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COMPLIANCE AMONG HYPERTENSIVE ADOLESCENTS.

THE UNIVERSITY OF ARIZONA,

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COMPLIANCE AMONG HYPERTENSIVE ADOLESCENTS

by

Jean Kamionek

A Thesis Submitted to the Faculty of the

COLLEGE OF NURSING

In Partial Fulfillment of the Requirements
for the Degree of

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In the Graduate College

THE UNIVERSITY OF ARIZONA

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STATEMENT BY AUTHOR

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DEDICATION

To my husband, Jack, for all his love, encouragement and guidance.

ACKNOWLEDGMENTS

I would like to express my appreciation to my committee members, Dr. Agnes Aamodt, Chair, Dr. Beverly McCord, and Ramona Johnson. Their knowledge, endeavor, and advice aided me vastly in the development of this study. I wish to especially thank Dr. Aamodt for her expertise and patience. Dr. McCord and Ramona Johnson gave valuable recommendations which strengthened this thesis beyond measure. Their participation made my research experience most rewarding.

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ABSTRACT

This study explored the cultural knowledge which informs the behaviors of hypertensive adolescents to comply with antihypertensive therapy. Ethnographic interviews were conducted with three adolescents, ages 15, 16, and 17 years. Data provided by the informants was organized into domains of meaning, dimensions of contrast, and cultural themes.

Four cultural themes identified from the data were "I must do something for myself," "I feel___," "I do not want to worry but___," and "I can live with hypertension." A recommendation for care of hypertensive adolescents based on the findings of this investigation is that the goals of antihypertensive therapy can be made clear to the adolescent in terms of his/her needs and goals, e.g. becoming independent. An application of this recommendation would be telling a hypertensive adolescent that complying with therapy is not dependency, but a means of conquering a problem and therefore becoming more self sufficient.

CHAPTER 1

INTRODUCTION

This paper elucidates the kinds of information that adolescents with hypertension use when complying with therapeutic regimens. Although a commonly held impression in medical literature is that adolescents will be noncompliant with medication, my experience has been that at least some adolescents with hypertension do comply with prescribed treatment regimens. If the reasons for this kind of compliance are known, measures taken to encourage these factors may enhance the success of treatment of the potentially serious problem of adolescent hypertension.

My observations of adolescent compliance with antihypertensive regimens were made while working in a pediatric hypertension clinic in southwestern Arizona. The goal of the antihypertensive treatment program in this clinic for every client was reduction of high blood pressure. The majority of clients of this clinic were adolescents. Of these adolescents, whether self-referred, doctor-referred, or school-referred, many were asymptomatic, while others complained of occasional headaches, dizziness, palpitations, and leg cramps. In no case, however, were activities of daily living hindered to the extent that it caused extreme concern on the client's part.

The clinic's treatment of hypertension consisted of diet counseling with placement on low sodium diets and decreased caloric

diets if obesity was a problem. If certain individuals met the protocol for the drug studies, medication was issued for a limited time only.

Problems with compliance arise even in the hypertensive adolescent managed by diet-controlled therapy alone. The adolescent who (along with peers) faithfully patronizes fast-food restaurants, such as McDonald's or Pizza Hut, is regularly tempted with sodium-rich menus which the hypertension clinic may be telling him to avoid. In other words, compliance often means a compromise in the average adolescent's lifestyle, and there may be both personal and peer pressure to not comply with antihypertensive therapy.

Despite these pressures, I have found these adolescents to comply by reducing the sodium high diets. What motivation causes this change in diet? Is it parental influence, the adolescent's emerging concern as a consumer of health care, preoccupation with wellness or "good" body image, or the threat of hypertension as a lifelong chronic disease? The answers to these questions may increase the probability of successfully treating a potentially serious disease.

The potential of serious effects of adolescent hypertension on adult health has been under investigation during the past decade. In the United States there has been increasing public concern and research regarding the pernicious effect of hypertension on a wide variety of physiological processes. Hypertension contributes to high incidences of coronary heart disease and cerebrovascular accidents. The prevalence of hypertension according to studies by Voor, Webber, and Berenson (1978) is recognized to be as high as 30 per cent in the older adult population. In contrast to adults, blood pressure in children is not well

correlated with consequent pathology. Consequently, the task of defining criteria for determining the prevalence of hypertension in children is difficult. This contrast becomes less important in the light of studies by Voor et al. (1978) showing that levels of blood pressure in adolescents are positively correlated with hypertension levels in adulthood; and children ranking high in blood pressure among their peers are likely to continue high ranking. Thus a serious complication of being an adolescent with hypertension is the increased probability of becoming a hypertensive adult.

Another aspect of adolescent hypertension is the magnitude of the problem - that is, the size of the population of adolescents with hypertension. The incidence of hypertension during adolescence worldwide as reported by Loggie (1977) varies from a range of 0.6 to 20.5 per cent. If the adolescent population of the United States only numbered 10 million and assuming the lowest reported incidence of hypertension in adolescents (0.6 per cent), then 0.6 per cent multiplied by 10 million would equal 60,000 hypertensive adolescents.

In recognition of the size of today's and future populations of adolescents, public attention in the past few years has been directed to the need to identify those children in the pediatric age group who are at significant long term risk for hypertension. This awareness has resulted in the organization of the Task Force on Blood Pressure Control in Children (1977) by the National Heart, Lung and Blood Institute to provide guidelines for health care providers involved in pediatric hypertension screening and treatment programs.

As the problem of adolescent hypertension is more clearly defined, it must be dealt with appropriately. For successful management, the nurse must be aware of factors that promote patient adherence and compliance. At present clinicians are unable to predict individual patient compliance with treatment regimens at no better rate than chance (Shope, 1981). Non-compliers become identified only as reasons are sought for treatment failures. Adolescents have been labelled as poor compliers in studies by Bergmen and Werner (1963), Shope (1978), and Smith (1979). This non-compliance may result in several other problems, e.g. prolongation of illness.

This study addresses the need for nursing to identify from hypertensive adolescent clients kinds of information they use when complying with treatment regimens. This in turn may uncover common themes that promote compliance in this population and increase the accuracy of future prediction regarding compliance with this age group.

Statement of the Problem

The research questions chosen for this study are:

1. How do adolescents with essential hypertension view themselves and define their disease?
2. What is the cultural knowledge of self-care activities of adolescents with hypertension that promotes compliance?

Statement of the Purpose

It is the intent of this study to describe those factors in the adolescent cognition that promote compliance with a treatment regimen for hypertension from the client's viewpoint. The information will provide a better understanding to help the health care team promote factors in the adolescent which ensure compliance. No matter what the treatment for an adolescent's hypertension is, it will be worthless if the adolescent does not cooperate. Therefore treatment for the adolescent with hypertension should include appropriate steps to help ensure compliance with the treatment regimen. These steps would be facilitated if it was understood why an adolescent might cooperate, or why not.

Conceptual Orientation

The chosen methodological approach for this study is ethnography. Because this structure is exploratory in nature, the state of the art of this investigation is initially not well developed, nor is there a great deal known about the content matter. Therefore, a conceptual orientation guided by the research questions will be utilized. The following constructs will be loosely defined and discussed: culture as a cognitive system; adolescence; self-care activities; hypertension; and compliance.

Culture as a Cognitive System

The word culture for over 100 years has been a classical term defined and re-defined, broadened and then simplified for universal usage among anthropologists from Tylor (1874) to Spradley (1979). For

clarity's sake, the term culture, based on Spradley's definition (1979:5), will be defined as "that acquired knowledge which people use to interpret experience and generate social behavior."

Culture as a cognitive system is a system of meanings that is learned, revised, maintained and defined in the context of people interacting. Life is viewed as a series of unanticipated social occasions with culture as a cognitive system serving as a guide for acting, interpreting and responding to such occasions.

Culture as associated with childhood has roots with Goodman (1970). In her view, a culture system is a context in which children learn skills necessary for adult life. Aamodt (1978), emphasizing the child's view with respect to health, healing and caring, identified complex cultural themes specific to Papago children. By tuning in on one sub-culture such as Papago children, health workers can better understand human beings and culture as it has meaning to them individually. It is with this premise that this research explores the culture of adolescents so that their health behavior will be better understood when analyzing compliance and the adolescent client.

Adolescence

Adolescence is a sum of different parts influencing each other. These parts include physical changes, cultural expectations, and changes in family relationships. The whole of adolescence cannot be understood in the context of only one of its parts; neither can it be adequately studied if a major aspect (i.e. physical development) is ignored.

According to Felice and Friedman (1982), it is both illogical and confusing to discuss adolescents as a homogenous group as the range in years may span five to ten dealing with individuals on different spectrums from junior high to college age or older. Adolescence may then be divided into three stages. Pre-adolescence includes the period preceding and shortly after the onset of puberty with the first psychological changes accompanying alterations in hormonal functioning. This is a transitional period between latency and mid-adolescence which lasts about 18 to 24 months. Mid-adolescence lasts until the mid-teens and most characteristically involves the dissolution of peer group attachments. A greater closeness on the one-to-one level is begun, but while greater personal intimacy is sought by the adolescent, adherence to norms and ideologies of a group different from that of the parents flourishes. The onset of late adolescence is difficult to place in terms of chronological years but is characterized by a more intense concern about the adolescent's personal future in terms of commitment to a vocation and a love relationship. For this study, the teenage years, ages 13 to 19, will be used to define adolescence, even though physiological development can begin as early as 8 or reach completeness as late as age 25 years.

The cognitive theory of Jean Piaget (1975) is based in part upon the assumption that human personality evolves from a composite of intellectual and affective functions. Like Erikson (1950), Piaget (1975) assumes the individual struggles to reconcile personal desires with demands imposed upon him by the environment seeking a balance between the two pulls. Cognition recognizes the quality of desire activated by the

affective side of behavior as well as recognizes the opportunities and limits furnished by the environment.

In terms of cognitive development, Piaget (1972) identified the adolescent stage as that of formal operations with reasoning based on purely verbal or logical statements. The adolescent can construct whole systems of belief, become actively engaged in the world of ideas and reflect on his or her own activity of thinking.

Childhood ends maturationally and youth begins. The youth, age 11-15 years, is aware of many new shadings in his physical environment. Objects become relative in terms of their appropriate use, while their properties assume relevance to the demands of the situation. Piaget (1972) points out that when a youth can employ deductive thinking to the extent of forming hypotheses and establishing rules and values, crystallization of personality development begins. Like the former practice of imitating others' behavior with no real intention of adopting any permanent behavior, the adolescent finds pleasure in manipulating ideas, social concepts, and ideational expressions so as to acquire moral values.

Around ages 14 and 15 years, Piaget (1972) feels that the individual finds his equilibrium, reaching his intellectual maturity in terms of thinking and reasoning because he can envisage potential operations which will compensate each other. Unlike earlier phases, he can tie together propositional operations into structured patterns of relationships and systems which eventually are structured into a single unity. However, it is possible that one former phase may not be completed in terms of degree or rate in all individuals of the same age.

Therefore, a 15 year old may have egocentric thought as well as mature intelligence.

According to Erikson's (1965) psychoanalytic theory, adolescents need to achieve a notion of competency in achieving a positive sense of identity and independence. A sense of identity as well as overcoming a sense of identity diffusion represents the polarity of this development. The youth does not question who he is but rather what and in what context can he be and become. Identity depends upon becoming a counted-upon and accountable part of a larger whole.

Unlike ages 7 to 11 years, where the child is still an incomplete person with respective psychological and social boundaries, Erikson (1965) associates the stage of adolescence with the task of acquiring a sense of identity, mastering problems of childhood as well as facing the challenge of the adult world. It is a time where the adolescent can integrate himself into adulthood with society's approval. It is a time of experimentation with patterns of identity before decisions are demanded. Parents have lost their roles as the essential supports and value givers, and have been replaced by the individual's peer group, as confirmed sources of trust.

As the child physically matures into the adult, he experiences rapid body growth with important psychological and anatomical changes. His previous trust in his body and his mastery of its functions are suddenly shaken and must be regained gradually. This creates a new self-consciousness as well as increased introspective thinking; the adolescent sees a discrepancy between what he is and what he wishes to

be. Therefore, the idea of wellness in terms of health is important to the adolescent for his forming identity. When chronic illness, either physical or psychosocial strikes the adolescent, there exists a real threat to body image. How the adolescent copes through self-care activities is then a significant issue.

Self-Care Activities

The construct of self-care based on Orem's framework (1971:51) is defined as the "practice of activities that individuals personally initiate and perform on their own behalf to maintain life, health, and well-being." According to Orem (1971), self-care is a positive action and learned behavior based on one's cultural background. Individuals may then react differently to achieve the same goal. Self-care activities are defined as activities used by informants to comply with therapeutic regimens. Orem's model (1971) considers the practice of self-care as adult oriented. This study will use an adaptation of Orem's model (1971) in terms of looking at self-care from the child's point of view with the premise that adolescents, if given responsible guidance, can constructively utilize self-care independently. The essence of the self-care movement is that of control, responsibility, freedom, and expanded options. Coincidentally, the adolescent is looking for these qualities.

Hypertension and Compliance

The final constructs hypertension and compliance will be examined in detail in the literature review. Conceptualizations here are intended to place these constructs in the context of the framework.

There is as yet no general agreement about the upper blood pressure limits of normal in children and adolescents. Hypertension will be defined as documented systolic and/or diastolic blood pressure levels on three or more occasions above the 95th percentile based on standardized charts of selected percentiles of blood pressure for children age 2 to 18 years as provided by the Task Force on Blood Pressure Control in Children (1977) by the National Heart Lung and Blood Institute. Refer to Figure 1. Compliance as it relates to hypertension will be defined as the extent to which the life style of the client is changed to correspond to the therapeutic regimen for hypertension (Ruley, 1978).

Figure 2, "Conceptual Orientation of Compliance Among Hypertensive Adolescents" represents one graphic way to visualize how the ideas of culture, self-care, hypertension, compliance and adolescence relate to each other. It includes intervening constructs to provide a context for meaning.

Culture, abnormality and care are represented as high level constructs. Because their understanding and meaning on this level is very broad, loose relationships can only be inferred as denoted with broken lines in this framework. These constructs are made more clear by their relationships with lower levels. Culture has been related to the care construct in studies by Leininger (1978) and Aamodt (1978). The care phenomenon has been examined in studies by Leininger (1978) using a transcultural perspective reporting that cultures rank care constructs according to their importance within the rest of the cultural system. The construct "abnormality" is too broad to be identified, as what is normal to one individual or group may not be normal to another.

