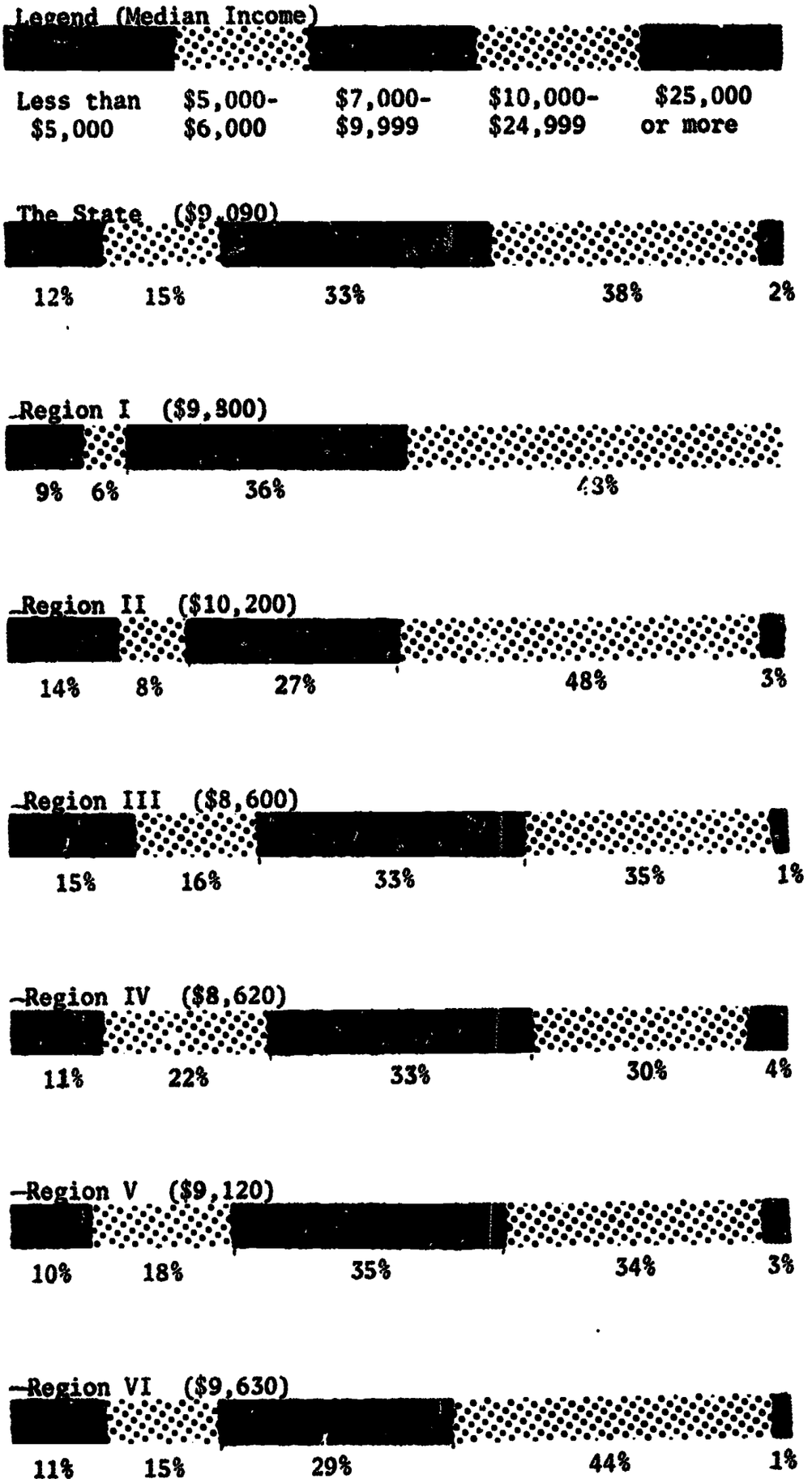

Figure I. Income levels of families with children under six years of age.

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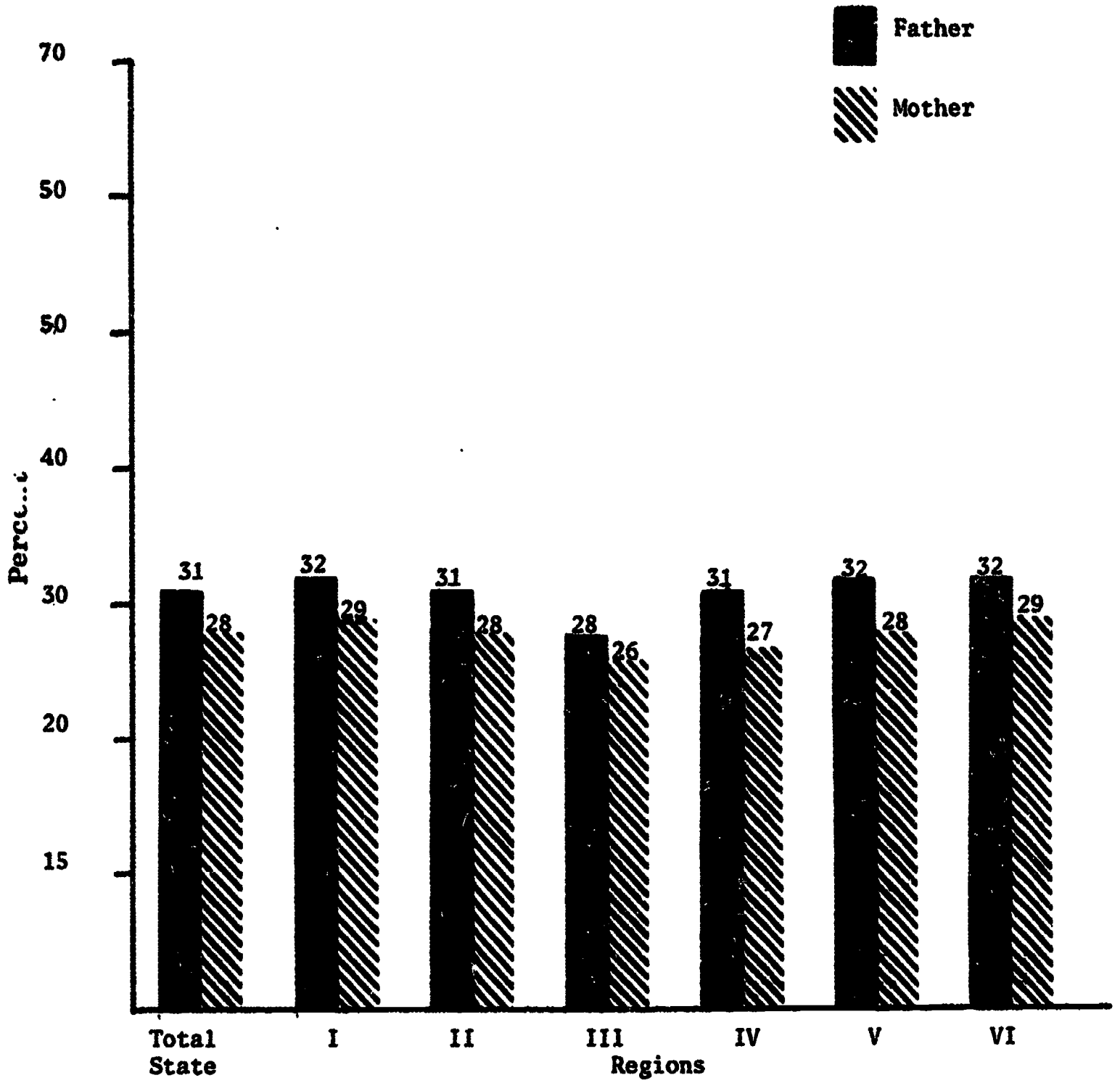

Figure II. Median age of Parents with children under six years of age.

