**Family's impact on health : a critical review and annotated bibliography / Thomas L. Campbell.**

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# Family's Impact on Health: A Critical Review and Annotated Bibliography

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# Part One

# Family's Impact on Health: A Critical Review

# Introduction

Over the past 25 years, there has been an increasing interest in the role of the family in health. The field of social work has always stressed the importance of the family (Miller and Rehr 1983), but it was not until the late fifties that psychiatry began to recognize the family's influence on schizophrenic patients. This early work was one of the major precursors of the field of family therapy, a field that has flourished with the application of family therapy principles in nearly all aspects of health care. Outside the field of psychiatry, there have been some sporadic and short-lived family approaches to medical care (Richardson 1945), but not until the development of the specialty of Family Medicine in the late sixties did family factors receive much attention in medicine. Family medicine has also flourished, with more medical graduates entering family practice than any other specialty except internal medicine and general surgery (Graettinger 1985). Although the role of the family in family medicine is hotly debated (Merkel 1983; Ramsey 1983), there is the beginning of a collaboration between family medicine and family therapy to develop a holistic and family-based approach to health care.

Both family medicine and family therapy grew and developed primarily as clinical disciplines in response to the fragmentation and subspecialization in biomedicine and the dominance of psychoanalytic theory in psychiatry (McWhinney 1981, pp. 3-9; Hoffman 1981). Both disciplines have sought to provide more effective and comprehensive health care. Except for the study of schizophrenia, there has not been a tradition of research in either field. As a result, family orientation and approach is based primarily on clinical experience and has lacked empirical support. Most of the studies of family factors in health have come from other disciplines including sociology, epidemiology, psychosomatic medicine, and psychology. Over the past decade, the number of family researchers has grown considerably, coming mostly from family therapy research and practice. Family medicine is just beginning to develop a research base and to examine the role of the family.

There are many definitions of "family" (Ramsey and Lewis 1984, pp. 24-25), many of which are broad and encompassing. For example, Ransom and Vandervoort (1973) define the family as a significant group of intimates with a history and a future. However, a clear, concise and more restrictive definition is required for research to ensure agreement as to

which members of a social network are considered family. Gordon (1978) simply defines the family as "the unit made up of individuals a person is related to by blood or marriage and to whom he or she feels ties of social obligation." While this eliminates some relationships that are commonly considered familial, such as an unmarried couple living together, it provides preciseness to the concept for research purposes.

Before considering the evidence supporting that the family has an effect on health, the reasons for studying the family should be examined. One of the basic functions of the family is the physical protection and nurturance of its members. Across all cultures, it is the family's responsibility to safeguard their offspring and supply their basic needs, and thus, the family is likely to have an influence on the health of its members. Health-related behaviors, including diet, exercise, smoking, and alcohol use, are learned and practiced within the family. The emotional development of a child occurs within the family and influences future psychological health.

The family is the most intimate social environment. It is a major source of stress and social supports, both of which affect health. Ten of the top 15 events on the Schedule of Recent Experience (Holmes and Rahe 1967) are family events. The most important source of social support appears to be the spouse, and the death of a spouse has a significant impact on health.

The family is one level of the social environment to which health care practitioners have a direct access. Family medicine and family therapy can intervene directly at the family level.

Despite the increased clinical and theoretical interest in the family, research on the family lags behind most other areas of research. Less than 5 percent of the articles in the literature on families and health are empirical studies. These studies come from very divergent fields and are of variable quality. Each area is working in relative isolation, with little sharing of ideas, concepts, and methodologies. For example, the research on the family and schizophrenia is at least 10 years ahead of the rest of the research on families. Yet problems and mistakes similar to those in the field of schizophrenia are being dealt with in other fields, particularly in studies on the family's impact on physical health. Reliable and valid family assessment techniques developed in one field have not often been applied in other areas. Part of the reason for this is that within the health care field there are still very few researchers whose primary interest and expertise is in studying the family. Most of the studies have been done by researchers specializing in a certain illness who are examining family and other psychosocial factors. A second reason is that there are no broad reviews of the family research literature that have included both physical and mental health.