Percentiles of Blood Pressure Measurement (right arm, seated)

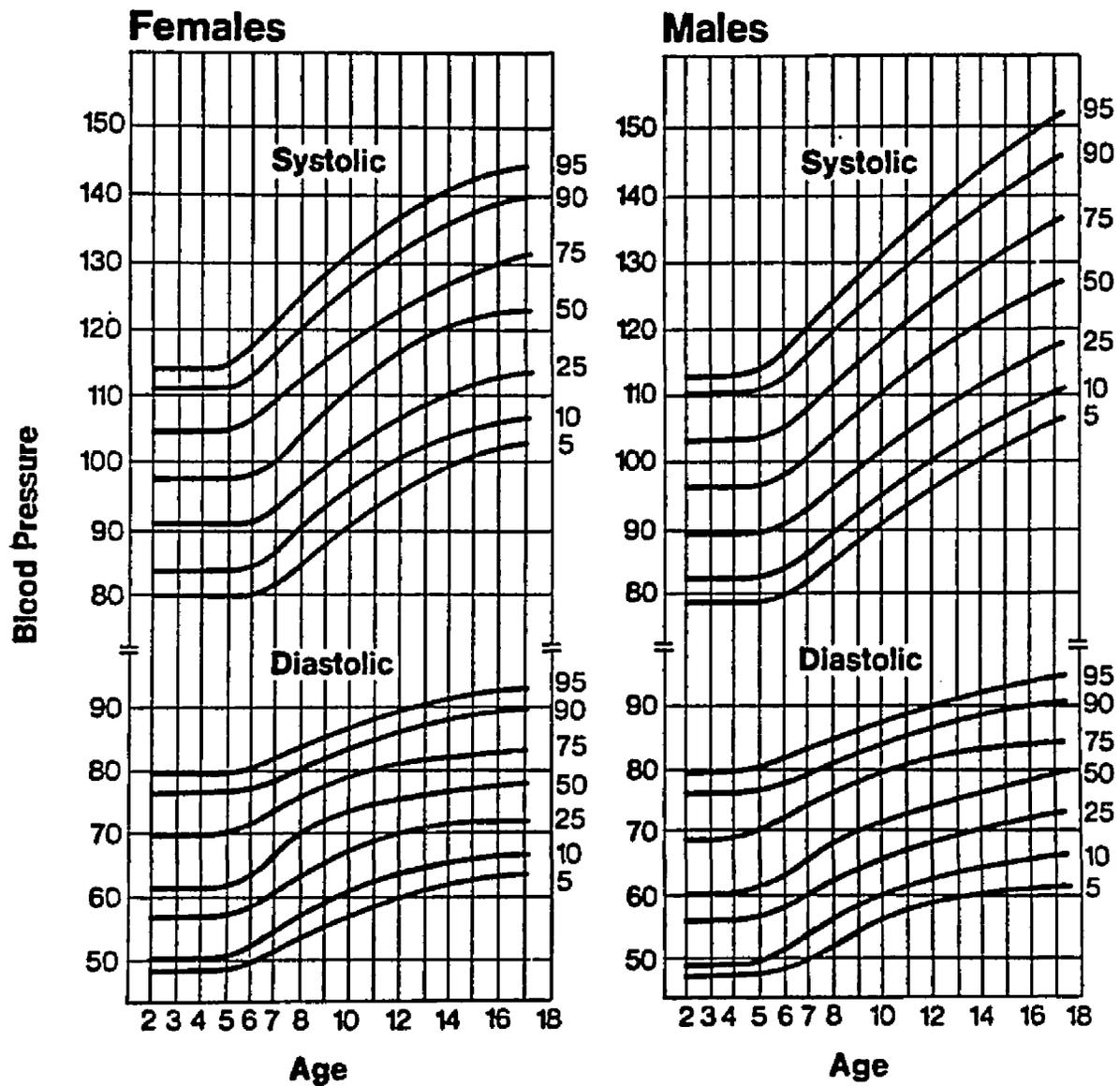


Figure 1. Percentiles of Blood Pressure Measurement
(National Heart Lung and Blood Institute, Bethesda,
Maryland, 1977)

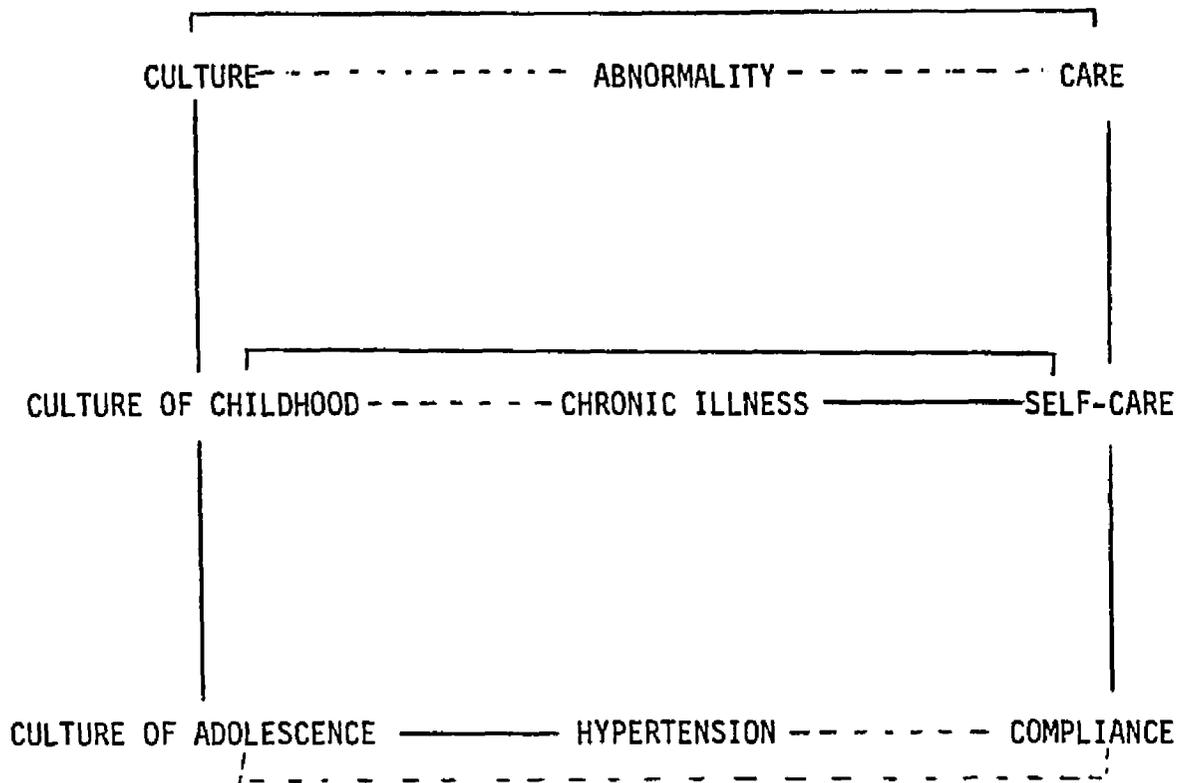


Figure 2. "Conceptual Orientation of Compliance Among Hypertensive Adolescents"

However, what is considered the norm is guided in part by culturally prescribed standards of which care is determined. Relationships are inferred between the constructs culture and abnormality, and abnormality and care.

The second level includes the constructs "Culture of Childhood," "Chronic Illness," and "Self Care." Children are a cultural group who learn skills necessary for adult life using their own distinct set of rules and principles that help govern their behavior. The culture of adolescence is unique from that of childhood due to the specific functions and tasks required in this transition period from childhood to adulthood.

Self-care identified as "taking care of oneself" in Aamodt's studies (1978) was identified as a care domain among the culture of Papago children. According to Orem (1971), self-care may be an integrated part of the routine "daily living" activities requiring minimal attention, or it may be the focus of all activity, such as when an individual has impaired health. There exists then a relationship between self-care and chronic illness when self-care is characterized by attendance to an impaired health state of which chronic illness is a definite form.

Chronic illness is an abnormal state in regards to health. Hypertension is a specific form of chronic illness. Adolescents do have hypertension. Erikson (1965) and Piaget (1975) view the adolescent period as a time of rapid change, emotionally, socially, cognitively as well as physically. Because of the high incidence of adolescent non-compliance with medication, one can postulate a probable relationship

between compliance and the aforementioned special stresses of the adolescent period. (The practical significance of this relationship is not understood.) Compliance among hypertensive adolescents also has not been specifically determined, yet one can only infer a relationship due to studies of their compliance in other health problems.

This ethnographic study will explore the relationship of these lowest level constructs, culture of adolescence, hypertension, and compliance. By using data from the adolescent's viewpoint, we hope to contribute to our understanding of the compliance experience of hypertensive adolescents.

Definitions

Adolescent - A person between the age 13-19 years.

Compliance - "The extent to which the life style of the client is changed to correspond to the therapeutic regimen" (Ruley, 1978:175).

Essential Hypertension - High blood pressure occurring without discoverable organic cause.

Cultural Knowledge - "The acquired knowledge that people use to interpret experience and generate social behavior" (Spradley, 1979:5).

Cognition - "That operation of the mind by which we become aware of objects of thought or perception including understanding and reasoning" (Dorland, 1965:322).

Self-Care Activities - Activities used by informants to comply with therapeutic regimens.

Assumptions

1. Adolescents have views of hypertension.
2. Adolescents will communicate their views of hypertension.
3. Adolescents are capable of complying with therapeutic regimens for hypertension.
4. The hypertensive adolescent is the only valid informant in the culture of adolescence of which he is a member.
5. Adolescents in a common developmental stage share a similar view of the world.

CHAPTER 2

REVIEW OF THE LITERATURE

This chapter surveys the pertinent literature concerning the conceptual orientation. Areas included will be literature related to the culture of adolescence, compliance, adolescence and hypertension, and adolescents and chronic illness.

Culture of Adolescence

Adolescence is viewed as a transitional period between childhood and adulthood with a wide range of variation in age/stage expectations cross-culturally. Because of this variability, generalizations tend to be made concerning cultural expectations of the adolescent to which any competent anthropologist can cite exception. A culture of adolescence in literature therefore is not specifically defined. The following literature review will include literature pertaining to cross cultural data followed by an emphasis on literature regarding the culture of adolescence based on American culture. The informants of this study are American adolescents whose complex United States culture in part defines qualities which characterize the American adolescent.

According to Goodman (1970) it is misleading to speak of "the adolescent," as behavior in adolescence expresses the elements of a biocultural mix. On the "bio" side, Goodman (1970) describes the characteristics as 1) physical energy at a new high for the individual,

2) psychic energy at a similar high and seeking outlets in what our society knows as "kicks," 3) a new high in awareness of the self as standing on a threshold, of approaching or having just reached the point of being tried and tested in the adult world. The extent to which specific cultures and subcultures enhance, contain, control or direct these "bio" factors is then enormously varied with only a minimal relevant pattern seen in all cultures. According to Goodman (1970), they are: 1) girls and boys are almost sure to be treated differently; 2) the beginning and the end of a period comparable to what we call adolescence will be more or less marked; 3) the very existence of such a period and the cultural expectations regarding it are variable.

In a number of cultures the child to adult progression is that of the "gradualist" pattern as identified by Norbeck, Walker, and Cohen (1962). The transition is seen as proceeding quite smoothly as the child acquires experiences. No abrupt changes are anticipated with the transition extending even into the mid-thirties. The Cheyenne Indian view as reported by Hoebel (1960) supports this concept. "Children (excluding infants) have the same qualities as adults: they lack only in experience... Children become adults as soon as they are physically able to perform adult roles." (Hoebel, 1960:99)

Mead (1935) also illustrated this concept when describing the ceremony ending an Arapesh girl's childhood. "Her puberty ceremony is no ritual admission to an order of life. It is not a marriage ceremony... Someday the two will consummate their marriage, without haste, without a due date to hurry them with its inevitableness, with no one to know or to comment..." (Mead, 1935:96,98)

In a number of cultures the last stage of childhood is likely to be an occasion for ceremony with rites usually called puberty rites performed to serve as a signal to the society of the individual's change of status and separation from childhood. Stanner (1960:95) describes the traditional practices of native Australians during initiation rites as that "to teach boys to be men; to know pain and ignore it; to feel fear and master it; to want, but to bear the necessary costs; to grasp that outside society they are nothing and inside it, the masters..."

During this century and in this far more complex American society, the conceptualization of adolescence has little resemblance to that of more primitive or past societies. It is regarded by Dorland (1965) as the period of life beginning with the appearance of secondary sex characteristics and terminating with the cessation of growth. Adolescence is neither an abrupt change from childhood nor a ritualistic explosive entrance into adulthood. The term adolescence according to Felice and Friedman (1982) refers to psychological growth and development. The psychological growth tasks of adolescence have been described by Blos (1962), Corey and Herric (1965), Erikson (1965), and Freud (1975). Adams, Brownstein, and Rennels, (1976) have summarized them as follows: to establish independence; to become comfortable with one's body; to build new and meaningful relationships; to seek economic and social stability; to develop a workable value system; and to verbalize conceptually.

According to Bloch (1981), growth and development of the adolescent is directly related to circumstances and upbringing, and therefore interdependent and interconnected with race, ethnic origin, income,

religion, education, family, environment, and place in society. Ideas, thoughts, views and attitudes arising from experience and sense perception may then be altered, modified or abandoned within the impact of these social rules.

The American society is not a classless society. The positions of the poor and the affluent have not changed meaningfully in the United States since the 19th century; nor has there been any significant advance of children above the socioeconomic status of their parents (deLone, 1979). The result according to Bloch (1981) is a caste system of adolescence, separate and unequal and with their own distinguishing features. They differ in education, health, medical and dental care, friends, environment, work opportunities and enjoyment of life, leisure, and travel. The adolescent born and raised in the cellars of society is engulfed in a socially, culturally and physically depressing milieu due to poverty, discrimination and slum living. According to deLone (1979), an adolescent from a low socioeconomic class does not value school performance. He can frequently neither read nor write, is largely unemployed and visualizes an uncertain and bleak future. Convinced that nobody cares, his tensions and frustration may lead to violence, crime and delinquency. Whereas according to Keniston (1977) the adolescent nurtured in abundance is usually assured of a functional future. He is important in the socioeconomic system for the value of commodities fashioned for his use and pleasure amounts to billions of dollars annually. He rarely faces incarceration in prison or correctional institutions.

Piaget (1975) has established that cognitive maturation attains its finalization between 12 and 15 years of age in the movement from concrete to abstract thought. According to Hofmann (1980), American society and law recognize the cognitive maturation of adolescents by permitting older minors to function as adults in such matters as driving a car and leaving school, by no longer protecting females through statutory rape laws, and by requiring that older adolescents be accountable to criminal rather than to juvenile justice. This concept also applies to medical care in the "mature minor doctrine" where the law perceives adolescents as capable in some degree of making effective decisions concerning their health needs.

According to Lewis (1975), the major goal of the contemporary middle class American family is the autonomy of its offspring. This is consistent with Eriksonian principles pertaining to adolescent development tasks. In order to become a competent, independent adult, it is psychologically imperative that young people emotionally distance themselves from parents so as to sever earlier dependency ties and resolve resurgent oedipal issues (Erikson, 1950). This process is marked by the growing importance of the peers and extraparental adults over parents as confidants.

In conclusion, the culture of adolescence is a complex subject which can be understood and defined only in terms of systems of meaning of parts rather than that of the whole. This can be facilitated by exploring particular cultures such as the American culture of adolescence confronting hypertension so that culture can be interpreted in the context of adolescents interacting with similar cultural knowledge.

Compliance

Progress has been made in elucidating the factors promoting compliance, although not all factors are completely understood. Some of the known factors are: demographic data; understanding of the seriousness of the illness by patient or parent; parental beliefs and health care attitudes; psychological factors; characteristics of the therapeutic regimen and environment; and patient satisfaction with health provider and care received.

There is no uniform operational definition for the term compliance. The definition by Ruley (1978:175) is used in this study; that is, "the extent to which the life style of a patient is changed to correspond to a therapeutic regimen." Demographic characteristics such as age, sex, or social economic status that correlate with compliance yield very few significant factors. In the pediatric literature, the mother's level of education, although not associated with compliance per se, is associated with related factors, such as knowledge of the name and dosage regimen for the prescribed medication (Becker, Drachman, and Kirscht 1972). Radius' study (1978) reported compliance with asthma medication to be better in patients having eight or more years of formal education, than in those having less. Age of the patient has been found to be important in that very young children and adolescents tend to be the poorer compliers (Bergman and Warner, 1963; Smith, 1979). Sex of the patient is not related to compliance with the possible exception of the adolescent female, who was found to be the poorer complier in studies by Gordis, Markowitz, and Lillienfeld (1969). Socioeconomic status appears unrelated to compliance with the exception of Korsch's

study (1978) in which the mean income of families of non-compliant patients (\$13,000) was lower than that of the compliant ones.