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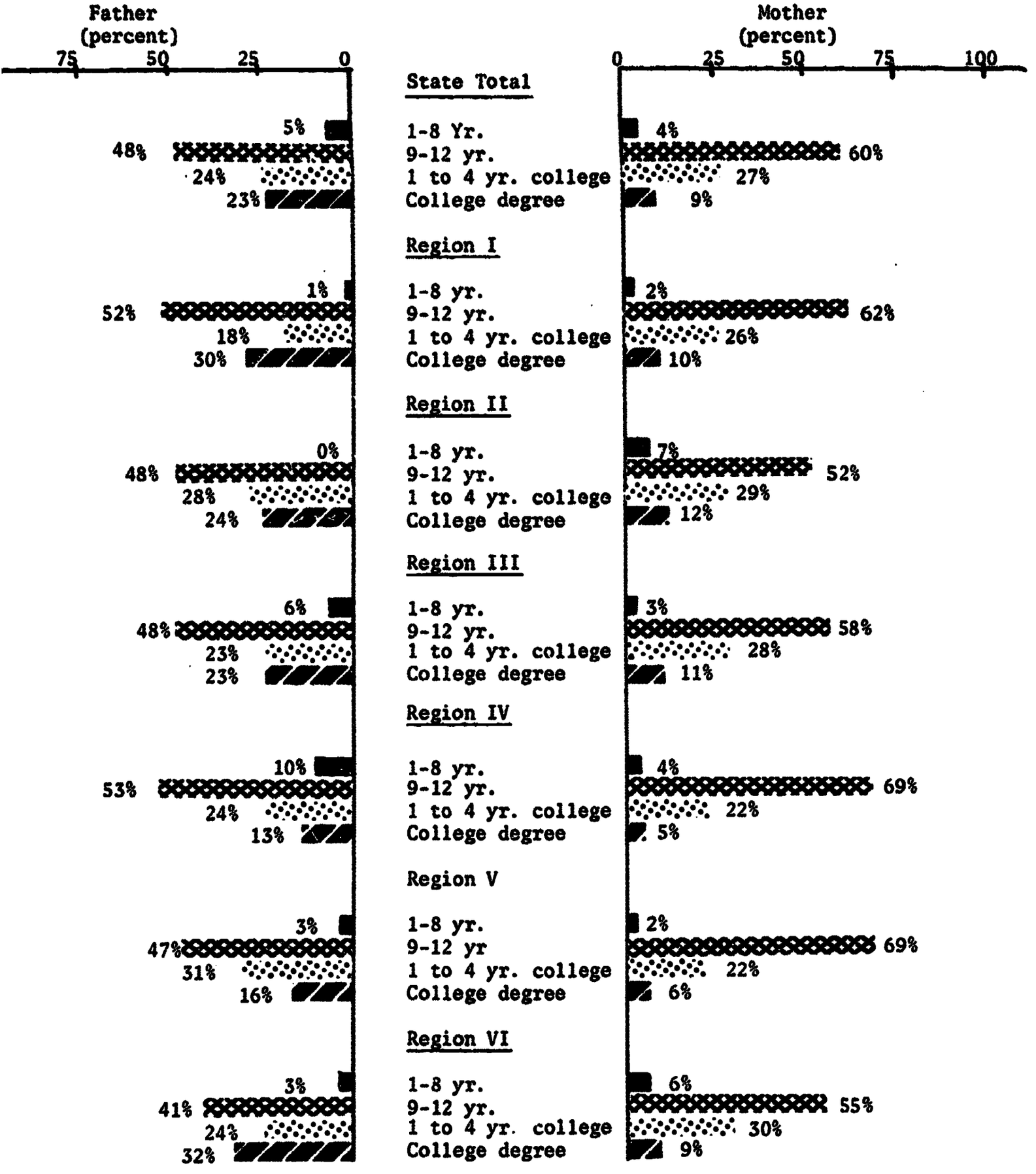

Figure III. Years of School completed by parents of children under the age of Six

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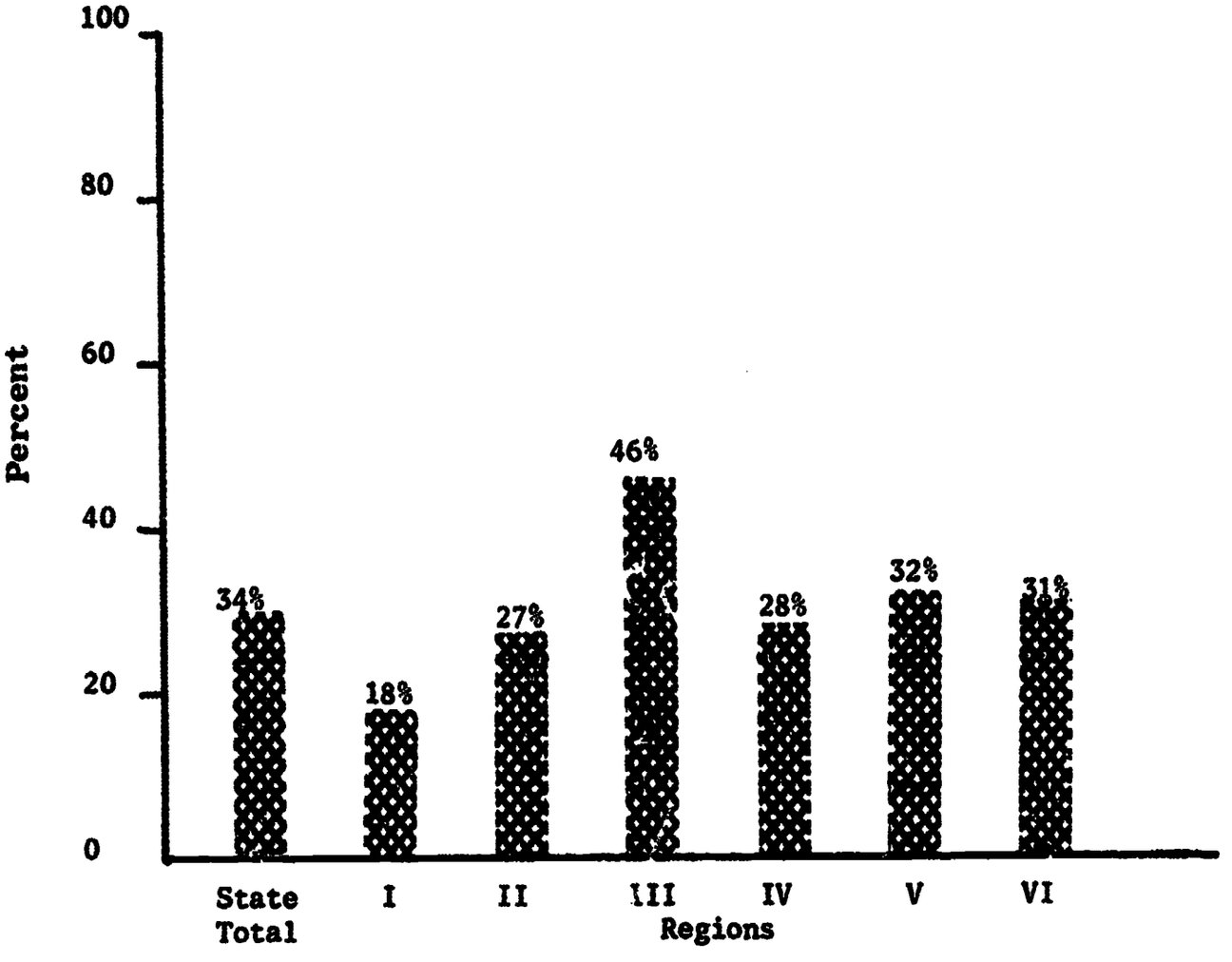

Figure IV. Percentage of households with children under six years of age with mother in the labor force.

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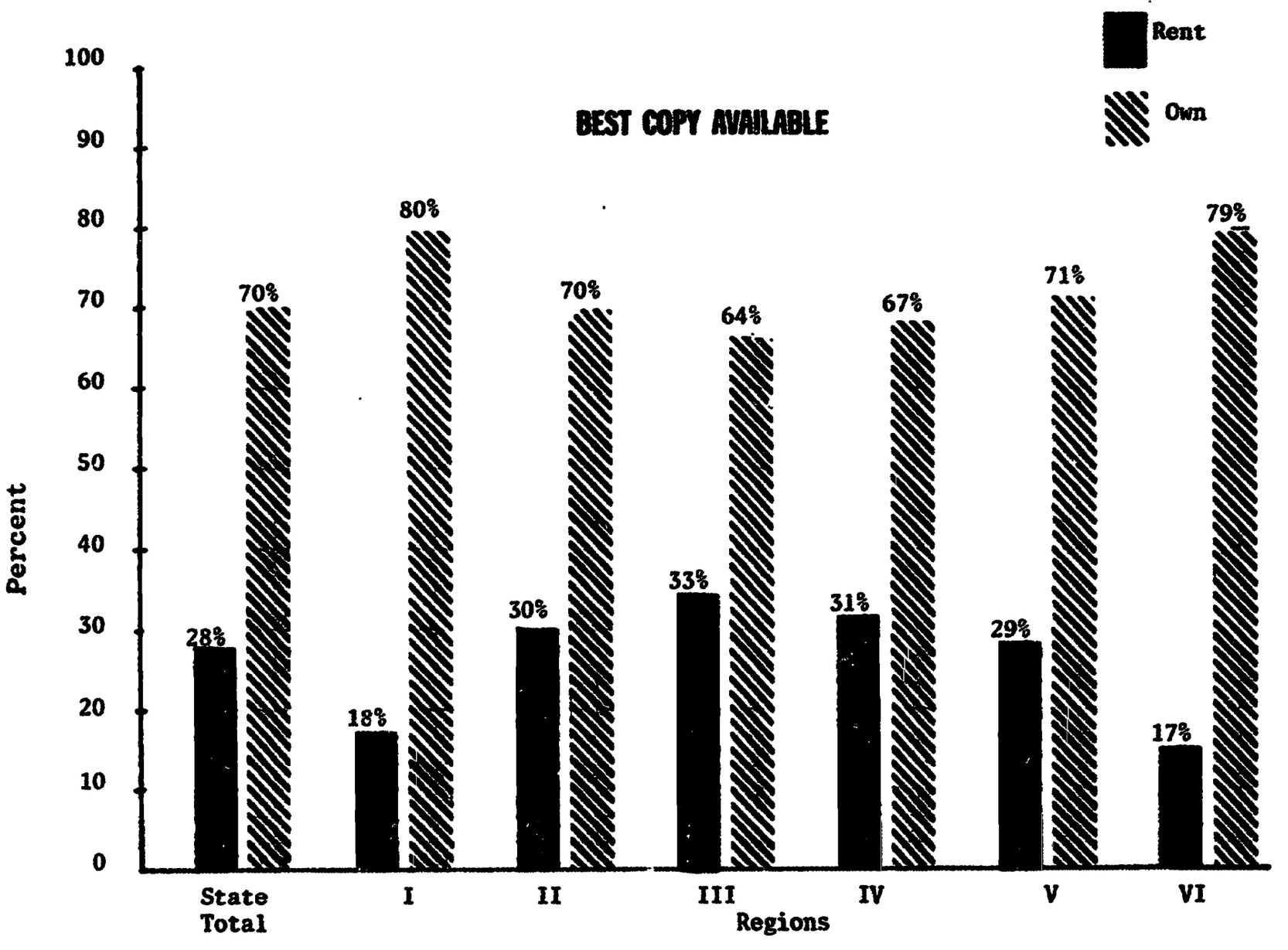

Figure V. Percentage of families with children under six years of age who either own their own home or are renting.