Most of the existing reviews on the family's impact on health have each considered only one illness, such as schizophrenia (Lukoff et al. 1984), alcoholism (Steinglass and Robertson 1983), or drug addiction (Stanton 1979*b*). The few reviews on the family's impact on physical

health (Chen and Cobb 1960; Robertson and Stewart 1985; Schmidt 1978) have been enthusiastically uncritical and have accepted the results of poorly designed and seriously flawed research. A lack of scientific rigor in evaluating studies may be weakening the credibility of the field of family research.

Researchers, clinicians, and teachers need access to published research on the family. Yet few have the time to read all the studies and must rely on the reviews of others. An annotated bibliography represents a compromise in which detailed summaries allow the reader to make some independent judgment about the studies and methods used. There are to date no annotated bibliographies of family research. Finally, it is often difficult to compare the methods of different studies and assess the validity of their results. Sackett and Haynes (1976, pp. 193-198) developed a methodology rating scale for studies on compliance, which has been adapted here for use with family research. (See pp. 80-97.) The methodology of each study has been scored using this scale.

## Scope of the Review and Bibliography

The relationship between psychosocial factors and health appears to be complex and multifaceted. Physicians, as those who treat physical illness, are reluctant to believe that psychosocial factors can affect health (Angell 1985). Rather, it is assumed that psychological changes occurring during an illness are all the result of a change in health. This prevailing attitude in medicine is the result of at least three factors:

1. It is difficult to empirically demonstrate that psychosocial factors affect health, and many of the studies in this area are of poor quality.
2. The mechanisms by which psychosocial factors affect health are poorly understood.
3. If psychosocial factors are "merely" the result of illness and do not affect health directly, then many physicians would view them as nonessential aspects of their work. Most physicians are not trained to deal with the psychosocial aspects of health care and are more comfortable ignoring them.

Although the relationship between the family and health has not been well studied, there is a general consensus within medicine that illness affects the family and that the family must adapt to the ill family member. Most physicians have observed some changes occurring in families when the breadwinner becomes disabled or dies. Yet these observations have not induced physicians to learn about, assess, or work with families. This aspect of care is often delegated to a social worker or other mental health professional. It is not well accepted that the family, as with other psychosocial factors, affects health. Evidence that family variables affect the onset, course, or treatment of an illness will greatly strengthen the ration-

ale for a family approach to health. Thus, while there appears to be a bidirectional interaction between family and health, this review and bibliography will consider only studies that examine the family's impact on health.

## Methods

It was the original intent to review all the studies on the family's impact on physical health. However, it became clear that the distinction between physical and mental health is arbitrary. (Is depression a mental or physical illness?) In addition, the research on the family and mental health is much further advanced than that on the family and physical health, and concepts and methods have been developed that should be applied to physical illness. However, the research in mental health, particularly schizophrenia, is enormous and the subject of several books; therefore a different strategy for choosing studies was developed. Most of the studies of the family's impact on physical health and compliance have been included, but a more selective approach was used for mental health. A majority of studies on depression, alcoholism, drug addiction, and anorexia nervosa have been included, choosing the more frequently cited and/or the better designed studies. Comprehensive review articles on each of these illnesses also have been included in the bibliography. For schizophrenia, only the most productive lines of research have been selected, along with several review articles. These studies (on expressed emotion and communication deviance) represent the state of the art in family research as well as the best evidence that the family influences health.

The search for relevant studies was conducted in the following manner. A MEDLINE search of the literature published from 1975 to 1985 was done under the headings of Family, Health, Illness, and each of the specific illnesses considered. Unfortunately, articles are not referenced as to whether they are empirical studies or not, and over 1,000 articles pertaining to the family are published each year. Less than 5 percent of the articles selected through the MEDLINE search were primary research studies or reviews of the research on the family and health. References were also obtained from the most recent reviews of studies on each of the illnesses and from prominent researchers in the field. Older research (before 1975) and case studies have been included if they were considered to be influential to subsequent work. Purely theoretical articles or commentaries have not been included. The final list of studies is not complete but represents a selection of the most current and best designed research on the family's impact on health.