Overall noncompliance for pediatric populations is estimated at 50 per cent with a range of 20 to 80 per cent. Noncompliance in adults receiving antihypertensive therapy has been reported to range from 7 to 85 per cent (Blackwell, 1976). The compliance of hypertensive pediatric or adolescent patients has not been specifically determined since the numbers of such patients are small compared with the number of older individuals. In general, compliance is better in the pediatric population than in the adult, leading Mattar and Yaffe's study (1974) to conclude that parents feel more responsible for the health of their child than they do for their own. Gordis et al. (1969) reported a 43 per cent compliance with long-term penicillin therapy in the adolescent age group. Gordis et al. (1969) noted that compliance was greater in children who were regularly accompanied to the clinic by their parents than in those who came alone.

A most consistent predictor of compliance is the estimation by a child patient and/or a parent of the seriousness of the illness. Gordis et al, (1969) found that patients with personal experiences with the harmful effects of uncontrolled blood pressure such as that which required hospitalization or activity restriction, perceived hypertension as a more severe illness and exhibited increased compliance.

Beliefs of the parent have been found to be significantly related to compliance. Becker et al. (1972) demonstrated that a large part of the compliance process is due to the parents' perception rather than the physician's judgment of the disease and its effects.

Attitudes that parents have developed about health and health care in general are important in terms of compliance. Becker et al. (1972) found that the mother's perception of the expectations of friends and relatives may reinforce compliance. In his study, mothers who worry about being a "good" mother tended to show better compliance. Parents who are concerned about and take action on health matters are better compliers. Five of six studies showed greater compliance among patients whose families were supportive. Gordis et al. (1969) reported that in the case of rheumatic fever patients, compliance was not related to the number of family problems reported by the mother. He did find, however, that noncompliance was more common in children who came to the clinic alone. Administering medication for an acute ear infection was not found to correlate with the number of family problems. Yet in the same study, mothers who reported "having trouble getting through the day" were less likely to administer medication (Oakes, 1970). Oakes (1970) reported that the family's expectation that the patient will comply to the prescribed therapeutic regimen tends to be associated with better performance. The influence of the family on compliance may result from the supervisory role it assumes, since supervision has been found to be strongly associated with compliance (Litt and Cuskey, 1980).

The role of psychologic factors in the context of patient compliance was studied by Korsch (1974). Korsch (1974) found that adolescent noncompliance with immunosuppressive therapy following renal transplants was associated with poor self-esteem and poor socialization as well as psychosocial problems prior to onset of illness.

Litt and Cuskey (1980) explored the effects of self-image and task achievement on compliance among teenagers. In a study of adolescent compliance and contraceptive use, he found that teenagers who are responsible for making their own medical appointments, who pay their own medical bills, and who come to the physician specifically for the purpose of obtaining contraceptives were compliant. In contrast, teenagers who did not assume these tasks were not as compliant, suggesting that encouraging autonomy in seeking medical assistance may help to improve adolescent compliance.

Characteristics of the therapeutic regimen and environment have been shown to influence compliance. Compliance has been shown to be inversely related to the number of drugs prescribed, the frequency of administration and the duration of therapy in both the general pediatric population and in adults with hypertension (Bergman and Werner, 1963; Frances, Korsch, and Morris, 1969; Caldwell et al. 1970; Mattar and Yaffe, 1974). According to Litt (1980) in pediatric literature, it has been shown that compliance with medication even for acute conditions falls off dramatically after the patient has symptomatically improved. In studies by Becker et al. (1972) when the therapeutic prescription involved changes in habits such as dieting or salt restriction, there was a lower success rate of compliance than when the administration of medication was involved. This suggests that the patient who is prescribed a regimen consisting of several parts will comply with those that least affect his life style.

The patient's satisfaction with the health provider in terms of interaction and communication appears to be a major factor influencing patient compliance. Heinzelmann's study (1962) of factors in prophylaxis in treating rheumatic fever, found a negative association between having the same doctor and compliance. Heinzelmann also found compliance to be enhanced when the physician was a specialist rather than a generalist.

In studies by Becker et al. (1972), compliers more often perceived the providers as friendly and felt respected by them. When the mother had faith in the doctor's ability to make the diagnosis, Becker et al. (1972) found compliance was good, and also found the best predictor of compliance to be the mother's agreement with the statement, "I try to do exactly what the doctor tells me to do without question." Korsch (1968) found that noncompliance was the rule if the mother perceived the doctor as unfriendly or as not understanding her concern about the child's illness. Charney (1967) reported that doctors described patients' mothers who were known to be compliant as being "intelligent," but these physicians were unable to predict who would comply with treatment.

Also influencing compliance is satisfaction with care and caretakers. In Litt and Cuskey's study (1980) of adolescent patients' compliance with appointment keeping, they found that having a consistent physician and scoring high on a standardized adolescent patient satisfaction questionnaire were associated with good compliance. This study also reported better compliance with the taking of contraceptives among female adolescent patients of male physicians.

Current investigations according to Litt and Cuskey (1980) suggest that pediatricians in private practice settings obtain better compliance than pediatricians in a clinic setting. Continuity of care and the establishment of long term relationships by private practice physicians seem to be significant factors.

Features of the treatment environment have been identified as contributing to poor compliance. Haynes (1976) found a consistent negative relationship between waiting time and poor compliance. The four factors reported included the block scheduling system, physician lateness, patient lateness, and patient no shows. Prolonged waiting time and seeing different therapists at each visit were often given as reasons for not keeping appointments in studies by Becker et al. (1963). Poor compliance in terms of keeping follow-up appointments was associated with inconvenient and expensive care facilities in both general pediatric diseases (Alpert, 1964) and hypertension (Finnerty, 1973).

Various studies of means to improve compliance have been realized as the complexity of compliance factors increases. The most easily modified aspect surrounding compliance involves the treatment regimen and environment on which the following studies have focused. The past decade has brought about increased attention to consumer awareness and the reality that the patient as a consumer has the right to good health care. Therefore, acquisition of health knowledge is essential for the patient if he is not to be short changed. Sackett and Haynes (1976) utilizing this need performed a controlled study of intensive education in hypertensive Canadian steelworkers. While the group exposed to the education program showed mastery of the material by scoring higher than

80 per cent, their compliance was no different from that of the group not given the program and who scored significantly lower. However, the importance of the education of health professionals has been demonstrated by Inui, Yourtee, and Williamson (1976) who found a significant decrease in the number of patients with uncontrolled blood pressure within two months after their physicians attended an education program stressing behavioral aspects of patient care. These results strongly suggest that education must accompany motivation on both the client's and practitioner's part for compliance to occur and that education and motivation of both client and practitioner make a difference.

Improved compliance was shown when various forms of supervision were employed with hypertensive patients. Wilber and Barrow (1969) used a 2 year home visiting program in 88 randomly selected hypertensive patients from Georgia. By this method of supervision, the percentage of subjects on treatment was raised from 26 to 86 per cent, with blood pressure control increasing from 15 to 80 per cent. In terms of adolescents, it is questionable whether increased supervision, especially if from a parent figure, will achieve the desired result. Self supervision or peer supervision may be an alternative if authority figure intervention interferes in the adolescents' struggle for independence.

Finnerty (1973) and Fletcher, Pappius, and Harper (1975) demonstrated that patient follow-up programs using either telephone or home visits decreased the number of missed appointments for hypertensive adults. Yet improved attendance produced by these methods did not always result in better blood pressure control.

Behavior modification techniques such as the use of reward systems have been explored by Heinzelmann (1962) in order to improve compliance. In his study of adult hypertensive patients, the awarding of a credit toward the purchase of the patient's own sphygmomanometer for each lowered blood pressure reading resulted in improved compliance. Levine (1974) investigating token rewards concluded that they may lead to only token learning and desired behavior by the rewardee only when the reward giver is present. Other studies such as the one by Caplan, Robinson, and French (1976) encourage the use of intrinsic internalized rewards such as feelings of self satisfaction, self esteem and self competence for long term adherence. For adolescents this may be a plausible alternative if peer pressure does not get in the way.

Compliance then is a complex issue and incompletely understood. Studies show many conflicting reports and recommendations. In the final analysis it is the patient's understanding of his problem and reaction to that problem that most profoundly affect compliance.

Adolescence and Hypertension

This section reviews the literature concerning adolescence and hypertension. Under this general heading, literature will be discussed pertaining to more specific subjects including: variability of blood pressure during adolescence; blood pressure tracking in children; adolescent hypertensive populations; causes of hypertension; pathophysiology of the development of hypertension and its physical consequences; and hypertension management.

Since adolescence is a transition from childhood to adulthood, there is a wide variability among adolescents of both systolic and diastolic blood pressures as seen in Figure 3. This reflects the transition from the blood pressures seen in childhood to the blood pressures seen in adulthood. Blood pressure measurements fluctuate to higher levels in the adolescent population from year to year than in the adult age group where a more mature cardiovascular system does not have to adjust to rapid growth and developmental changes. Because of the instability of blood pressure within the individual adolescent age group, the diagnosis of hypertension in adolescence is like determining who is the tallest among a group of 500 people performing deep knee bends out of synchrony with each other, as compared to determining who is the tallest in a group simply standing still.

A number of studies have been conducted to identify blood pressure patterning in children. Jesse, Hohanson, and Klein (1976) measured blood pressure at two points, one year apart, with tracking of systolic pressure at all ages (2-17 years). This was particularly well correlated in adolescence. Clarke, Woolson, and Schrott (1976) repeated the data for three surveys and observed a lower correlation for systolic blood pressure tracking, which was smallest in adolescence. Bringgold, Labarthe, and Weidman (1976) observed low correlations in one to three year intervals of measuring pressures in 10 to 12 year olds and concluded that variability rather than stability was characteristic of this group. Kilcoyne (1978), in data accumulated by several blood pressure measurements, had similar findings which underscored instability of blood pressure during the adolescent years, and suggested that

Normal BP Ranges

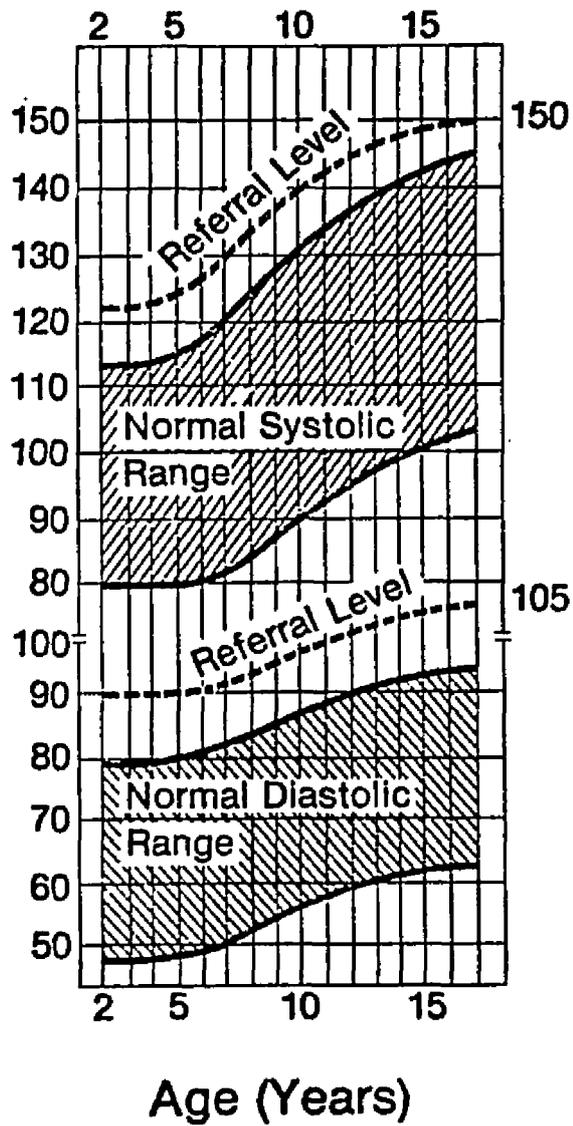


Figure 3. Normal Blood Pressure Ranges
(National Heart Lung and Blood Institute, Bethesda,
Maryland, 1977)

clinicians do serial observations in this age group before the diagnosis of hypertension is made. In Heyden's 1969 Georgia Epidemiologic Study, a 7-year follow-up of 15-24 year olds with the diagnosis of hypertension based on one blood pressure measurement, the results showed that 18 of 30 persons remained hypertensive, 4 had overt target organ damage, and 2 others had died of cerebral hemorrhage in this span. Sixteen-year follow-ups as reported by Sneiderman (1976) resulted in 20 per cent of the sample remaining hypertensive.

According to Londe (1978) there are two kinds of patient population among hypertensive youths. In one group the patients are usually symptomatic and severely hypertensive with blood pressures well above 150/100 mm Hg regardless of age. The other group is composed of patients with incidental hypertension, usually of mild degree. The symptoms and findings are all the result of hypertension. They include headache, dizziness, nausea, vomiting, disturbed vision, irritability, hyperactivity, facial nerve palsy, convulsions, changes in the state of consciousness, personality change, anxiety, tachycardia, episodes of sweating, dyspnea, polyuria, polydipsia, weakness, and weight loss.

Certain symptoms may be due to effects of longstanding hypertension on target organs (e.g. congestive heart failure, impaired renal function, and stroke). Other symptoms are related to specific causes. Palpitations and sweating are characteristic of pheochromocytoma while obesity, weakness, and ecchymoses are associated with Cushing's syndrome. According to Londe (1978), most of the underlying diseases are rare, whereas a relatively small number of conditions are responsible for the hypertension in over 90 per cent of patients. In 563 young

patients with secondary hypertension reported in the pediatric literature, Londe (1978) found that 78% had a renal abnormality, with renal artery disease observed in 12%; 2% had coarctation of the aorta; and 0.5% had a pheochromocytoma. Of the 132 patients observed by Londe (1978) to have incidental hypertension, a cause (renal disease) was found in only 5%. Therefore, 95% probably had essential or primary hypertension. The fact that 51% had a parental history of hypertension while 55% were obese, loaned support to the diagnosis of primary hypertension, which would have required verification by follow-up in an adult clinic. Loggie (1975), working in an adolescent hypertension clinic, also supported the hypothesis that primary hypertension is not rare in the young. Her study reported that the percentage of hypertensive children with primary hypertension in her practice had increased from 20% in 1969 to 55% in 1975, attributing this fact to increased blood pressure measurements by practitioners in their juvenile patients.

The exact cause of primary hypertension has not yet been firmly established. Heredity, obesity, and excess salt intake are important factors. Guyton, Cowley, and Coleman (1974) postulate that the hemodynamic changes of hypertension are responses to a renal defect (probably tubular) causing retention of salt and water, and that the elevated arterial pressure becomes necessary to restore the normal balance between body fluid volume and urinary output.

Both neural and hormonal factors act on the cardiovascular system to produce at least some of the hemodynamic changes seen during the development of hypertension. It is far easier to measure pressure in an artery than it is to measure the adequacy of blood flow through

that artery. Modulation of blood flow out of the left ventricle occur by central neural control of the circulation and by peripheral neural and humoral effects on vascular reactivity. Central neural control of the circulation has been described on two levels by Korner (1971). Level one is the simple reflex which happens at the bulbar level (cardio-respiratory centers). Blood flow from the left ventricle is registered during every cardiac cycle by the aortic and carotid arterial baroreceptors. When flow and resultant pressure is inadequate, a reduction in baroreceptor stimulation takes place and the 9th and 10th (vagus) cranial nerves transmit this information to the cardiorespiratory centers where the set point for the system resides. The reduced vagal traffic signals that pressure in the cardiovascular system is lower than the established level and results in a decrease in the usual vagal restraint on the autonomic outflow. The cardiac sympathetic nerves stimulate an increase in heart rate to restore cardiac output. Subsequently peripheral neural effects on the vasculature increase the volume of blood returning to the heart by selective vasoconstriction.