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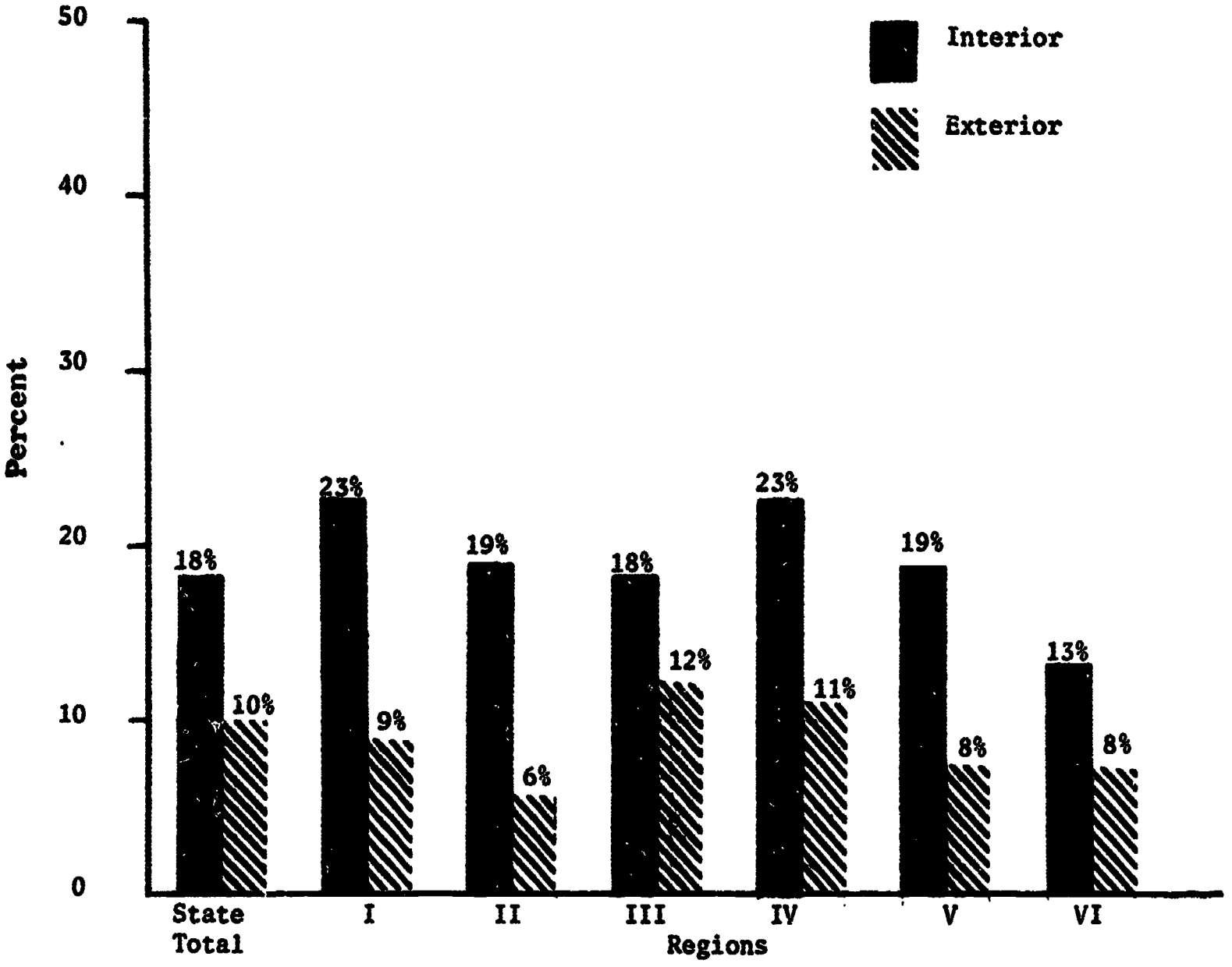

Figure VI. Percentage of homes with inadequate play area (interior and exterior) for children under the age of six years.

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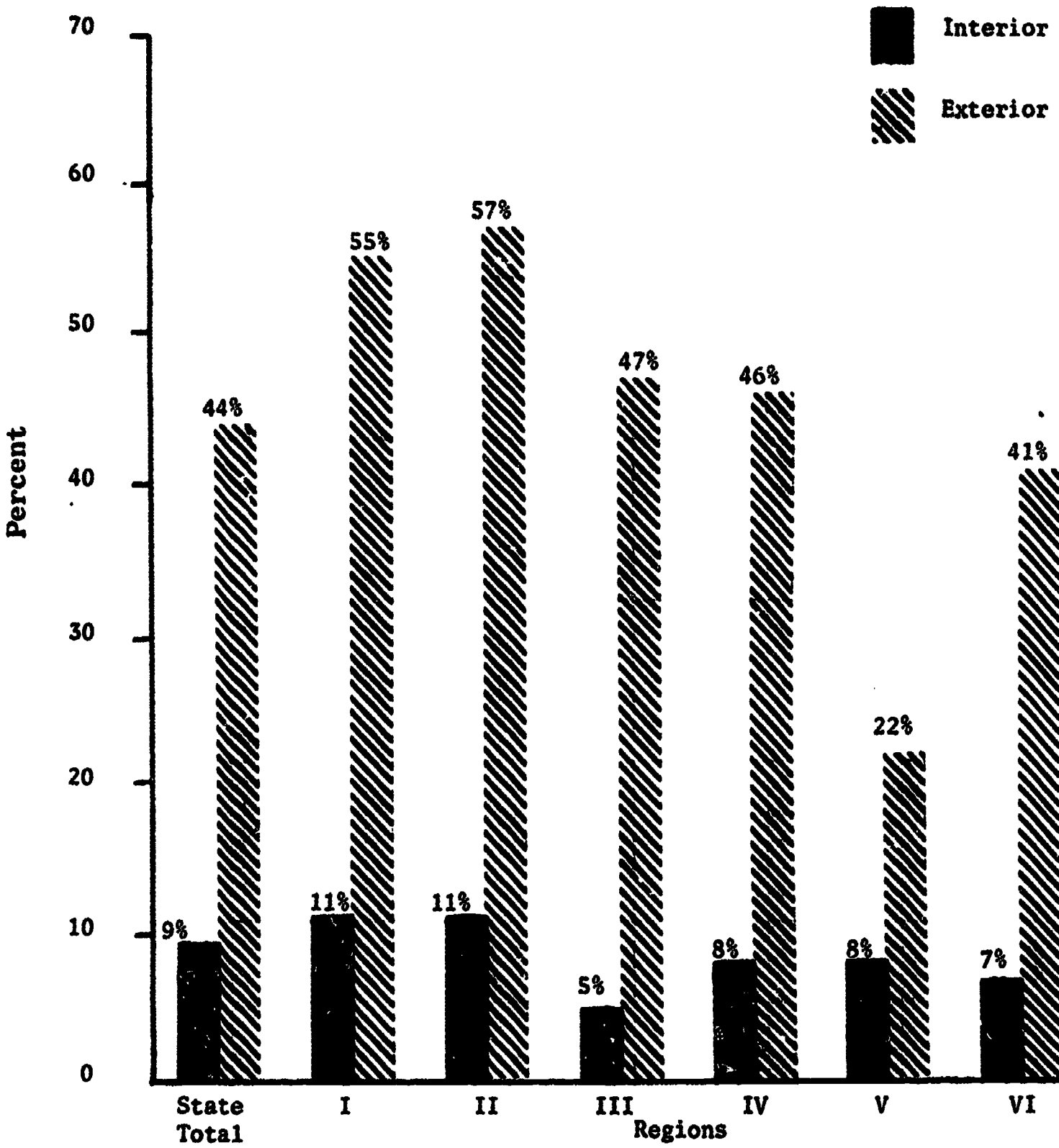

Figure VII. Percentage of homes with children under six years of age where safety hazards exist (either interior or exterior).