At the suprabulbar level, information concerning the adequacy of blood flow enters from all systems. Integration of this information may lead to a change in the arterial pressure set point itself. When this happens, the sequence at the baroreceptor and bulbar level is turned to a higher or lower arterial pressure than previously set in accordance with total body demands.

Hemodynamic studies in adolescence show a variable pattern. Fouad, Tarazi, and Dustan (1976) compared 13 adolescents (15 to 19 years old) with 29 young adults (20-25 years old) and found no significant

difference between them in cardiac output, peripheral resistance, or plasma volume. Kilcoyne's studies (1978) suggested that high cardiac output predominates in the developing phase of hypertension in adolescents. The combined genetic and environmental forces that may be active in bringing about these changes in any individual or in those belonging to subsets of hypertensive pathophysiologies are unknown. In the adult population the members most vulnerable to the development and consequences of primary hypertension are black males. The emergence of hypertension during adolescence in this group was found to be dramatic in Kilcoyne's studies. In practice, all race-sex groups are found; the relative prevalence in large populations is still not clear.

Management of hypertension includes drug therapy, and sodium and caloric restrictions. Antihypertensive drugs can cause unpleasant side effects, which frequently lead patients to stop using the medication. Also patients must take the drugs for the rest of their lives, which raises questions about possible long term effects as well as decreased chances of compliance if the disease is silent as is hypertension. The mode of treatment prescribed for hypertensive adolescents involves less restrictive regimens if the patient has moderate or mild hypertension. Moderate sodium restriction (about 2000 mg/day) rather than drugs is the initial treatment for mild hypertension used by many doctors. Salt or sodium chloride is about 40% sodium, the main source of sodium in the American diet. Other sources of sodium include the normally occurring sodium content of foods as well as that of food additives, such as monosodium glutamate (MSG), sodium phosphate, or sodium nitrite.

Observations by Thomas , Ledingham, and Berlin (1978) in a study of workers at the Atomic Energy Research Establishment in Harwell, England concluded with some certainty that in western societies excessive salt intake is not the cause of essential hypertension. However, according to Pickering (1980), extreme restriction of salt intake will lower arterial pressure, while excessive salt intake will raise it.

The first successful salt restrictive regimen was Kempner's rice and fruit diet. Kempner (1978) showed that this diet, which contained a daily intake of 200 mg of chloride and 150 mg of sodium, would reduce arterial pressure, heart size, and retinopathy in patients with severe hypertension. Most people including those with mild or severe hypertension show a fall of pressure when salt is restricted to 10 meq (0.58 gm) per day. This intake is distasteful, producing a loss of appetite and weakness, and therefore is not naturally selected by those living in western societies. According to Pickering (1980), within the range ingested by most Westerners, there is no evidence that the amount of salt influences arterial pressure.

However, it is not the point of this thesis to determine whether or not mild or extreme sodium restriction does lower hypertension. Rather, as a modern treatment of hypertension, how this affects the adolescents who are placed on this diet is the more important issue. The fact that one Big Mac contains 1500 mg of sodium (3/4 of the sodium allowed on a low sodium diet per day) is not well known. Adolescents are generally reluctant to admit to any handicap, especially in the face

of peer pressure to conform. Adherence to a low sodium diet conflicts with peer pressure, fad dieting, and cultural dietary norms.

Finally, cardiovascular diseases are the most common causes of morbidity and mortality in the United States. The vast majority of the cardiovascular diseases that cause this high morbidity and mortality are heart attacks and stroke. Hypertension is the most common cause of stroke and is a major risk factor for heart attacks. According to Blumenthal (1978), the vast majority of adults with hypertension in the United States are not receiving satisfactory treatment as indicated by surveys conducted in 1962 and again in 1971. These surveys reveal that the majority of adults with hypertension are not even aware of having the disease. Studies by Blackwell (1976) reveal noncompliance rates of approximately 50 per cent among this group. What implications this has for adolescents with hypertension is not yet understood as statistics are unavailable. One does wonder how compliant these adolescents will be if they too are asymptomatic and unaware. The status of hypertension during adolescence is still unclear. As the literature increases on this subject, however, the magnitude of the problem seems to be growing.

Adolescents and Chronic Illness

This section reviews the literature concerning adolescents and chronic illness. Specific areas to be addressed include: the definition of chronic illness; frequency of chronic illness in adolescents; stress factors relating to chronic illness which adolescents may experience; and behavioral problems which may be caused by these stress factors in chronically ill adolescents.

Most people find it difficult to cope with illness. Chronic illness is an even greater burden due to its long term effects on an individual whether it is physical, social, emotional, or financial. For the adolescent, chronic ill health can be a handicap, since the tasks of maturation associated with adolescence, such as integration of identity and independence within self, are made more difficult by chronic illness. According to findings by Pless, Klaus, and Roghmann (1971) findings, one in 15 children will experience one or more chronic illnesses by age fifteen years. Mattsson (1972) defines long term or chronic illness as an illness with a protracted course which may be progressive and fatal, or associated with a relatively normal lifespan despite altered mental or physical functioning. The disease frequently shows periods of exacerbation requiring intense medical attention. According to Mattsson (1972), the most common physical conditions are asthma (about 2% of the population under age 18), epilepsy (1%), cardiac conditions (0.5%), cerebral palsy (0.5%), orthopedic illness (0.5%), and diabetes mellitus (0.1%). Less frequent than those conditions already listed are: cleft palate; bleeding disorders; anemias; blindness; and deafness.

Stress factors relating to causation, symptomatology and medical care of long term illness pose special problems and fears to the child and his significant others. The diabetic child, along with his family may worry about attacks of hypoglycemia or acidosis as a result of highly emotionally charged family interaction. Some adolescents in rebellious, hostile, or depressed states consciously abandon their

diabetic regimen as angry and self destructive means to threaten or retaliate. Similarly, the child with a convulsive disorder frequently fears loss of consciousness from seizures which can be socially stigmatizing when they take place at school or among peers. The epileptic teenager feels uniquely frustrated as he cannot obtain a driver's license until after several years without seizures, thus prolonging dependency on parents for transportation.

Children with serious respiratory disease such as asthma may harbor fears of suffocation or dying while asleep, as reported in studies by Dubo et al. (1961). The asthmatic child often finds that his wheezing will evoke anxious, indulgent, and sympathetic responses from his family who may feel responsible for contributing to his attacks. The child with cystic fibrosis has to cope with symptoms of flatulence and stool odor, as well as complex management of postural drainage and nebulization, along with the awareness that his illness is hereditary and progressive, carrying a poor prognosis.

Children with chronic heart disease and/or hypertension often have minimal signs of the seriousness of the condition. Hypertension is usually a silent disease. If it is not detected and treated, symptoms generally appear about 15 or 20 years after onset. This makes it difficult for the child to comprehend the nature of the illness as well as the reasons for extensive work-ups, diet restrictions, medication control, or the possibility of surgery.

Adolescence normally characterized by rapid and variable somatic growth is a time of anxiety and frustration. Feelings of clumsiness may result due to body-size disorientation. Anxiety results if body image

is "just not right" or appears different from peers. If there is inability to dress appropriately, confinement to a wheelchair or bed, or the necessity to use artificial prostheses or appliances, there is separation of the chronically ill adolescent from his peers. If interpersonal relationships are hampered due to inability to participate in school or social activities, self sufficiency and self image may be hurt. According to Wolfish and McLean (1974), up to 30% of these chronically ill children or teenagers may exhibit behavioral or psychological maladjustment. From the Pless et al. (1971) analysis of the Isle of Wight study (a survey of educational, emotional and physical disabilities in the total population of 9 to 11 year old children on the Isle of Wight, England) it was shown that the rate of psychiatric illness among the chronically ill children was 17% compared with only 7% in the healthy population, despite there being the same proportion of chronically ill children with neurotic and antisocial behavior patterns as in the general population.

Utilizing the National Survey of Health and Development (a representative sample of 5000 children born in England, Wales, and Scotland during the first week of March 1946), Pless et al. (1971) studied psychosocial problems experienced by those children who had a chronic physical illness before age 15 compared with the prevalence and nature of similar problems in healthy children. His study concluded that the frequency of emotional symptoms is consistently related to the duration of the disorder. Maladjustment was seen to be more frequent among children with permanent disorders than in those with temporary disorders. The severity of the primary disorder, assessed in terms of

interference with ordinary daily activities, also appeared to have a small but direct impact on the frequency of behavioral symptoms at age 15 years compared to only 17% in the health population.

According to Mattsson (1972), children and adolescents with prolonged poor adjustment to their chronic disease tend to show one of the following three behavioral patterns: 1) Those characterized by fearfulness and inactivity, lack of outside interests and marked dependency on their families, especially their mothers. These youngsters present the psychiatric picture of early passive dependent states, and their mothers are usually described as constantly worried and overprotective of them. 2) Those characterized by overly independent, often daring behavior, directed toward prohibited and risk taking activities. Such youngsters make strong use of denial of realistic dangers and fears. At times their reality sense is impaired, and they seem to seek out situations for the challenge of the risk of trauma. Since early childhood, many of these patients have been coddled by overly solicitous and guilt ridden mothers; usually at puberty, the children metamorphose into overactive, defiant adolescents, rebelling against maternal interference. 3) Those characterized by shyness and loneliness. A least common pattern of maladjustment according to Mattsson (1972) is seen in older children and adolescents with congenital deformities harboring resentful and hostile attitudes toward normal persons whom they see as owing them payment for their lifelong sufferings. These illustrations represent prolonged maladaptation to chronic illness. Many adolescents with chronic illness develop these characteristics on a temporary basis only. In these individuals, the disease(s) and management serve as a

bridge of conflict between the adolescent and parents, siblings, friends, or the school environment.

Summary

This chapter has reviewed literature supportive of the conceptual orientation and research question. The problem of the adolescent's view of patient compliance seems to be grossly underestimated in the literature. Studies are needed to delineate ideas to be incorporated into treatment programs that will promote patient compliance. However, facilitating the individual client's insight into self and situation seems to be the essence of the matter.

Adolescent hypertension is also a subject which needs further clarification. Adolescents, by their rapid maturation, are confronted with stresses during this period of development. Coping with normal adolescence itself is quite demanding; when one has to cope with chronic illness as well, there exists a heavier burden.

In conclusion, with a largely undetected adult population of hypertensives it is likely that there is a significant number of adolescents with hypertension who are undetected as well. Furthermore, these adolescents may be less likely to comply with treatment because of the stresses already present at that age group. It is therefore imperative to learn the cultural knowledge of adolescents with documented hypertension and their insights about compliance.

CHAPTER 3

DESIGN AND METHODOLOGY

Research design, ethnographic interview in research, sample, procedure for data collection and data analysis form the methodological approach described in this chapter.

Research Design

This exploratory study addresses the questions: How do adolescents with essential hypertension view themselves and define their disease? What is the cultural knowledge of self care activities of adolescents with hypertension that promotes compliance? The design includes the development of domains of meaning, dimensions of contrast, and cultural themes using the method of the ethnographic interview. Subjects of the study were adolescents with a documented history of essential hypertension who have been involved in a therapeutic regimen specific to that diagnosis during their teen years. Data was collected and analyzed according to Spradley's protocol (1979).

Ethnographic Interview in Research

"The essential core of ethnography is the concern with the meaning of actions and events to the people that we seek to understand." (Spradley 1979:5) These meanings may be directly or indirectly

expressed in language or action, which when organized into systems constitute a specific culture. Ethnography implies a theory of culture. In the ethnographic interview, the informant is foremost a native speaker and source of information for the ethnographer. The ethnographic interview is seen as a speech event into which the researcher slowly introduces new elements to assist informants to respond as informants. The ethnographic explanations consist of project, recording, native language, interview and question explanations. Project explanations include general to specific statements about what the project is all about, i.e. "I am interested in learning how adolescents with hypertension take care of themselves." Recording explanations include all statements about writing things down and reasons for tape recording the interview, i.e. "I would like to tape record the interview so I can go over it later. Would that be O.K.?" In the native language explanations, the ethnographer seeks to encourage informants to speak in the same way they would talk to others in their cultural scene, i.e. "If someone asked you what was it like to have hypertension, what would you say?" Interview explanations are used if different tasks or questions are required or asked of the informant, allowing the informant to know what is expected.

Sample

Informants for the research were three adolescents, ages 15-17 years. They were selected according to the following criteria: English speaking; having had a documented history of essential hypertension above the 95th percentile based on standardized charts of selected

percentiles of blood pressure provided by The Task Force on Blood Pressure Control in Children (1977) by The National Heart Lung and Blood Institute; having been involved in a prescribed therapeutic regimen specific to hypertension for at least a six month period; willing to be interviewed and able to express their experiences.

Informants were selected patients from physicians of a United States Air Force Hospital pediatric clinic. They were initially contacted by the following methods: 1) Physicians informed patients who met criteria of this research project and furnished them with the name and telephone number of the researcher so they (the prospective informant) then contacted me without using further Air Force Hospital facilities. 2) A notice, placed by the researcher that included project description, sample needed, and this researcher's name and phone number, was posted in the pediatric clinic at the Air Force Base to recruit volunteer informants.

The requirements for participation were 3 to 4 interviews of 45 minutes each. All interviews were taped with the informant's permission. The interview setting was a place chosen by the informant outside of Air Force Hospital facilities. Two of the informants chose their own homes while the third chose to be interviewed in the researcher's home.

Procedure for Data Collection and Analysis

Spradley's (1979) protocol for ethnographic interviewing for data collection and systematic method for analysis was followed. During the interviews, 3 categories of questions were used: tour (descriptive),

structural, and contrast. The questions were designed to elicit increasingly detailed information. The first interview was directed to learning the informant's culture, obtaining a language sample and developing rapport. All informants were asked the same tour questions at the first interview. Tour questions allow the researcher to develop further data in the language of the informant. They included the following questions:

Examples of Tour Questions

Tell me about being _____ years of age.
What happens during a typical day in your life?
What do you do during the day to keep healthy?,
the evening?, the night?
Tell me what you would say if someone asks you
about hypertension.
Tell me about a time that you took care of yourself
for hypertension.

After the interview, the tape recordings were transcribed and language samples analyzed. Domains (basic units in the informant's cultural knowledge) were organized from this information. These domains formed the framework for the structural questions which were drafted for the next interview. The purpose of the structural question was to exhaust elements within a domain and to verify previous responses. The use of structural questions allows the researcher to find out how informants have organized their knowledge.

Examples of Structural Questions

Are there other things you do to try and stay healthy?
What are the ways that you tell when your blood pressure
is up?
What kinds of food do you eat on the Cambridge diet?

Contrast questions were interspersed with structural questions. They were asked to discern the unique meaning a term held for the informant by discovering differences between and among domains of meaning. These questions are based on the principle that "the meaning of a symbol can be discovered by finding out how it is different from other symbols." (Spradley, 1979:157)

Examples of Contrast Questions

What is the difference between running and lifting?
How did the Cambridge diet differ from taking
medication?

During the third and fourth interviews the domains were shown to the adolescents on index cards. This allowed the adolescents to verify elements in a domain, differentiate elements within the domain, and add new elements to the domain.

The concurrent analysis of the data retrieved through the ethnographic interview included establishing domains of meaning and dimensions of contrast. The goal of a domain analysis includes identification of native categories of thought as well as gaining a preliminary overview of the cultural scene studied in search of units of cultural knowledge. The analysis allows the ethnographer to learn how

the informant organizes what he knows. The analysis centers on identifying basic semantic relationships between elements of cultural knowledge. If possible, individual items are grouped under cover terms as subdomains. Figure 4 represents a sample domain of meaning.

Ways to keep busy	Do what needs to be done	Do school homework
		Work for my folks
		Keep the house
	Do what hasn't been done in a long time	Clean out drawers
		Do baseboards
		Do the windows
		Play the organ
	Do what is fun	Play baseball
		Play basketball
		Joke with friends
Listen to the stereo		
Go to parties		

Figure 4. Example of a Domain of Meaning "Ways to Keep Busy"

Differences in meaning are sought during the interview through the use of contrast questions. The paradigm is one method to visually represent the definition of contrast within a set. Figure 5 represents a sample paradigm.

	Patient Cost	Lose Weight	Decreases Blood Pressure	Doctor Prescribed	Side Effects
Cambridge Diet	High	Yes	Yes	No	No
Hypertensive Medication	Low	No	Yes	Yes	Yes

Figure 5. Example of Dimensions of Contrast "Cambridge Diet/
Hypertensive Medication"

The final type of analysis, theme analysis, consists of finding larger units of thought recurrent in a number of domains and tying them

together into relationships among subsystems of cultural meaning. Theme analysis was originally defined by Opler (1945:198) as a "postulate or position, declared or implied, and usually controlling behavior or stimulating activity which is tacitly approved or openly promoted in a society."

Data will be reported in Chapter 4 in the form of domains of analysis, dimensions of contrast, and cultural themes developed from the structure and meaning of ethnographic statements made by the subjects. The result is an ethnographic analysis as the parts of a culture, the relationship among the parts, and their relations to the whole become evident. (Spradley, 1979:142).

Reliability and Validity

The informant is considered the expert on his culture. Validity is confirmed when the informants re-enforce each other's responses. Validity can be further enhanced if the informants fulfill the following criteria: 1) thorough enculturation; 2) current involvement in the culture; 3) member of the cultural scene unfamiliar to the investigator; 4) adequate time; and 5) characteristics of a nonanalytic informant (Spradley 1979). Reliability will be enhanced by one researcher performing the interviews and analysis. This will minimize diverse interpretations of data.

Human Subjects Considerations

This study complies with regulations established by the College of Nursing and the Human Subjects Committee of the Arizona Health Sciences Center.

The purpose of the study and the reasons for the adolescents' selection were explained to the adolescents. They were told what measures would be used to protect the confidentiality of the information. The adolescents were repeatedly told in a variety of ways that they could withdraw from the study or stop the interview at any point. Verbal permission was obtained from the adolescents after exploration of the disclaimer (Appendix A). The disclaimer was required because of the exempt status assigned to the study by the Human Subjects Committee (Appendix B).

CHAPTER 4

PRESENTATION AND ANALYSIS OF DATA

The data collected and analyzed in this project will be presented in the following sections: researcher-informant experience, informants, domains of meaning, dimensions of contrast, and analysis of cultural themes.

Researcher-Informant Experience

Efforts to maintain rapport with the informants while meeting research criteria resulted in the recognition of the following themes: not encouraging verbal spontaneity in the non-talker informant; potential loss of an informant's enthusiasm to cooperate; and the temptation to label.

The theme "not encouraging verbal spontaneity in the non-talker informant" became apparent during the interviews with the final informant, Daniel. Previous to Daniel, I had interviewed 17 and 16 year old adolescents who were articulate in their language skills and very open in communicating their expressions and thoughts, thus making my early attempts at ethnographic interviewing successful in terms of informant-researcher experience.

Daniel was 15 years old and met the same requirements as the two previous informants so that I did not enter his first interview with any apprehension, but rather looked forward to it because of the two previous successes. However, at the initial interview the four questions

were answered in a minimum amount of time and wording, leaving me somewhat frustrated, not knowing how to keep words flowing or in what direction. With the two previous informants many native terms were elicited from the four questions. This allowed for further questions regarding this new native thought. However, in Daniel's case, his sentence structures were short, to the point, and not very informative. Many questions were left unanswered. This I believe did not result from apprehension or unwillingness on Daniel's part to be interviewed. Ironically, unlike the other two informants, Daniel walked several miles from his home to the interviews, expending physically more energy and effort to be interviewed.

I now feel in retrospect that for Daniel the amount of information obtained was the total amount he could share even though his enculturation was similar to the other two informants. Daniel was simply a less introspective and less verbal informant. For this particular informant all that I could do was take cues from him when he had nothing further to tell me. Cues were given in the form of "no", "like I said before...", and pauses. If I tried to press these roadblocks with further questioning, it seemed to frustrate rather than encourage further verbalization on Daniel's part.

What information Daniel had to give me, he gave me. For him it took two interviews rather than three or four. An ethnographer has to take into account the fact that all informants are different, regardless of similarity of cultural scene. In other words, one must accept what little the non-talker informant has to offer instead of being too greedy for more. From my experience there is no credible way to encourage

verbal spontaneity in the non-talker informant.

The theme "potential loss of an informant's enthusiasm to cooperate" was relevant when, due to technical difficulties, the tape of a first interview session was completely ruined. Memory salvaged only bits and pieces of the informant's language. In the second interview I had to retrieve valuable information lost from the first session as well as keep the informant eager to continue. (Repetition of tour questions can discourage an informant). To accomplish these two tasks I stressed to the informant the need for repetition of certain words and questions so that I would be sure to learn from him. I stressed the word "learn" so that it made the informant feel more like the teacher he was in this interview. Also, by rephrasing certain questions in the second interview, it seemed less repetitive and more interesting for the informant.

Example of first interview question:

Tell me about being 15 years old.

Example of similar second interview question:

Now you had told me that you were 15. If you had a little brother and he asked you about being 15 years old, what would you tell him?

I found this approach successful as it enabled me to fill in some of the missing information and more, as well as provide a slight change from the first interview so as not to frustrate the interview process.

The theme "temptation to label" existed throughout the interview sessions. This was brought to my attention by one of the informants when I asked her to give me a sentence using the word "hypertension." She then answered, "I call it high blood pressure." From then on, I

used the phrase "high blood pressure" with her. She could obviously relate to it rather than the word "hypertension." By rephrasing, I was able to elicit more information from this informant using her folk terminology rather than my own.

The quality of the conversations also proved to be significant. There was a great deal of philosophizing and abstract thought present in the interviews by the informants. Because of this, there was a tendency for me to want to direct their conversations back to my research questions, as well as supply them with words that I thought labelled what they were describing.

Informants

The informants were two males and one female (ages 15 years, 16 years, and 17 years) whose systolic and/or diastolic blood pressures were above the 95th percentile for age and sex. They readily acknowledged having high blood pressure. The profile of each informant includes demographic data, a synopsis of their therapeutic regimens and their comments about being a hypertensive adolescent.

Lisa

Lisa is 17 years old and a junior in high school. She is the only child of an Air Force retiree and lives at home with her stepfather and mother. She has lived in Tucson for 1 year after living in California for 16 years. Lisa was first diagnosed as having hypertension at age 3-4 years but did not receive treatment until age 16 years when her blood pressure reached a high of 150/100. Treatment consisted of salt restriction, weight loss and Hydrochlorthiazide, 50 mg 3 times a day for

a 10 month period. At that time, Lisa was 40 per cent above ideal weight. She placed herself on the Cambridge diet purposefully to lose weight as well as to decrease blood pressure. Her blood pressure has subsequently dropped to 130/86, a systolic pressure at the 75th percentile and a diastolic below the 90th percentile. She presently is off antihypertensive medication, being controlled by the weight watching, exercise and low-salt foods.

Lisa describes being 17 as "hard, difficult, and a pain." She attributes this to the many changes that have taken place in her life this past year, primarily a transfer from a private school of 110 students to a public high school of 2600 students. She has had to adjust to changes in teachers and classes, a more permissive atmosphere of drug use by her peers, pressures of not knowing everyone at school, as well as "not being 5 feet 4 inches, gorgeous looking or into drugs." Lisa copes by "keeping busy" through her school schedule and home activities which include homework, housecleaning, washing and ironing clothes, keeping in touch with friends, as well as working for her parents' diet food business. These actions also were identified by Lisa as ways to keep from being lonely. She states that she "gets lonely but keeps busy, so it's not too bad."

Lisa attributes her hypertension and weight problem to a "lot of it being hereditary." Lisa's decision to take an active role in decreasing her blood pressure came about by her frustration at taking antihypertensive medication, as well as multiple workups for hypertension which included taking blood samples four times a week and

missing school because of it. In Lisa's opinion there was no significant change in her blood pressure or in the way she was feeling when it was up, which she described as being "wrung out" and "not having energy" during this time period. She then said, "Forget it and tossed it (medication) all in the trash" and went on the Cambridge diet which caused her to lose weight and made her feel better. She uses the diet which consists of powdered drinks and soups for three meals a day. These meals total 330 calories. She does go off of the diet approximately once a month, eating regular foods like steak or crab as well as watching how much salt she's eating. Lisa has a commitment to the diet because it makes her feel good about herself because she's doing something for herself. Besides her diet, Lisa exercises by walking, swimming, square dancing, climbing stairs and using her one man trampoline.

Health means a lot to Lisa in that she feels "if you're not healthy, you can't enjoy life to its fullest." She describes herself as not being really very healthy, which she does not contribute to her high blood pressure, but rather to a curvature of the spine, partial limitation of elbow extension, and partial dislocation of one hip. "I'm healthy when it comes to being sick but maybe in a long term thing, I'm not so healthy."

Lisa feels she is living a pretty normal life despite being a hypertensive adolescent. "I do most things other teenagers do that I want to do. I've had it since I was a little kid. Maybe I have a high regard for life. I know that it's a gift and something that not everybody has, and you were put here to enjoy and to learn, and not everybody has 75 or 50 years. I just live with it, I guess."

Matthew

Matthew is 16 years old and a sophomore in high school. He lives with his father, a retired Air Force nurse anesthetist and mother, a registered nurse, along with two sisters, ages 13 and 17 years. Matthew was diagnosed at age 15 years with hypertension during a routine checkup. His blood pressure at that time was 130/96 with complaints of headaches and feelings of being "run down." His treatment initially consisted of salt restriction and Hydrochlorthiazide 50 mg every day. He was encouraged by his physician to exercise and by his parents to cut out salt completely. After three months on antihypertensive medication, Matthew's blood pressure dropped to 120/80. Medication was then discontinued and blood pressure was solely controlled on salt restriction and exercise. Obesity is not a problem for Matthew as his height and weight are proportionate.

Matthew's exercise routine consists of weight lifting and running which he began solely to decrease his blood pressure. Matthew describes himself as a person who used to "love salt." Within a two week period he started using low-salt to replace regular salt, and then went to no salt. Food tasted more natural to him without adding salt, so that it did not bother Matthew to cut out salt. He describes it as "more of a mechanical thing not putting it on."

Matthew is committed to not letting his blood pressure get out of hand as well as not having to take medication for it. Taking anti-hypertensive medication is a drastic step in Matthew's opinion that means "one has to be more careful than just watching the salt." Also, Matthew fears side effects that any medication can give one. In

addition though he states, "If it's necessary to take the medication, I will take it even though I don't like the idea of taking it."

Matthew feels there is a big difference being 16 and being 16 years old with hypertension. He describes this difference in terms of it being a lot easier not having to worry about what you eat, keeping the salt out, or remembering to take medication when blood pressure is high.

Daniel

Daniel is 15 years old and a freshman in high school. He lives with his retired Air Force father and mother along with two brothers and one sister. His father and one brother have a history of hypertension. Daniel was diagnosed at age 13 years with hypertension with pressures in the range of 150-140/90. He was worked up for hypertension and his electrocardiogram findings showed a left ventricular hypertrophy. His blood pressure has been controlled on Hydrochlorthiazide 50 mg every other day for the past year, as well as salt restriction and exercise for weight loss. Daniel was approximately 30-40 per cent above ideal weight. His blood pressure is now in the range of 120/76, the 50th percentile for age and sex. His weight also has decreased by 22 pounds.

Daniel's primary strategy for exercise is walking. Unlike Matthew, running makes Daniel tired and results in chest pains and elevated blood pressure. (These chest pains have been found not to be cardiovascular in origin.)

Daniel is decreasing his salt intake by cutting down on "real salty" foods such as potato chips and saltitos. He is also trying to

cut down on sugar by drinking less Coke and Kool-Aid so as to lose weight. According to Daniel, there is no difference between being 15 and being 15 years old with hypertension. Having high blood pressure does not "bother" Daniel. "I just don't worry about it. In other words, I just don't think about it."

Domains of Meaning

The domains of meaning presented in this section include:

1. "Ways to keep busy"
2. "Ways adolescents describe their health state"
3. "Things adolescents do to stay healthy"
4. "Ways to be an adolescent hypertensive"
5. "Ways adolescents take care of hypertension"
6. "Situations that cause blood pressure to go up"
7. "Reasons to want to keep blood pressure in good range"
8. "Advice hypertensive adolescents would give to other adolescents"

Ways to keep busy

Keeping busy was identified by the informants as a central part of their way of life. The informants described the strategies they use to keep busy. Each informant described a typical day as keeping busy. Keeping busy was viewed as "trying not to be lonely," "trying not to think about something," or "having to do something." Two of the informants used the same strategy as a primary method to keep busy while the third informant used a combination of all three.

"Do what needs to be done" and "do what hasn't been done in a long time" were elicited as direct responses to the question, "What are the ways that you keep busy?" One informant was very specific as to differentiating what needed to be done versus what hadn't been done in a long time. "Do what needs to be done" was viewed by the informant as

everyday tasks such as "doing homework," "working for my folks," and "keeping the house." "Do what hasn't been done in a long time" was perceived as a different category of ways to keep busy as these means were done less frequently on a weekly to monthly basis. They included "keeping in touch long distance with friends," "cleaning out drawers," "doing baseboards," "doing the windows," and "playing the organ."

"Do what is fun" as a means to keep busy was revealed incidentally in conversation through use of contrast questions. The informants all agreed that to do what was fun could be done both in a social setting with friends or in a private setting in terms of being alone. This data suggests that these informants do not have to rely on other people in order to have fun. They are mature enough to make their own amusement such as "reading history" (as a hobby), or "sitting in a quiet room and just thinking." (See Figure 6.)