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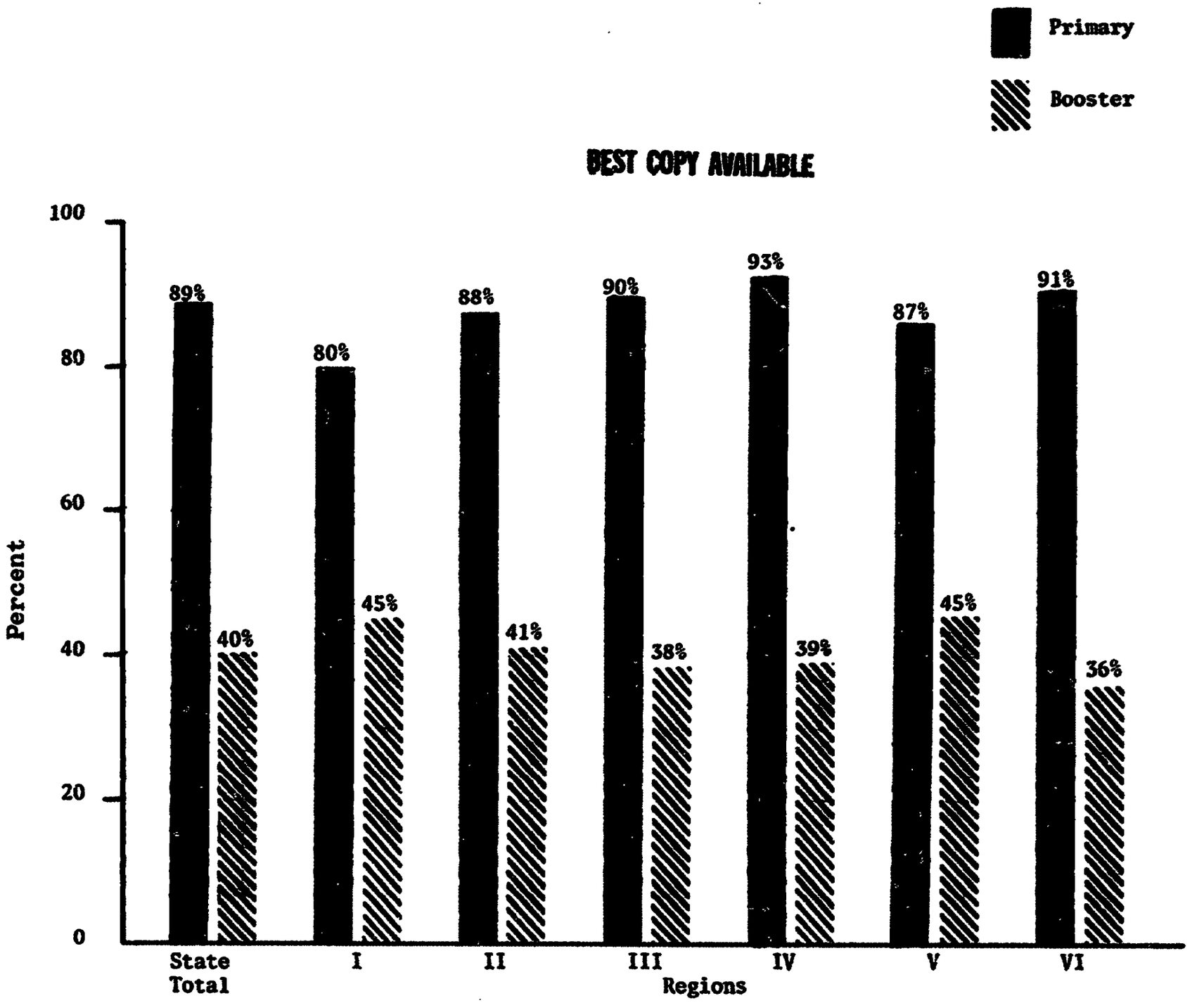

Figure VIII. Percentage of children under the age of six years who are up to date on their Primary and Booster DPT and polio immunizations.

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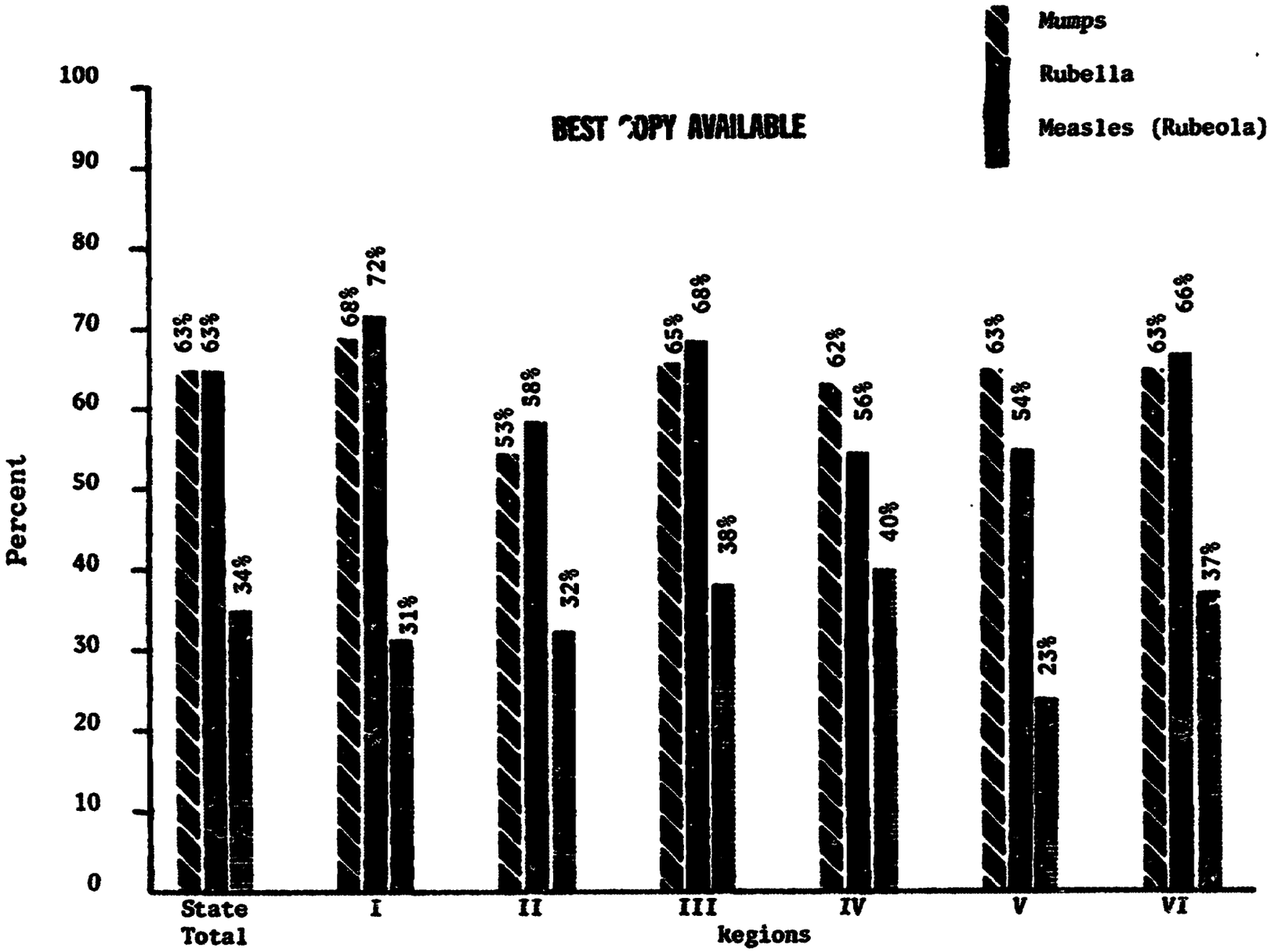

Figure IX. Percentage of children under six years of age who have been immunized against mumps, rubella and measles (rubeola).