Ways adolescents describe their health state

Informants described definite feelings when their blood pressure is up and when it is in the good range. (See Figure 7.) One informant identified her blood pressure as up when "something in her arm thumps," "when muscles bump and give you a signal telling that your blood pressure is up." Another informant identified his blood pressure as up when he was "tired." The third informant realized his blood pressure was up by the "lower number being pretty high and not going down." All three informants described feeling "sick" when their blood pressure was up. The physical descriptions of feeling "sick" included "chest pains," "dizziness," "arms tingling," "shoulder hurting," "stomach hurting," "bad headaches," and "throwing up." Feeling "wrung out" and "droopy,"

WAYS TO KEEP BUSY	DO WHAT NEEDS TO BE DONE	DO SCHOOL HOMEWORK	
		WORK FOR MY FOLKS	TAKE MESSAGES
			SELL DIET FOOD
			DO THE INVENTORY
		KEEP THE HOUSE	CLEAN
			IRON
	WASH		
	DO WHAT HASN'T BEEN DONE IN A LONG TIME	KEEP IN TOUCH LONG DISTANCE WITH FRIENDS	WRITE LETTERS
			TELEPHONE
		CLEAN DRAWERS OUT	
		DO BASEBOARDS	
		DO THE WINDOWS	
		PLAY THE ORGAN	
		DO WHAT IS FUN	PLAY BASEBALL
	PLAY BASKETBALL		
	JOKE WITH FRIENDS		
	LISTEN TO THE STEREO		
	PRACTICE SQUARE DANCE CALLING WITH DAD		
	GO TO PARTIES		
	DO HISTORY		
READ BOOKS AND LISTEN TO MUSIC TOGETHER			
SIT IN A QUIET ROOM AND THINK			
PLAY MINIATURE GOLF			
RAISE MONEY FOR BAND	PUT ON CAR WASHES		

Figure 6. Domains of Meaning "Ways to Keep Busy"

WAYS ADOLESCENTS DESCRIBE THEIR HEALTH STATE	HOW I FEEL WHEN BLOOD PRESSURE IS UP	SICK	HAVE CHEST PAINS
			BE DIZZY
			ARMS TINGLE
			SHOULDER HURTS
			STOMACH HURTS
			HAVE BAD HEADACHES
		THROW UP	
		WRUNG OUT	
		DROOPY	
		LACK OF ENERGY	BE TIRED ALL THE TIME
			CAN NOT STAY UP AT NIGHT
			CAN NOT DO HOMEWORK
			STOPS ME FROM SPORTS
			NOT MOTIVATED TO DO REPORTS
			CAN NOT PARTICIPATE IN SCHOOL ACTIVITIES
	BUMMED OUT	BE RUN DOWN	
		BE IN A MELLOW MOOD	
		DO NOT CAUSE TROUBLE	
		DO NOT JOKE AROUND	
		DO NOT MAKE NOISE	
SIT BACK AND JUST LISTEN TO MUSIC			
RIDE ALONG WITH CROWD			
DO NOT DO ANYTHING			
SCARED WHEN TAKING PILLS	TAKING PILLS IS A SLAP IN THE FACE		
	TAKING PILLS IS DRASTIC		
	HAVE TO BE MORE CAREFUL WHEN ON MEDICINE		
	TAKING PILLS IS ONE STEP BEYOND WATCHING SALT		
	TAKING PILLS IS A STEP IN THE WRONG DIRECTION		
	ONE CAN HAVE LETHAL REACTIONS TAKING PILLS		
HOW I FEEL WHEN BLOOD PRESSURE IS IN GOOD RANGE	A LOT BETTER	CAN JOKE WITH FRIENDS	
		DON'T PROCRASTINATE	
	GOOD ABOUT BLOOD PRESSURE	DO NOT WORRY ABOUT WHAT YOU EAT	
		ABLE TO GO FOR NEW MAX IN WEIGHT LIFTING	
	MORE ALIVE	SEE FRIENDS A LOT MORE	
		HAVE A LOT MORE FUN	
		BE READY TO FACE WORLD	
	AM ON EMOTIONAL HIGH	BE ABLE TO GET GOOD GRADES ON TEST	
		BE ABLE TO RUN	
		BE ABLE TO PLAY FOOTBALL	
		BE ABLE TO ACHIEVE GOALS GET UP AND DO THINGS	

Figure 7. Domains of Meaning "Ways Adolescents Describe Their Health State"

were also described by informants. However, they were unable to describe these feelings in more detail. "Lack of energy" and "bummed out" were major categories used by all informants to describe their health state, both physically and emotionally. "Lack of energy" was viewed as "the inability to get up and do things." "Bummed out" was used interchangeably by one informant to mean "run down." This informant questioned if these feelings of being bummed out and run down were just coincidental at the time his blood pressure was up. The other two informants, however, attributed these feelings as being a result of their blood pressure being up.

The category "scared when taking pills" was identified by two informants. There appeared to be motivational significance by these two informants to want to get off antihypertensive medication because of these feelings and to take care of their blood pressure by other means.

"How I feel when blood pressure is in good range" was viewed as being more positive in terms of feelings. The primary feelings reported by all informants were "more alive," and "am on emotional high." "More alive" was perceived by one informant to "being more socially visible" with friends so that his blood pressure directly affected his social life. When blood pressure was good, he would "see his friends a lot more and have more fun." "Am on emotional high" was regarded as different from everyday high energy levels in terms of the vastness in the rise of the level. This feeling allowed one informant "to keep up and moving." It is worthy to note that when blood pressure was "up," no informant described their blood pressure as being "bad." However, when blood pressure did drop, it was viewed as "good" by all the informants.

Things adolescents do to stay healthy

"Things adolescents do to stay healthy" were viewed as resources to maintain health. All three informants regarded health as valuable to their total well being and not something taken for granted. "I'd like to be in good health," commented one informant. Categories of things to do to stay healthy were arranged by the informants in terms of "to stay physically healthy," "to stay mentally healthy," and "to do what I want to do to have a good time." Health was thought of as a combination of being "physically fit," "mentally competent" and "being able to do what you want to do." "Get exercise" was considered the primary strategy for staying physically healthy. All the informants stressed the importance of being able to perform physical activities such as "walking," "climbing," "football," "running," "square dancing," and "weight lifting" without the body tiring out excessively.

The desire to be mentally healthy was stressed by two of the informants. Mental health was viewed as being "mentally alert and awake." It is accomplished by doing a variety of things. (See Figure 8.) There appears to be a link between mental health and physical health in the informants' thought processes. One informant believed that if one is not mentally healthy, one cannot be physically healthy. She described the process whereby if one does the same thing day after day, the mind is not exercised resulting in the inability to figure or imagine. This causes the person to shut himself up in a shell so that he does not go out or visit places or people. "When you crawl inside a shell you start to get sick and some people even die."

THINGS ADOLESCENTS DO TO STAY HEALTHY	TO STAY PHYSICALLY HEALTHY	EAT BALANCED FOODS	USE CAMBRIDGE DIET EAT VEGETABLES
		BE AWARE OF WHAT AND HOW MUCH SALT YOU'RE EATING	
		GET EXERCISE	WALK
			CLIMB STAIRS
			USE ONE MAN TRAMPOLINE
			SQUARE DANCE
			SWIM
			LIFT WEIGHTS
		RUN	
		PLAY FOOTBALL	
	PRACTICE BASIC HYGIENE	BRUSH TEETH	
		WASH FACE	
		TAKE SHOWERS	
		PUT ON CLEAN CLOTHES	
	DON'T GO THROUGH GARBAGE		
	GET SUN		
	GET ENOUGH SLEEP	TAKE NAP IF TIRED	
		SLEEP 7 to 10 HOURS AT NIGHT	
	CLOSE EYES AND LAY DOWN WHEN EYES ARE STRAINED		
TO STAY MENTALLY HEALTHY	IRON		
	VACUUM		
	SING		
	WATCH TV		
	LISTEN TO RADIO		
	PLAY THE ORGAN		
	READ		
	MEET NEW PEOPLE		
SIT BACK WITH A FRIEND	PLAY CHESS		
	SHOOT THE BREEZE		
TO DO WHAT I WANT TO DO TO HAVE A GOOD TIME	SKI		
	SAIL		
	FLY		
	GO TO FOOTBALL GAMES		
	GO TO CHOIR		
	GO TO GYMNASTIC MEETS		
	GO TO DANCES		
PLAY TENNIS			

Figure 8. Domains of Meaning "Things Adolescents Do To Stay Healthy"

"To do what I want to do to have a good time" was perceived by all three informants as a means to stay healthy. Each informant showed personal preferences as to what each did to have a good time. As one informant stated, "Everybody's ideas about having a good time differ."

Ways to be an adolescent hypertensive

The informants described the strategies they use to be adolescent hypertensives. This information represents beginning rules one needs to know to be an adolescent hypertensive. (See Figure 9.) Informants perceive being hypertensive adolescents from the perspective of living generally normal lives, doing what most other teenagers do. However, this view is relevant only when blood pressure is controlled and not when it is elevated.

Informants do talk about their high blood pressure. They talk with "family," "grandparents," "girlfriends," "best friends," "people at school," "other people who have high blood pressure," or "anybody who wants to know." One informant stated, "It's nothing to be ashamed about." It appears the subject of hypertension is brought up in different ways when talking to special people (family) versus acquaintances (people at school). Family, girlfriends, and boyfriends found out directly from the informant of his hypertension through lengthy conversations on the subject that contained comments about "cutting back on salt," "stop using salt," "jokes about the cause of the high blood pressure," as well as "not letting things worry me." Whereas conversations about hypertension with peers at school are limited in terms of just a momentary discussion in which they would say, "Don't let things

WAYS TO BE AN ADOLESCENT HYPERTENSIVE	TALK WITH	FAMILY	
		GRANDPARENTS	
		GIRLFRIEND	
		BEST FRIEND	
		PEOPLE AT SCHOOL	
		OTHER PEOPLE WHO HAVE HIGH BLOOD PRESSURE	
	TALK ABOUT	ANYBODY	
		CUTTING BACK ON SALT	
		BEING WORRIED	
		NOT LETTING THINGS BOTHER ME	
		FOODS THAT HAVE HIGH SALT, HIGH SODIUM CONTENT	
		STOPPING THE USE OF SALT	
		GIRLFRIEND BEING CAUSE OF HIGH BLOOD PRESSURE	
		REGULAR CONVERSATION	SCHOOL VACATION
			GETTING OUT OF SCHOOL
			GET DRESSED UP
		DO HAIR	
	FEEL GOOD ABOUT MYSELF	WHEN I LOOK NICE	
		WHEN I GET COMPLIMENTS FROM PEOPLE	
		WHEN NOBODY INSULTS ME	
		WHEN I HAVE HOMEWORK DONE ON TIME	
		WHEN I FIND OUT SOMEONE CARES	CLOSE FRIEND
			BOYFRIEND
			GIRLFRIEND
			OLDER PERSON
		WHEN I KEEP BUSY	
		WHEN I GO ON A TRIP	GO TO HAWAII
			GETTING 100 OUT OF 100 ON A TEST
		MEETING A GOAL THAT I'VE SET	MAKING DRUM MAJOR
			DOING A MAXIMUM LIFT
WHEN I UNDER- ESTIMATE MYSELF		GET AN "A" ON A TEST THAT I THOUGHT I DID BAD ON	
WISH	TO BE HEALTHY	TO DO SPORTS	
		TO DO THINGS I WANT TO DO	
		TO GO PLACES I WANT TO GO	
	TO HAVE WHAT YOU NEED TO LIVE THE WAY YOU WANT TO LIVE	TO GRADUATE WITH A DEGREE	
		TO LAND A JOB	
		TO AFFORD A NICE HOME	
		TO HAVE A CAR	
		TO GO ON TRIPS	
	TO KNOW THAT EVERYONE I KNEW HAD ENOUGH LOVE	TO HAVE SOMEONE WHO CARES	
	TO NOT HAVE TO CHRONICALLY WORRY	TO GET THE NUCLEAR WAR OVERWITH	
TO BE OLD ENOUGH AND MATURE ENOUGH TO BEGIN A LIFE TOGETHER WITH MY GIRLFRIEND			

Figure 9. Domains of Meaning "Ways To Be An Adolescent Hypertensive"

bother you." One informant stated that she did not talk very often with peers about high blood pressure. "We talk mostly about school vacation, classes, graduating and about getting out of school. We don't talk about being sick or having high blood pressure." The only reason she stated that her friends found out was when during her workups for hypertension, she missed so much school, that they asked her what was the matter. When she told them that she had high blood pressure, somebody said, "Oh, you do," but nothing more was said.

Informants feel good about themselves when they physically are attractive, get social reinforcement from others through compliments, as well as learning someone cares about them. Keeping busy, meeting goals, and doing homework on time are also times that they feel good about themselves. Some of their self esteem therefore is based on the esteem other people have of them and their ability to be self-reliant.

In the category, "Wish," informants wish for physical, material, and emotional independence. "To be healthy" was cited by all informants as the strongest wish desire. The physical ability to "play sports," "do things that I want to do," and "go places that I want to go" are the ways they viewed being healthy. The second strongest desires were material desires in the category, "to have what you need to live the way you want to live." Finally, all informants valued the ability to form rewarding relationships with others. Specific ways cited were "to know that everyone I knew had enough love," "to not have to chronically worry," and "to begin a life together with my girlfriend."

Ways adolescents take care of hypertension

The informants described the resources they use to take care of hypertension. (See Figure 10.) Taking care of hypertension was regarded as "not letting it (blood pressure) get out of hand" and "actively doing something to keep it down." Each informant followed a diet. The Cambridge diet was the primary diet for one informant. She was on this diet for the dual purpose of taking care of hypertension as well as for weight loss. Prior to going on this diet, this informant watched her salt intake by "reading labels and buying low salt or no salt foods." Another informant cut out adding salt to his diet but would still eat what everyone else was eating such as "peanut butter and jelly sandwiches, and salami." The third informant cut down on potato chips and cut out salditos from his diet so as to "watch salt." He also cut out sugar from his diet in terms of cutting down on "Cokes and Kool-aid" so as to lose weight. All three informants employ exercise as a way to take care of hypertension. Running was the primary form of exercise for one informant, while walking was the principle form used by the other two informants.

"Take care of yourself when blood pressure is really up" was viewed as a different category of ways to take care of hypertension than following a diet, exercising, or watching salt. The approach to take care of one's hypertension differed with the individual. However, a common theme each informant stressed was "not worrying." Worry was perceived as a continuous pressure on one's nerves that acts as a depressant, causing adverse mental and physical effects. Worrying does not help the treatment of hypertension.

WAYS ADOLESCENTS TAKE CARE OF HYPERTENSION	FOLLOW A DIET	USE CAMBRIDGE DIET	
		ALTERNATE CAMBRIDGE WITH REGULAR DIET	
		EAT WHAT EVERYBODY ELSE EATS	
		DON'T USE SALT	
		CUT OUT SUGAR	
		USE LOW SALT - NO SALT FOODS	
	EXERCISE	WALK	
		RUN	
		CLIMB STAIRS	
		USE ONE MAN TRAMPOLINE	JOG
		LIFT LEGS UP	
		SQUARE DANCE	
		SWIM	
	WATCH SALT	READ LABELS	
		LOOK FOR LOW SALT - NO SALT FOODS	
		BE AWARE OF CANNED FOODS	
	TAKE CARE OF YOURSELF WHEN BLOOD PRESSURE IS REALLY UP	SIT DOWN FOR 5 MINUTES AND THEN GO ON	
		GET ENOUGH SLEEP	
		HAVE A COLD GLASS OF WATER	
		BREATHE DEEP AND RELAX	
		LISTEN TO MUSIC	
		KEEP FROM GETTING UPSET	TELL YOUR- SELF IT ISN'T WORTH IT
			FORGET ABOUT WHAT MADE YOU UPSET
			DON'T DWELL ON IT
			STUDY FOR TESTS
		TAKE ONE STEP AT A TIME	
		DON'T WORRY	
DON'T TAKE IT REAL HARD			
DO WHAT THE DOCTOR SAYS		TAKE MEDICATION	
	TAKE SOME WEIGHT OFF		
	CUT BACK ON SALT		
	DO MORE EXERCISE		
	CHECK BLOOD PRESSURE REGULARLY		
DO WHAT PARENTS SAY	STOP USING SALT		
	DON'T LET THINGS WORRY YOU		
	DON'T KEEP THINGS BOTTLED UP INSIDE	TALK	
	REMEMBER TO TAKE YOUR PILLS		
DO WHAT FRIENDS SAY	TAKE CARE OF YOURSELF		

Figure 10. Domains of Meaning "Ways Adolescents Take Care of Hypertension"

"Do what the doctor says" was seen primarily as a major strategy to take care of hypertension. What the doctor says becomes ways that informants can actively take care of themselves for hypertension. With the exception of taking medication, physician-directed strategy was most acceptable to the informants. "Do what parents say" is a category that reinforces what the doctor says. "Do what friends say" was cited by informants, but they were very vague as to how friends tell them to take care of themselves. This seemed to be associated with the fact that friends do not make "too big of a deal" about the informant's hypertension. In conversations with peers, the subject of hypertension only lasts momentarily. One informant stated, "We don't talk about being sick."