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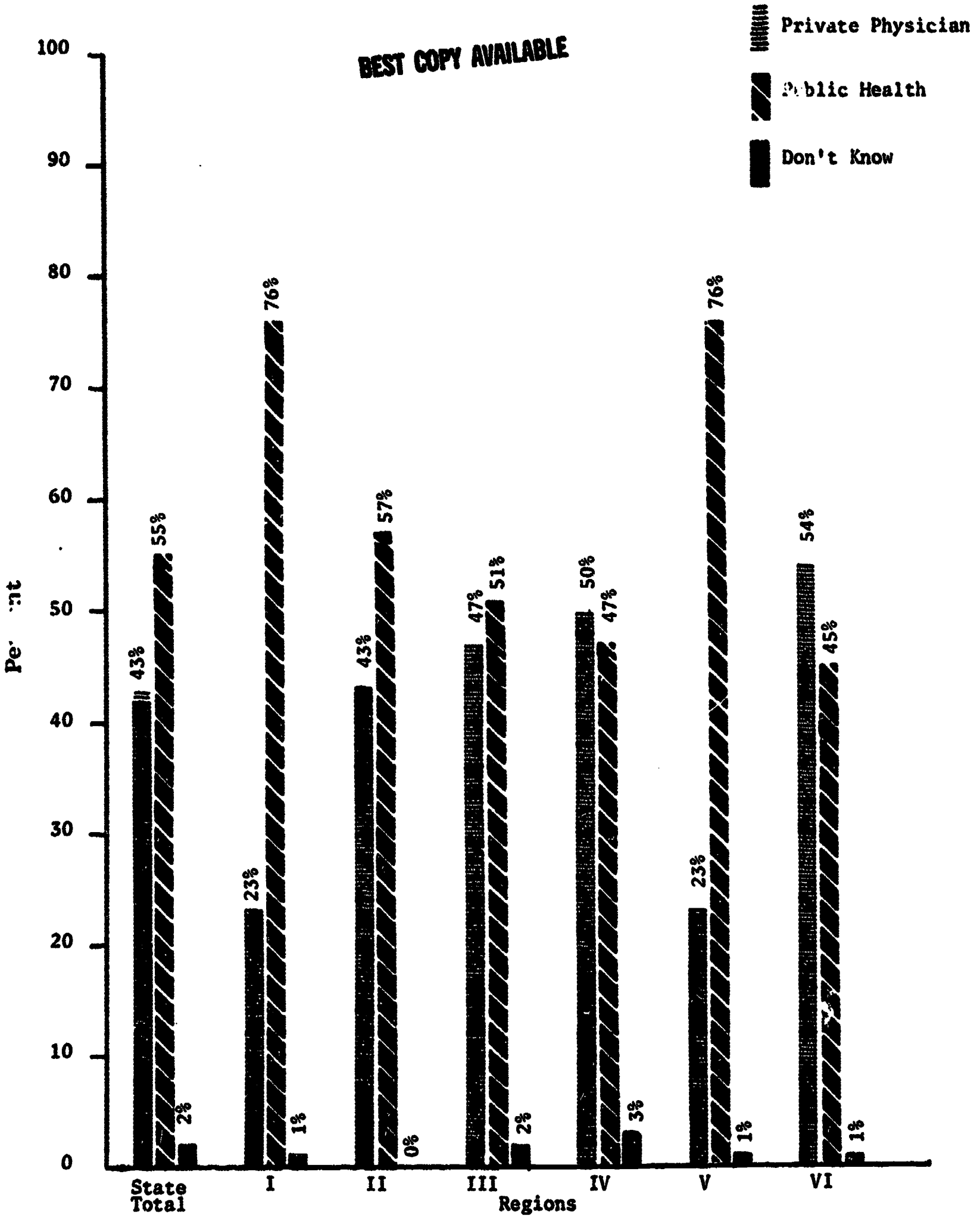

Figure X. Percentage of families with children under the age of six who know where immunizations might be obtained.

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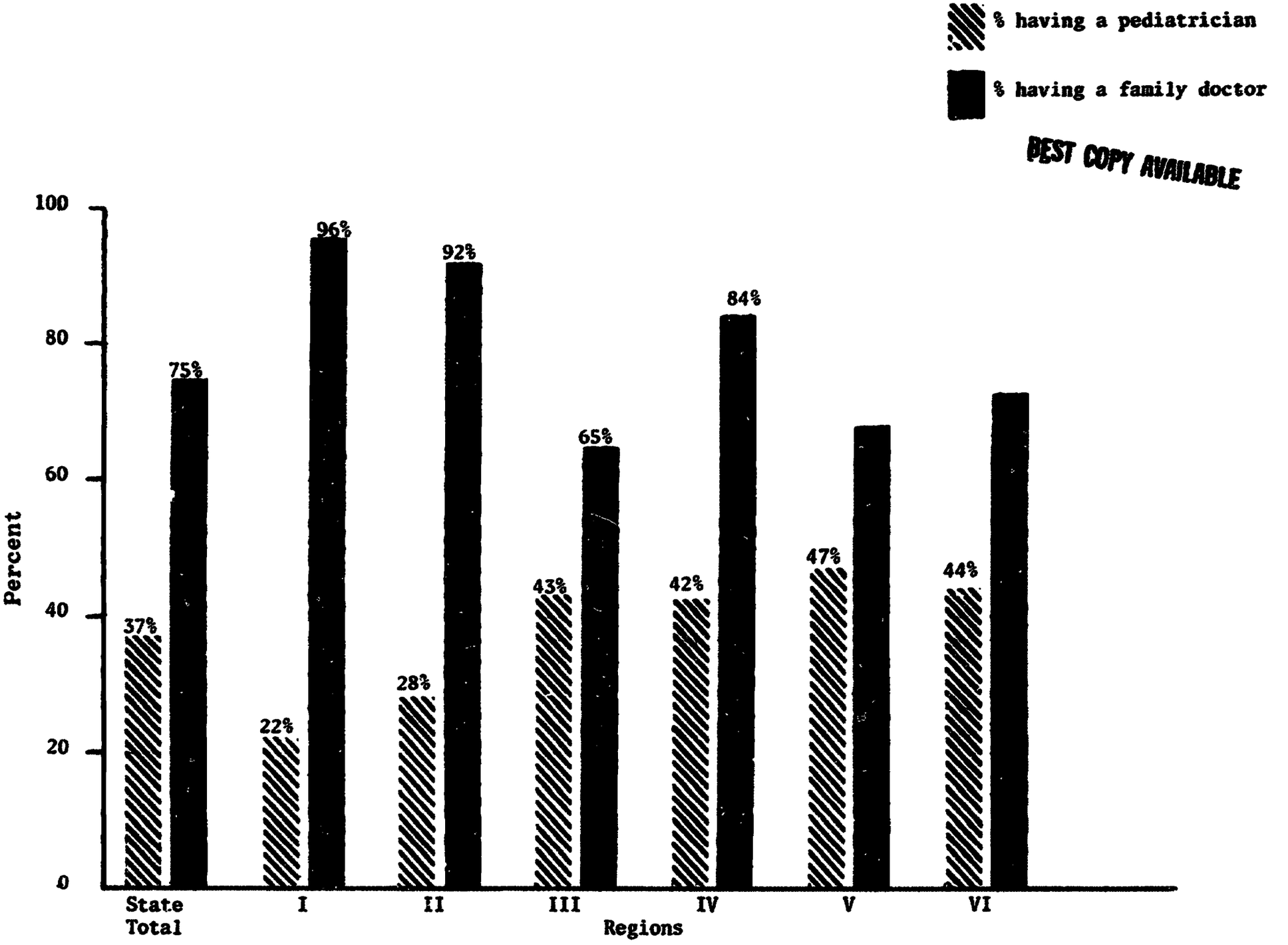

Figure XI. Percentage of families with children under the age of six years who have either a pediatrician or a family doctor.

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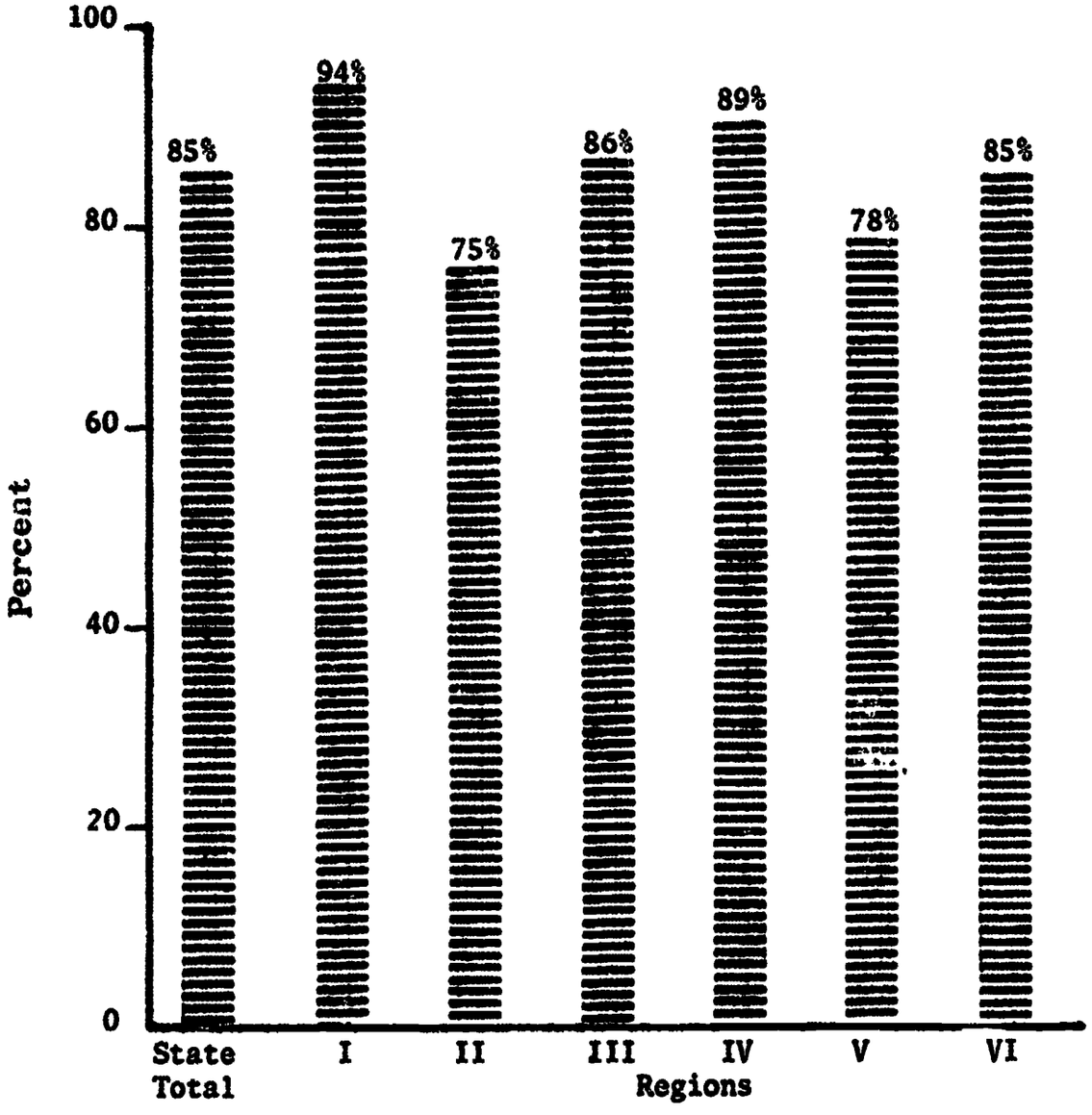

Figure XII. Percentage of 4-6 year olds who have not visited an optometrist or opthalmologist.

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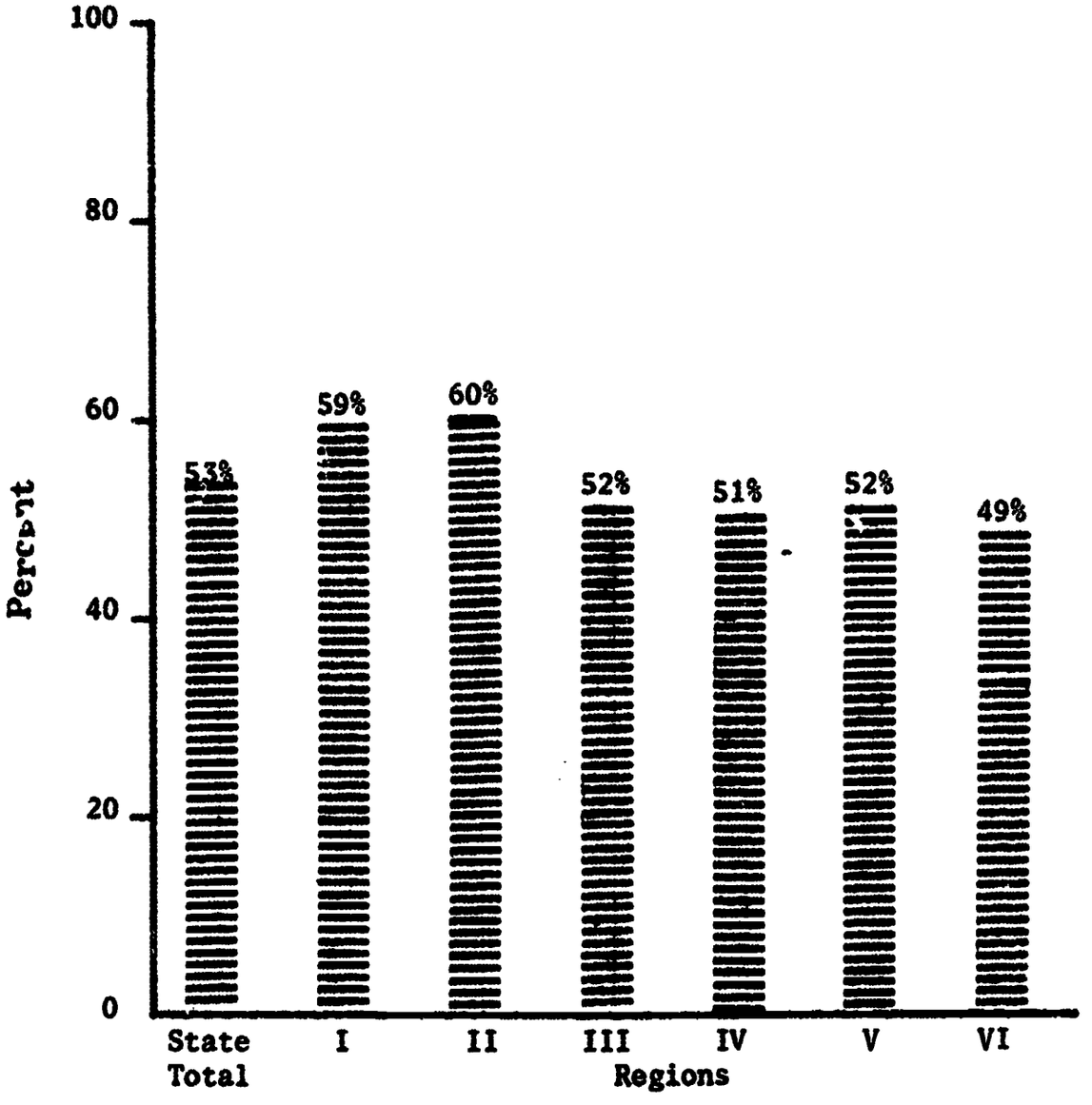

Figure XIII. Percentage of 3-6 year olds who have not visited a dentist.

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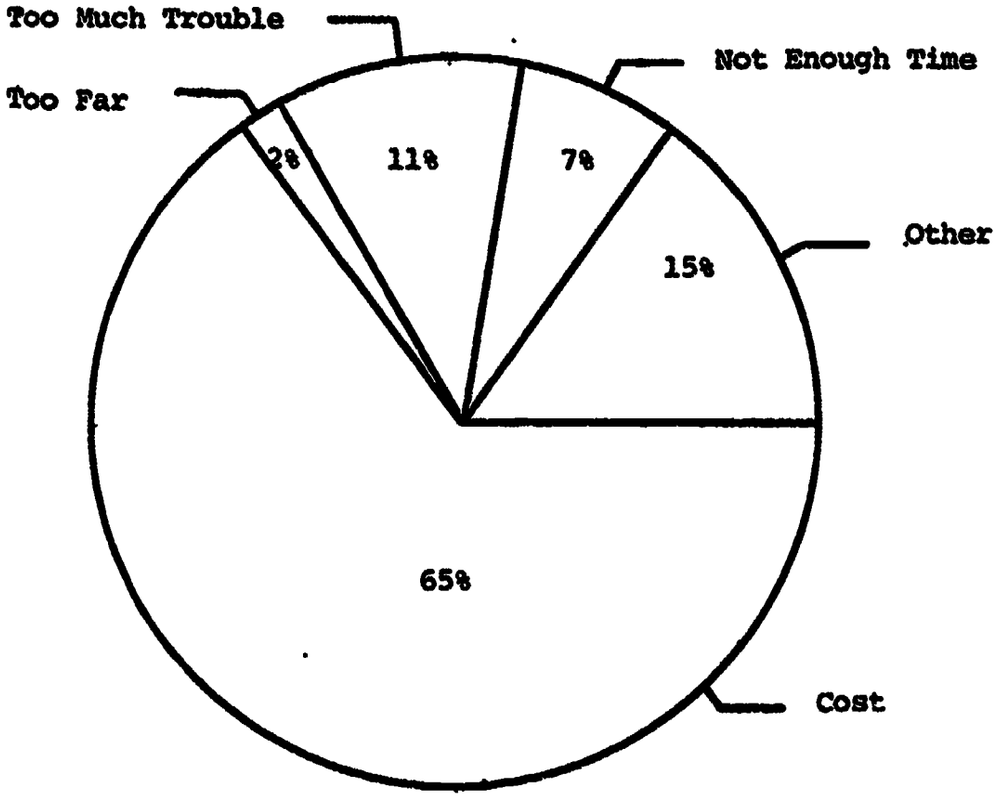

Figure XIV. Reasons given for not taking a child to visit a doctor as often as parents would like to.

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*Unexplained loss of weight
Unexplaine d tiredness
Running ear - watery, bloody, pus
Persistent headaches
Persistent skin rashes
Persistent pains in chest
Persistent Cough
Severe shortness of breath
Coughing or spitting up blood
Persistent backache
Persistent Pains in joints
Open or running sores that do not heal
Repeated vomiting
Repeated pains in stomach
Rupture - Hernia
Fainting spells