Situations that cause blood pressure to go up

The three informants had a keen awareness of situations that caused their blood pressure to go up. These were described as "stressful" or "uncomfortable." Stressful situations were viewed as "unsettling and strain-inducing." Situations such as "problems with girlfriend," "music auditions," and "exam time" were identified as stressful. Uncomfortable situations were described as those situations where one is "contained," "trapped," "blocked," and "frustrated." "A party where you don't know anyone," "going off diet," "running," "playing soccer," and "playing football" were identified as uncomfortable situations. Athletic endeavors were uncomfortable because they were tests of one's ability to be physically independent, which was already being challenged by the potential handicap of hypertension. (See Figure 11.)

SITUATIONS THAT CAUSE BLOOD PRESSURE TO GO UP	STRESSFUL	PROBLEMS WITH GIRLFRIEND
		MUSIC AUDITIONS
		DRUM MAJOR TRY OUT
		TRYING FOR A MAXIMUM LIFT
		BEFORE SCHOOL TESTS
		EXAM TIME
		FIGHTING WITH PARENTS
		TAKING A HEART STRESS TEST
		BEING MADE FUN AT
		GETTING HURT
		WHEN TOTALLY EXHAUSTED
		HAVE HAD NO SLEEP
		UNCOMFORT- ABLE
	GOING OFF DIET	
	RUNNING	
	PLAYING SOCCER	
	PLAYING FOOTBALL	

Figure 11. Domains of Meaning "Situations That Cause Blood Pressure To Go Up"

Reasons to want to keep blood pressure in good range

The motivations for keeping blood pressure in good range are varied among the informants. (See Figure 12.) All informants however do share the desire "to enjoy life to its fullest." One informant wanted to go to Hawaii for the summer and she said, "If my blood pressure was up, I couldn't go and I wouldn't be able to enjoy it because I feel sick when my blood pressure is up. So it means a lot to me." Another informant stressed that when his blood pressure was up, it did not really "worry" him but it did "alarm" him. By "alarm" he meant "an awakening that gets one motivated to do something." He cited that both his father and grandfather had high blood pressure, so he knew about the long term effects and did not want to "put up" with them. "So now that I've had it, I can get it, so I have to keep an eye on it and make sure I don't let it get out of hand." "To not have to feel run down" appeared to be a common motivational factor for all informants. One informant referred to being run down as "not being in the mood to do anything." Another informant said that he was just really "tired" all the time. The third informant said she felt "awful" being "run down." "I'd wake up in the morning and I would think, I have to get up?"

The categories "not having to worry about high blood pressure is easier" and "affects on one's social life" were elicited from two informants. One informant said that remembering to take medication is an "annoying pain" especially when she went to a friend's house or when she went camping. "At these times, I don't like to have to worry about anything when I go away. I just want to go away and have a good time." Another informant mentioned how it is easier for him with friendships

REASONS TO WANT TO KEEP BLOOD PRESSURE IN GOOD RANGE	ENJOY LIFE TO ITS FULLEST	TO GO TO HAWAII
		TO KNOW PEOPLE
		TO PLAY TENNIS
		TO SWIM
		TO JOG
	NOT HAVE TO PUT UP WITH LONG TERM EFFECTS OF HIGH BLOOD PRESSURE	HEART PROBLEMS
		STROKE
		DYING
	NOT TO FEEL RUN DOWN	
	NOT HAVING TO WORRY ABOUT HIGH BLOOD PRESSURE IS EASIER	CAN EAT WHAT YOU WANT TO
		DO NOT HAVE TO REMEMBER TO TAKE MEDICATION
	AFFECTS ON ONE'S SOCIAL LIFE	WHEN BLOOD PRESSURE IS GOOD, ONE CAN SEE FRIENDS A LOT MORE
WHEN BLOOD PRESSURE IS GOOD, ONE CAN HAVE MORE FUN		

Figure 12. Domains of Meaning "Reasons To Want To Keep Blood Pressure in Good Range"

now that his blood pressure is "good." He said that he never wanted to do anything with his friends. "I'd just kind of be there. Now, I can kid around with them." The desire to "enjoy life to its fullest" and "to not have to feel run down" appears to provide the strongest motivation to keep blood pressure in "good range." The remaining reasons appear to be not as strong.

Advice hypertensive adolescents would give to other adolescents

This advice includes a varied assortment of responses from the informants in the categories, "about hypertension," "what to do," and "what to think." All the responses were elicited through direct questioning. However, the majority of responses were short sentences whereby the informants could not or did not wish to elaborate further. (See Figure 13.) The most common recommendations by all three informants included "do what the doctor tells you," "don't worry," and "you can do what you want to do." One informant reasoned that "to do what the doctor tells you was good advice because it worked for me." The informants felt there is no drastic change in their life styles with having hypertension. Therefore, "you can do what you want to do." Two informants stated that they did "what other teenagers did" like "ski, fly, sail, drive, as well as go to school, parties and dances." Only one of the informants felt restricted in that he attributed his inability to "run, play football or soccer" as being caused by his high blood pressure rather than his overall lack of physical conditioning. "Don't worry" is also a common suggestion of the informants as they feel "worrying directly affects blood pressure." However, they were vague in explaining just how this happens.

ADVICE HYPERTENSIVE ADOLESCENTS WOULD GIVE TO OTHER ADOLESCENTS	ABOUT HYPER- TENSION	YOU CAN GET IT		
		CALL IT HIGH BLOOD PRESSURE		
		SEVERAL MILLION PEOPLE HAVE IT		
		IT'S NOT CATCHING		
		A LOT OF IT CAN BE HEREDITARY	MY FATHER HAS IT MY GRANDFATHER HAS IT	
	WHAT TO DO	NOT A WHOLE LOT THAT YOU CAN DO ABOUT IT LIVE A PRETTY NORMAL LIFE		
		YOU CAN DO WHAT YOU WANT TO DO	SKI FLY SAIL DRIVE	
		WALK RUNNING CAN HELP		
		WATCH WHAT YOU EAT	CUT BACK ON SALT DON'T EAT SALT	
		KEEP TRACK OF IT	CHECK BLOOD PRESSURE EVERY TWO MONTHS	
		TAKE ONE STEP AT A TIME		
		DO WHAT THE DOCTOR TELLS YOU	TAKE MEDICATION TAKE SOME WEIGHT OFF EXERCISE CUT BACK ON SALT	
		FIGHT TO KEEP BLOOD PRESSURE DOWN	NEVER GIVE UP NEVER FALL INTO DESPAIR REMEMBER TO TAKE MEDICATION	
		DON'T WORRY		
		WHAT TO THINK	DON'T THINK ABOUT IT	
			IT'S NOT AN ILLNESS WHERE YOU HAVE TO BE AFRAID TO GO OUT	CAN GO TO SCHOOL CAN GO TO PARTIES CAN GO TO DANCES
			IT DOESN'T BOTHER ME	
			IT CAN ALARM YOU	WORRY ABOUT STROKES WORRY ABOUT HEART PROBLEMS WORRY ABOUT DYING

Figure 13. Domains of Meaning "Advice Hypertensive Adolescents Would Give To Other Adolescents"

Dimensions of Contrast

The informants could easily explain what things were alike and "belonged together." However, they were also able to explain how similar things were different. Two categories were differentiated by the informants: "ways to take care of hypertension;" and "ways to stay healthy." In the first category, the four most widely used ways by the informants were contrasted.

Ways to take care of hypertension

The Cambridge diet, hypertensive medication, low salt - no salt foods, and exercise were the most commonly used "ways to take care of hypertension" as described by the informants. The dimensions of contrast of these sets were identified by the informants as: "Patient Cost;" "Lose Weight;" "Decreases Blood Pressure;" "Taste;" "Doctor Prescribed;" "Convenient to Use;" "Increases Energy Level;" "Readily Accessible;" "Side Effects;" and "Makes Me Feel Like I'm Doing Something for Myself." (See Figure 14.) The informants are not concerned with the patient cost of the method used. The Cambridge diet and low salt - no salt foods were viewed as high patient cost items. One informant remarked, "Your health is worth it." Medication and exercise were regarded as low patient cost ways. Medication was available without cost to these informants. Exercise was done on school property or in the home so it also was without cost. None of the informants' exercise regimens took place in health spas. The Cambridge diet and exercise cause weight loss as well as decrease blood pressure. This added bonus seemed to appeal to the informants as these methods were favored over

	PATIENT COST	LOSE WEIGHT	DECREASES BLOOD PRESSURE	TASTE	DOCTOR PRE- SCRIBED	CONVE- NIENT TO USE	INCREASES ENERGY LEVEL	READILY ACCESSI- BLE	SIDE EFFECTS	MAKES ME FEEL LIKE I'M DOING SOMETHING FOR MYSELF
CAMBRIDGE DIET	HIGH	YES	YES	GOOD	NO	YES	YES	YES	NO	YES
HYPERTENSIVE MEDICATION	LOW	NO	YES	NA	YES	YES	NO	YES	YES	NO
LOW SALT - NO SALT FOODS	HIGH	NO	YES	NATURAL	YES	YES	NO	YES	NO	YES
EXERCISE	LOW	YES	YES	NA	YES	YES	YES	YES	NO	YES

Figure 14. Dimensions of Contrast in "Ways to Take Care of Hypertension"

medication and low salt - no salt foods which did not result in weight loss. Only one of the four, the Cambridge diet, was not doctor-prescribed but self-prescribed. Hypertensive medication was the only means viewed to have side effects. Side effects were regarded as "lethal reactions" by the informants. Also of interest, with the exception of medication, the other three ways made the adolescents feel "they were doing something for themselves" and not for the doctor or parent or best friend. This suggests that these informants need not depend on others to take care of hypertension, but rather depend on themselves and their own prescribed course of treatment.

Ways to stay healthy

The informants were able to make distinctions among the "ways to stay healthy." The dimensions of contrast included: "Frequency;" "Personal Preference;" "Relaxing;" "Physically Stressful;" "Involves Communication with People;" and "Self-Entertaining." (See Figure 15) The most important distinction was that in all but three ways identified, the informants responded that they "liked to do" these actions. Of the three that the informants responded "hate to do," they did them because they liked the results obtained. One informant said that he "hated to run" but what he "liked was the results of running." These results consisted of "physical health," "muscle tone-up," and "providing a time where I can talk to my friend, Mark." "Vacuuming" and "ironing" also were actions expressed by an informant in a negative preference. However, the informant again did like the results. Vacuuming results in a "clean house." Ironing results in "nice looking clothes." The

	FREQUENCY	PERSONAL PREFERENCE	RELAXING	PHYSICALLY STRESSFUL	INVOLVES COMMUNICATION WITH PEOPLE	SELF-ENTERTAINING
EAT BALANCED FOODS	1-2x/DAY	LIKE TO DO	NA	NO	NA	NA
BASIC HYGIENE	3x/DAY	LIKE TO DO	NA	NO	NA	NA
GET ENOUGH SLEEP	1x/WEEK	LIKE TO DO	YES	NO	NA	NA
CLIMB STAIRS	DAILY	LIKE TO DO	NO	NO	NO	NA
WALKING	DAILY	LIKE TO DO	YES	NO	NO	NA
RUNNING	4-5x/WEEK	HATE TO DO	YES	NO	YES	NA
LIFTING	3x/WEEK	LIKE TO DO	NO	YES	YES	YES
SWIM	2-3x/WEEK	LIKE TO DO	NO	YES	YES	YES
SQUARE DANCE	1x/WEEK	LIKE TO DO	NO	YES	YES	NO
MEET NEW PEOPLE	1x/WEEK	LIKE TO DO	NO	NO	YES	NO
SIT BACK WITH FRIENDS	1-2x/WEEK	LIKE TO DO	YES	NO	YES	NO
READING	DAILY	LIKE TO DO	YES	NO	NO	YES
PLAY THE ORGAN	1-2x/WEEK	LIKE TO DO	YES	NO	NO	YES
LISTEN TO THE RADIO	2x/WEEK	LIKE TO DO	YES	NO	NO	YES
WATCH TV	DAILY	LIKE TO DO	YES	NO	NO	YES
SING	5x/WEEK	LIKE TO DO	YES	NO	NO	YES
VACUUM	2x/WEEK	HATE TO DO	NO	NO	NO	NA
IRON	DAILY	HATE TO DO	NO	NO	NO	NA

Figure 15. Dimensions of Contrast in "Ways to Stay Healthy"

frequency at which these ways to stay healthy were done did not appear to have any relationship to personal preference. These ways were not viewed as being "physically stressful" to the informants with the exception of "lifting," "swimming," and "square dancing." The informants identified these ways to stay healthy as activities that involved "communication with people" as well as being "self-entertaining." "Communication with people" was regarded as "getting people's views and giving them yours." Those described as "self entertaining" were viewed as "actions that entertain you where you don't have to do anything." "You don't have to use your mind."

Cultural Themes

Cultural themes discovered from this study are derived from recurrent messages found throughout the various domains. These themes provide the framework by which informants organize what they know. This knowledge may be tacit and may require the researcher to interpret the cultural message after examining the domains for relationships and unifying ideas. Cultural themes which inform the behavior of 15-17 year old hypertensive adolescents are "I must do something for myself," "I feel___," "I do not want to worry but___," and "I can live with hypertension."

"I must do something for myself"

"I must do something for myself" is a major recurrent theme that informs the behavior of these adolescents. This is most obvious in the domains of meaning, "ways to keep busy," "things adolescents do to stay healthy," ways adolescents take care of hypertension," and "ways to be

an adolescent hypertensive." The informants in essence said, "They have to be doing something that makes them feel good about themselves." This theme is reflected in "ways to keep busy." "Ways to keep busy" were viewed by the informants also as "ways to keep from being lonely" as well as an alternative means "to not think about things that caused extreme concern or worry" such as a father's third heart attack.

An informant's desire to do for himself is reflected in the responsibilities he/she incurs for maintaining physical and emotional health. This desire begins when the adolescent places a value on what his health is worth to him. Each informant reflected that one cannot put a price on one's health. It then becomes the adolescent's responsibility to maintain his optimum health. Each adolescent chose a method personally suitable to carry out this program. "Exercise," "sleep," "eating balanced foods," as well as "doing different things," are acceptable methods for these informants. However, the particular form chosen corresponds to the life style of the informant. For example, one informant chose exercise in the form of "weight lifting and running" because this helped build his physique. Another informant chose exercise in the form of "walking" because it did not "tire" him like "running" did. The third informant would exercise through use of her one-person trampoline. Among the dimensions of contrast of "ways to stay healthy," it was discovered that 84 per cent of the ways reported by these informants were actions they did for themselves that they "liked to do" with the remaining 16 per cent, actions that they "hated to do" but "liked" the results.

The three informants were primarily responsible for controlling their hypertension. They chose and planned their own diet. They exercised. They watched their salt intake. They sought medical care for their hypertension. They listened to suggestions made by their doctors, parents, and friends. However, each informant knew and practiced ways that worked best for the individual in terms of lowering blood pressure. For example, one informant chose a method of dieting, the Cambridge diet, that was not doctor-prescribed to lower her blood pressure and lose weight. She rationalized this choice by saying it made her feel good about herself because everything in the diet was "balanced," "nutritious," "tasted good," and that she was "doing something" for herself, not for her mom, the doctor, her aunt, or her best friend.