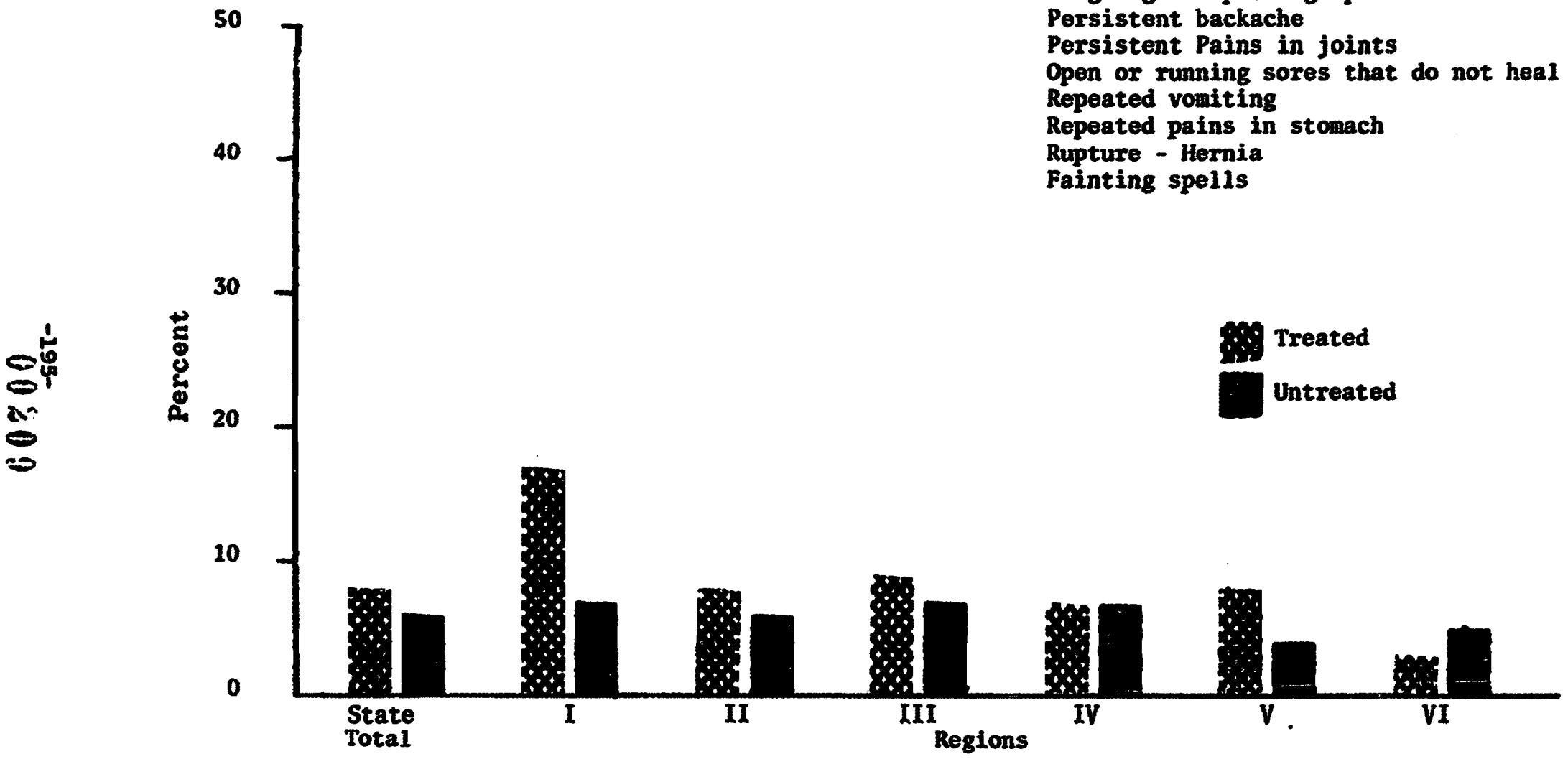

Figure XV. Percentage of children under six with treated or untreated chronic illnesses.*

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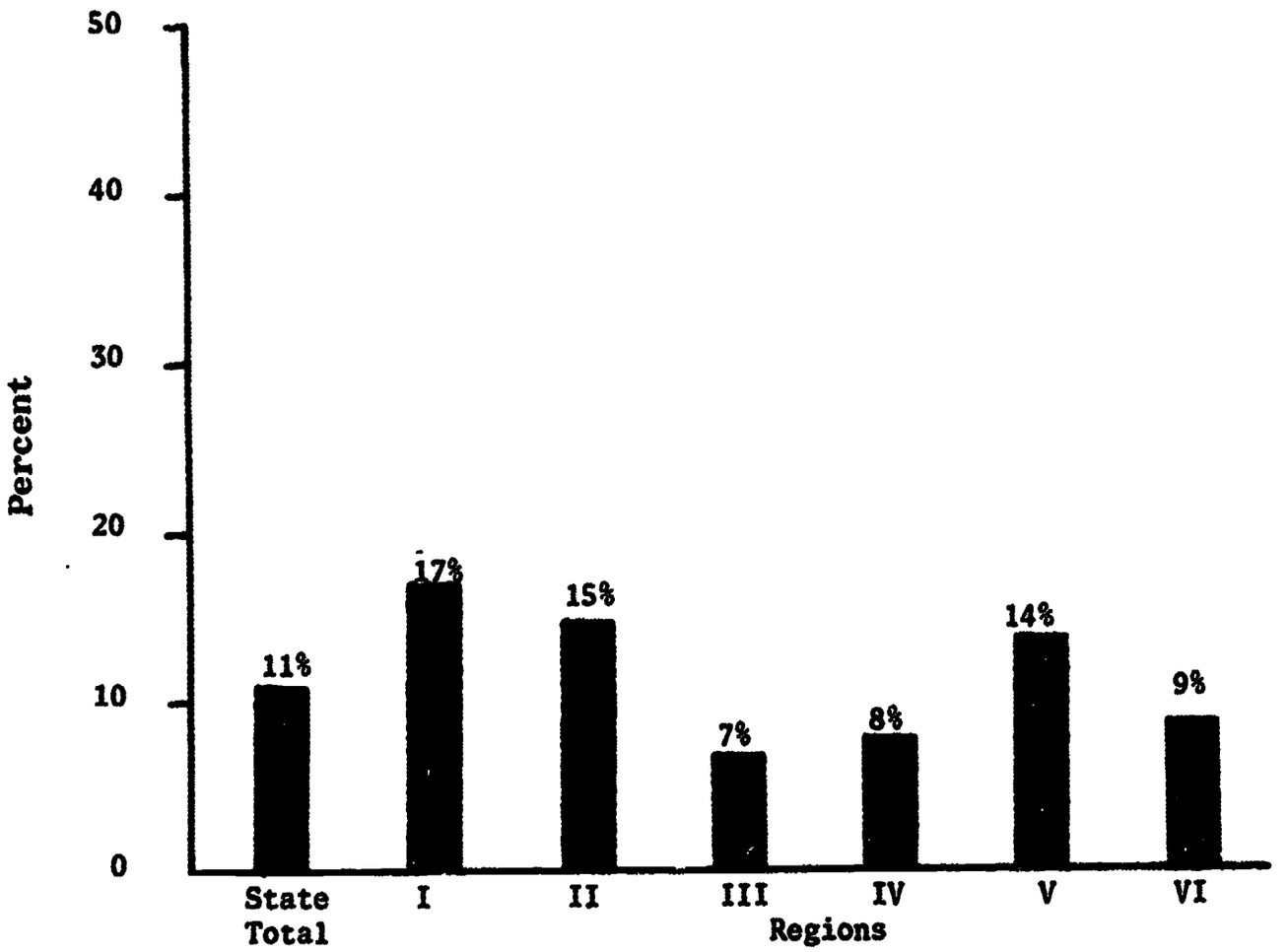

Figure XVI. Percent of children under six years with handicapping conditions.

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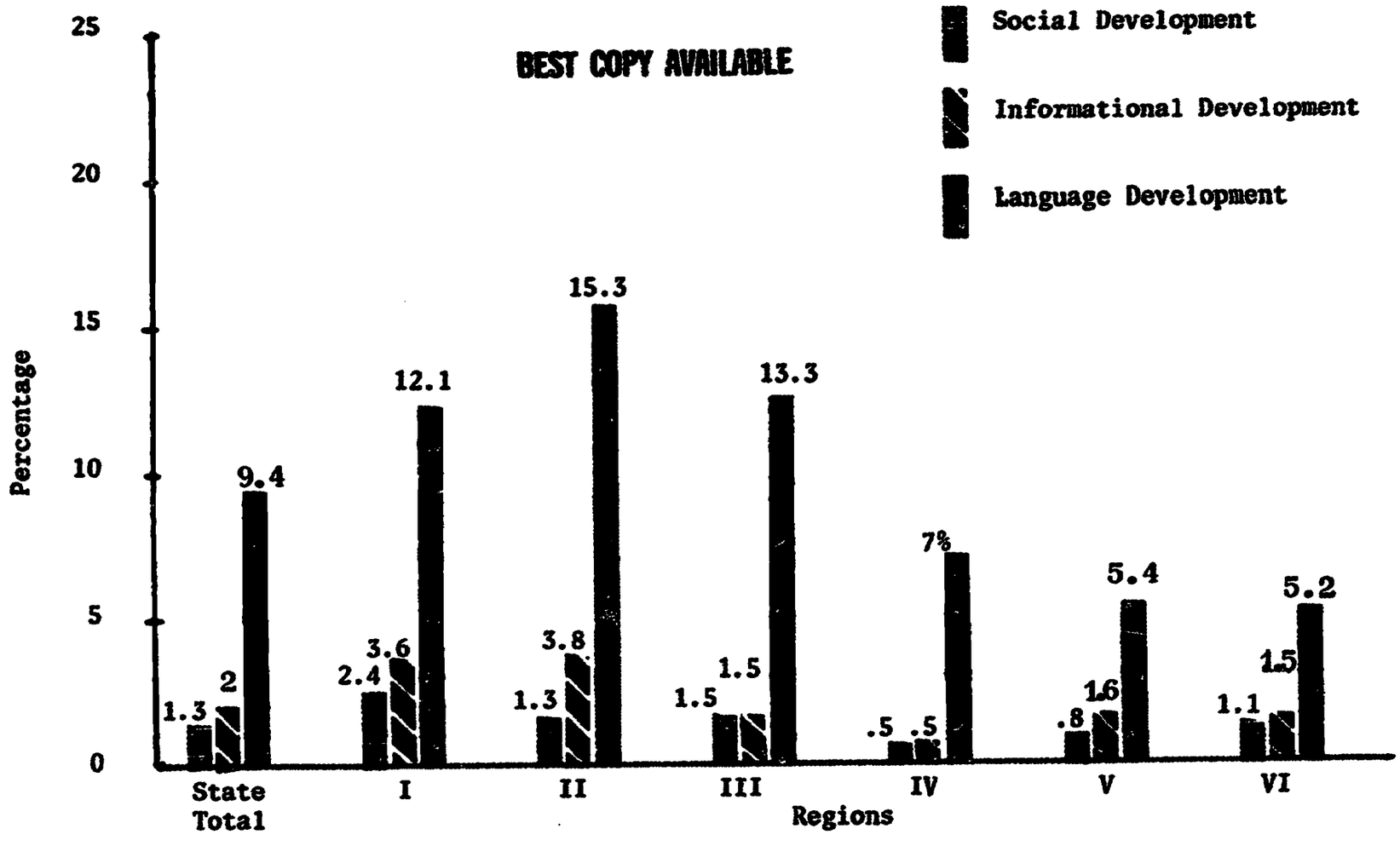

Figure XVII. Percentage of children (0-6years) having developmental lags.