In the domain of meaning, "ways to be an adolescent hypertensive," the informants were cognizant and able to express when they felt good about themselves as well as what they wished for themselves. These informants recognize that attaining adulthood means becoming more independent -- that is, doing things for themselves. They derive satisfaction from setting goals and attaining them. What they wish becomes a goal and they feel good when they attain that goal.

"I feel "

The theme "I feel___" demonstrates the adolescent's awareness of and ability to describe subjective feelings. This theme is manifested in the domains of meaning, "ways adolescents describe their health state," and "reasons to want to keep blood pressure in good range." The

three informants ascribe particular sensations when their blood pressure is "up" and when it is in the "good range." The feelings associated with blood pressure in the "good range" were positively expressed in terms of feeling "a lot better," "good," "more alive," and "on an emotional high." In the domain of meaning, "reasons to want to keep blood pressure in good range," the theme "I feel___" was expressed negatively in terms of "feeling run down" as a motivational force for keeping blood pressure "good." One informant expressed this motivation in terms of the hardship "feeling run down" places on friendships. It is important for the adolescent to keep in social contact with people and establish ongoing relationships. When feelings of being "run down" are present as contributed to high blood pressure, the adolescent does not feel good about himself, thus motivating him to do something to change this feeling as well as lower his blood pressure. Therefore, there seems to be an interplay between the themes "I must do something for myself," and "I feel___."

"I do not want to worry but ___"

The theme, "I do not want to worry but___" is reflected in the domains of meaning, "ways to be an adolescent hypertensive," and "advice hypertensive adolescents would give to other adolescents." As adolescents strive for identity and independence there is an understandable tendency to dislike admitting to any handicap which could hamper their drive towards these goals.

One informant believed strongly that a nuclear war was inevitable. One of his three wishes was to get it over with right away. He

reflected that worrying about a nuclear war could kill you just as surely as a bomb could if you let it get to you. Another informant described being 16 as "a complicated time, a caught-in-between stage as far as what you can and can not do." There were times when he wished he was younger so he would have less to worry about. During the interviews it was important for him to tell this researcher that having hypertension did not cause him to "worry." He reasoned that he was more "alarmed" than "worried" at having hypertension. Being "alarmed" was regarded as an "awakening," a positive experience, while "worrying" was viewed as a "depressant." However, in another interview, he admitted to being "somewhat worried as to the long term effects of hypertension." This ambivalency was manifested also by the third informant. She remarked that having high blood pressure did not "worry" or "bother" her. Yet in the next breath, she responded that she did not "think about it." However, in their advice to other adolescents, each informant's major suggestion was "don't worry." "It (worry) can affect your blood pressure."

"I can live with hypertension"

The theme, "I can live with hypertension" reflects the experiences of these informants, confirming that hypertension is not an encumbrance to their life style or to their goal of being self sufficient. This was visible in the domains of meaning, "advice hypertensive adolescents would give to other adolescents," and "ways to be an adolescent hypertensive." The informants described being adolescents with hypertension as living pretty normal lives. One informant has lived with

hypertension for over ten years. She describes herself as "having travelled extensively throughout the United States," as well as being able to "fly," "sail," "ski," and generally do whatever she "likes to do." She sees no handicap or detriment in having hypertension. She perceives it as an illness which must be controlled, but one that is not frightening, nor physically, emotionally, or socially restricting to her life style. "You can do what you want to do and what most other teenagers do." This idea appears to be generated by each informant's feelings of wellness and lack of symptoms when blood pressure is controlled. There seems to be an underlying motivation to comply with hypertension regimens so as to maintain these feelings. "I can live with hypertension as long as I keep track of it and continuously work at keeping it down," stated another informant. All informants did not feel this extra effort placed any additional burden or strain on them, but rather served as a means to make them "feel good" about themselves by "doing something for themselves." Again, a link seems to exist among the themes that organize these informants' knowledge.

Summary

The data presented described the three informants and the researcher's experience with them. Eight domains of meaning developed from the ethnographic data were: "ways to keep busy"; "ways adolescents describe their health state"; "things adolescents do to stay healthy"; "ways to be an adolescent hypertensive"; "ways adolescents take care of hypertension"; "situations that cause blood pressure to go up"; "reasons to want to keep blood pressure in good range"; and "advice hypertensive

adolescents would give to other adolescents." Dimensions of contrast were performed on "ways to stay healthy" and "ways to take care of hypertension." Further analysis revealed four cultural themes: "I must do something for myself"; "I feel____"; "I do not want to worry but____"; and "I can live with hypertension."

CHAPTER 5

CONCLUSIONS

The findings and conclusions of this study are presented in the following sections: the cultural themes and the conceptual orientation; recommendations for care of the hypertensive adolescent; and recommendations for further research.

The cultural themes generated from this study were "I must do something for myself", "I feel___", "I do not want to worry but___", and "I can live with hypertension." These themes represent organizing threads of the culture of the informants. These threads or organizing principles inform the behavior of the informants.

The conceptual orientation contains the constructs: the culture of adolescence, self-care activities, hypertension, and compliance. A synopsis of the conceptual orientation is presented in the following statements:

- 1) The culture of adolescence is unique from that of childhood and adulthood.
- 2) Adolescents can constructively utilize self-care independently if given responsible guidance.
- 3) Hypertension in adolescence may be the precursor to hypertension in adulthood with all its known serious consequences.
- 4) The self-care activity of compliance is not well understood in hypertensive adolescents.

Cultural Themes and the Conceptual Orientation

The data supports the idea of the culture of the adolescent. The informants did not know each other and did not have an opportunity to exchange information. The consensus and similarity of the data, especially in the categories of "ways adolescents describe their health state", "things adolescents do to stay healthy", "ways to be an adolescent hypertensive", and "ways adolescents take care of hypertension", lends weight to the assumption that adolescents sharing a developmental stage share a common view of the world.

Part of the psychological development of adolescence is cognitive growth. The themes "I can live with hypertension", and "I feel ___" complements Piaget's theory concerning the adolescent's ability to construct a system of beliefs and reflect on his activity of thinking. Due consideration is now given to the possible and what might be. As predicted by Piaget's theory of cognitive development, the adolescents were able to verbalize conceptually concerning hypertension. They were able to express their understanding of hypertension and how it affected their health and their life style. Hypertension, also called high blood pressure by these informants, was viewed as a partly hereditary illness which one does not have to be afraid to have.

The perception of health was important in the adolescents' value systems. Health was described in terms of being physically fit and mentally competent. The adolescents reasoned that if one was not healthy, one could not enjoy life to the fullest. They were able to describe their health state subjectively in terms of feelings both in the physical and emotional realm. They philosophized that one must

"fight" to keep blood pressure down so one can live more easily with hypertension.

Reflective thinking was relevant in the adolescents' verbal expressions as they were able not only to apply a set of solutions (ways to take care) to hypertension but could consider the effects of all possible variables. One informant demonstrated the use of reflective thinking by reflecting that if he did not watch his hypertension today, he could then get it back tomorrow. "Now, that I know I've had it, I know that I can get it."

Erikson's psychoanalytic theory of development balances the theme, "I must do something for myself." Erikson (1950) labelled the adolescent stage as identity vs. identity diffusion. The adolescent's most important goal is achieving a notion of competency in achieving a positive sense of identity and independence. This notion of competency results in a wide experimentation with patterns of identity so that the adolescent can have answers to the question, "What context can he be and become?"

The data indicates that adolescents view hypertension as a health deviation and chronic disease only if it is not controlled. Uncontrolled hypertension represents a threat to health. However, to the adolescent, it represents a much greater threat to their sense of self identity and self worth. They view hypertension as a warning of their physical vulnerability, but more important as a hindrance to their socialization process.

The description of psychological growth tasks of adolescence by Adams et al. (1976) completes the theme, "I do not want to worry

but ___". The tasks of seeking social stability, developing a workable value system and verbalizing conceptually exert pressure on the adolescent. With puberty already experienced, the adolescent may not be comfortable with the subsequent creation of an atmosphere of self consciousness, anxiety and increased introspective thinking. Ill health in the form of hypertension further complicates forming one's identity in terms of body image. There exists then an understandable tendency to not want to admit to handicaps, such as hypertension, that hamper drives toward stability, identity and independence.

The adolescent's view and practice of self care was similar to Orem's (1971) concept in that the activities were personally initiated and performed by the individual on his own behalf to maintain health and well being. Self care was considered a positive action with individuals acting differently to achieve the same goal, reduction of high blood pressure. In the case of these adolescents, their compliance to anti-hypertensive regimens seems to be influenced by their perception of uncontrolled hypertension as a threat to maximum enjoyment of life, to optimum physical and mental health, and to building social relationships. They see the benefits of controlling their hypertension as worthwhile (to feel good, to have physical and mental energy so as to achieve goals, to have more fun, to worry less, to build friendships) and their need for control lets them perceive the compliance behavior as feasible. The means to achieve these benefits differ with each adolescent from dieting, exercise, watching salt, taking medication to self-prescribed regimens.

The data from this study suggests that these adolescents can be effective self-care agents. The informants' blood pressures were reduced because of their self-care activities. Their antihypertensive strategies were completely under their control in terms of choosing to comply with physician-prescribed or self-prescribed regimens. Parents and peers were used as sources of support, but the decision to comply remained with the adolescent. Active compliance with antihypertensive regimens enhances the adolescent's feelings of self control and self worth. This in turn helps them define a personal and fulfilling adult identity.

Recommendations for Care of Hypertensive Adolescents

This study explored the culture of adolescence as it is reflected by hypertensive adolescents. The purpose was to gain insight into some of the cultural knowledge which informs the behavior of these adolescents in regard to the compliance experience. Health professionals can use this information to develop therapeutic regimens with the adolescent. If the therapeutic approach includes elements which are complementary to the organizing themes, adolescent compliance will be enhanced. The cultural themes which can provide guidelines to the care regimens are "I do not want to worry but___", "I feel___", "I must do something for myself", and "I can live with hypertension".

Hypertension can be a silent disease in adolescence and can be easily ignored or denied by the adolescent. The theme "I do not want to worry but___" can be very important in the compliance experience. When the clinician informs the adolescent that he has hypertension, the

clinician can then explain that it is natural to worry and a good thing to be concerned, as it is a sign that one wants to take care of oneself. This information allows a beginning form of therapy for the adolescent by making the initial negative experience of worrying into a positive sign, showing that the adolescent can take care of himself because he is concerned about his health.

In contact with the hypertensive adolescent, the health professional must develop a rapport with the adolescent that demonstrates the clinician's willingness to listen and hear what the adolescent is saying and feeling. The theme, "I feel ___" then becomes significant in terms of the clinician counselling the adolescent as to the meaning of hypertension to the adolescent as well as to his life style and life goals. This can not be accomplished without knowing how and what the adolescent feels (e.g., reaction to the discovery of hypertension).

The theme, "I must do something for myself" is very important for health professionals to employ in planning the therapeutic regimen with the hypertensive adolescent. The adolescent is the decision-maker in terms of whether or not he chooses to comply. He also assumes responsibility for his treatment regimen. The data from this study suggests that the compliance experience of adolescents requires a motivational factor to comply. The informants of this study appeared motivated when they were doing things for themselves that increased their self esteem and self worth. Therefore, care activities (either doctor or patient prescribed) for hypertension must be planned from these motivational factors.

Finally, the theme "I can live with hypertension" becomes relevant only if coping with hypertension can be integrated in the adolescent's desire to be self sufficient, and if the rewards of compliance (self esteem, self worth, independence, "good" feelings) are made more visible. The care plan should include both doctor-prescribed and self-prescribed antihypertension regimens which promote self esteem and self sufficiency. In conclusion, if the adolescent can be motivated to see hypertension as a challenge to be overcome or a step ahead in his drive to be a self-caring adult, he is much more likely to accept his hypertension and cope with it successfully.

Recommendations for Replication

- 1) Repeat the study with hypertensive adolescents ages 12 to 14 years to compare with hypertensive adolescents ages 15 to 17 years. The cultural themes may be different due to age and related growth tasks.
- 2) Repeat the study with hypertensive adolescents ages 18 to early 20's to compare with hypertensive adolescents ages 15 to 17 years. The cultural themes may be different due to age and related growth tasks.
- 3) Repeat the study with hypertensive adolescents ages 13 to 19 years diagnosed within 3 months prior to interviews to compare with hypertensive adolescents ages 13 to 19 years who have been on antihypertensive therapy for at least a 6 month period. The cultural themes may be different due to the newness of the problem.
- 4) Repeat the study with adolescents ages 13 to 19 years whose hypertension is not under control (blood pressure above the 95th percentile for age and sex with therapy) to compare with adolescents ages 13 to 19 years whose hypertension is under control (blood pressure below the 95th percentile for age and sex with therapy).

Research Questions for Further Study

- 1) Is the compliance experience less optimal if the adolescent's hypertension is difficult to control?
- 2) Do the self-care activities of hypertensive adolescents in mid-adolescence (ages 15 to 17 years) differ from the self-care activities of hypertensive adolescents in early adolescence (ages 12 to 14 years)? In late adolescence (ages 18 to early 20's)?
- 3) Do perceptions of the health state vary during different stages of adolescence?
- 4) What is the relationship between compliance with antihypertensive therapy in adolescents and the same type of therapy in their parents?
- 5) Are there sex differences in antihypertensive compliance therapy among adolescents, and if so, why?
- 6) Are there subcultural differences in compliance among hypertensive adolescents (e.g., Black vs Hispanic culture)?

APPENDIX A

PERMISSION TO CONDUCT STUDY

THE UNIVERSITY OF ARIZONA COLLEGE OF NURSING
MEMORANDUM

TO: Jean Kamionek

7130 E. 42nd Street, Tucson, 85730

FROM: Ada Sue Hinshaw, R.N., Ph.D. - Jan Atwood, R.N., Ph.D.
Director of Research *ASH* Chairman, Research Committee

DATE: April 8, 1982

RE: Human Subjects Review: "Compliance Among Hypertensive
Adolescents"

Your project has been reviewed and approved as exempt from University review by the College of Nursing Ethical Review Sub-committee of the Research Committee, and the Director of Research. A consent form with subject signature is not required for projects exempt from full University review. Please use only a disclaimer format for subjects to read before giving their oral consent to the research. The Human Subjects Project Approval Form is filed in the office of the Director of Research, if you need access to it.

We wish you a valuable and stimulating experience with your research.

ASH:ss
1982 *ASH*

APPENDIX B
INFORMATION FOR INFORMANTS
(DISCLAIMER)

INFORMATION FOR INFORMANTS
(DISCLAIMER)

You are being asked to voluntarily participate in this interview. By your willingness to be interviewed, you will be giving your consent to participate in this study entitled "Compliance Among Hypertensive Adolescents." It is the purpose of this study to describe those factors in the adolescent cognition that promote compliance with a treatment regimen for hypertension from the adolescent client's viewpoint. It is hoped that the information gained from this study will provide a better understanding to help the health care team promote factors in the adolescent which ensure compliance.

Your right as an informant to anonymity and confidentiality will be respected. You will not be taking any physical risk by participating in this study. All that is required is your participation in three to four 45-minute interviews (taped unless objected to) in a setting of your choice.

Your name will not be used in any notes or on the final draft. You may choose to answer some or all of the questions asked during this interview. You are free to speak your mind and ask questions also. You may withdraw at any time from the interview if you wish. Whatever you decide to do, any care you are under for hypertension will not be affected in any way.

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