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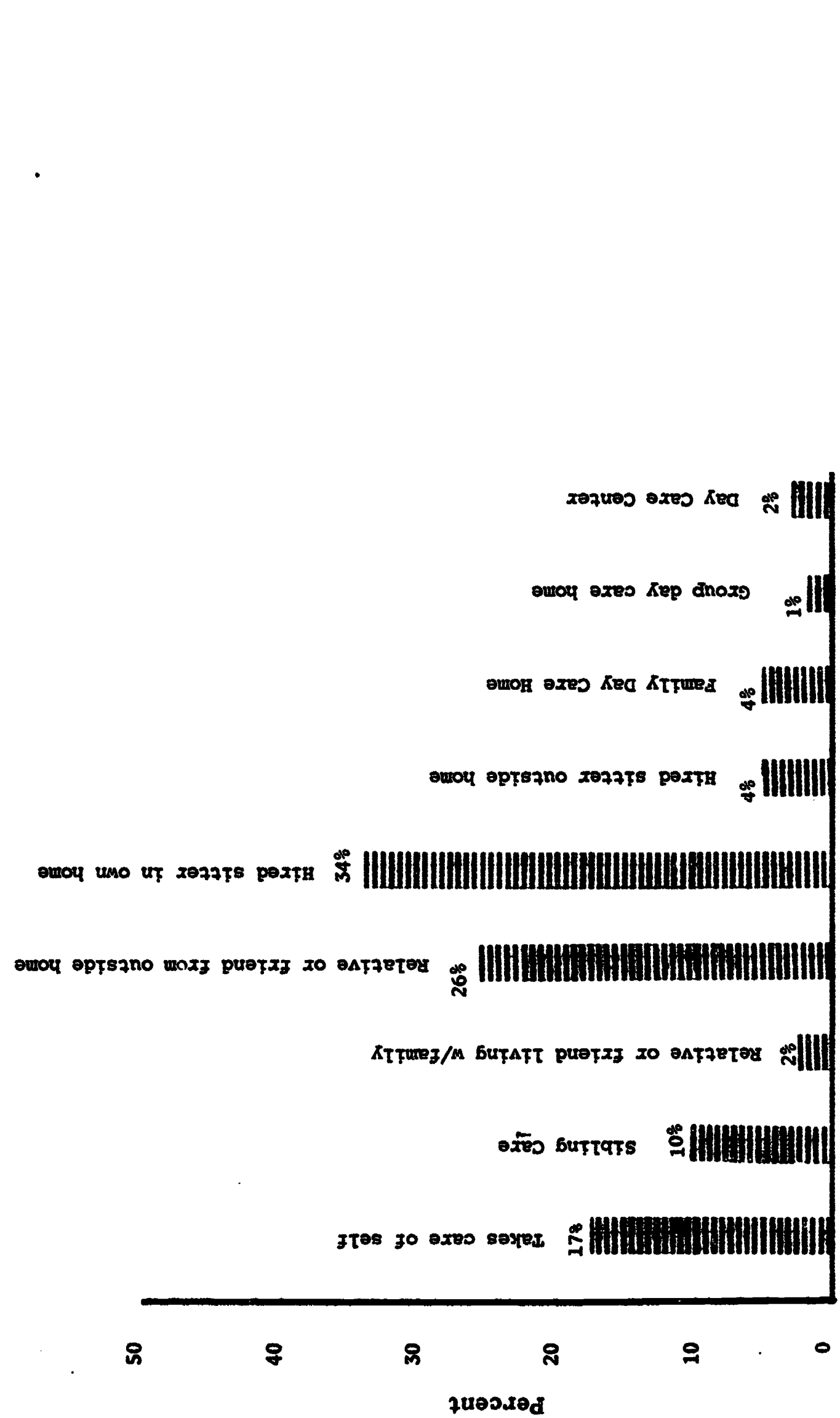

Figure XVIII. Types of Child Care Arrangements Made for Children Under the Age of 14.

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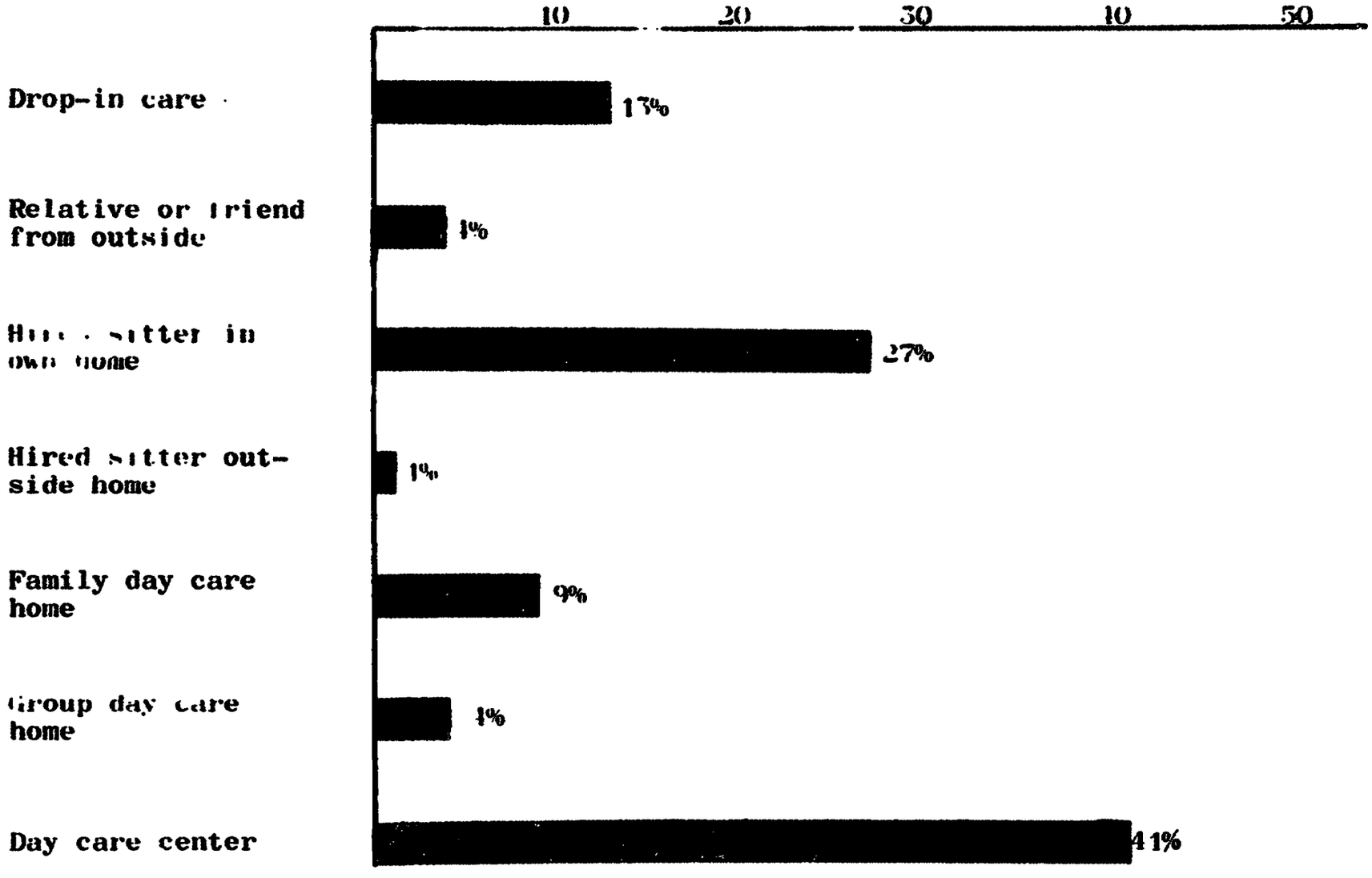

Figure XIX. Alternative Choice of Day Care for Those Dissatisfied With Present Child Care Arrangements.

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