The methods of each study were closely examined and scored using a system developed by the author. Each of the following was scored: research design, selection of subjects, family (independent) variable, and

illness or outcome (dependent) variable. This system was adapted from a similar one used by Sackett and Haynes (1976) to rate compliance studies. The summary or overall score very roughly represents the validity of the results of the study, that is, how likely the results are to be true for the sample studied and generalizable to the population from which the sample was taken.

## Paradigms for Studying the Family's Impact on Health

To study the impact of the family on health, it is important to be explicit about the paradigm or model of health and illness that is used. The paradigm chosen partly determines the types of questions asked, the research design, and the family and health variables used. The two most commonly used paradigms are social epidemiology and systems theory.

Social epidemiology is derived from the infectious disease model in which a disease agent(s) infects the susceptible host. A more general epidemiologic model acknowledges multiple disease agents and the role of the environment in affecting the host's susceptibility. The late epidemiologist John Cassel (1976) adapted this model to study the role of social factors in illness. He viewed stress as lowering the host's resistance to disease agents and social supports as buffering the effects of stress. His study with Nuckolls et al. (1972) of stress and social supports in pregnancy offers some support for this model. While there is controversy as to whether social supports merely buffer stress or can act directly on the host and whether one can distinguish disease agents from factors affecting susceptibility, this remains the dominant model for studying psychosocial factors in physical illness.

Systems theory was first developed in the 1940s and 1950s by a biologist, von Bertalanffy (1968), in reaction to traditional scientific methods. He believed that science had become so reductionistic, by breaking phenomena up into extremely small units, that analyses were no longer meaningful. The whole could not be understood by looking individually at each of its component parts, and one had to look at the complex interactions occurring between the elements of any system. Systems theory was adapted by Engel (1977) for use in clinical medicine, and it was called the biopsychosocial model to distinguish it from the more traditional biomedical model. It has received little support in the medical community except in psychiatry and some of the primary care specialties such as family medicine. Bateson (1972) used and developed systems theory to describe human relationships, especially within families. Systems theory has since become the dominant theoretical model in family therapy (Hoffman 1981) and is becoming increasingly used in family research in mental health. However, studying families within a systems framework is

difficult because it requires methods for measuring complex and multidirectional interactions over time.

Several important characteristics affecting family research distinguish social epidemiology and systems theory. Social epidemiology uses a disease model in which the disorder is seen as existing entirely within the patient. Only unidirectional (linear) causality is examined. Very simple and quantitative variables with high reliability are used to measure family (e.g., marital status) and illness variables (e.g., death). A large number of subjects can be studied, and statistical techniques allow one to determine how likely it is that the results are due to chance. Overall, these studies, such as those on bereavement and social supports, have high validity. However, the results tell us little about the complexities of human relationships and families.

In systems theory, the disease model is considered too simplistic and inadequate to explain the complexities of human relationships. Symptoms in an individual are seen as part of the interactions within a dysfunctional system such as the family. Thus, it is essential to examine the multidirectional and sometimes circular interactions that occur in the family system. For example, not only is the effect of the family on alcoholism considered, but also the effect of alcoholism on the family, or the role of alcoholism in the family's interactions. These family interactions are qualitative and difficult to quantify with good reliability. Thus, the validity of many of these studies, which include few families and use less reliable variables, tends to be low. Yet they examine complex phenomena and give us valuable information about human relationships, which may be more useful in clinical practice. Most of human psychology, sociology, anthropology, and clinical medicine is derived from uncontrolled observations.

There is a trade off in choosing social epidemiology or systems theory to study the impact of the family on health. Because of its quantitative methods, social epidemiology allows one to be quite certain (high validity) about simple and discrete relationships (e.g., the effect of bereavement on mortality). Systems theory permits description of complex relationships (e.g., how family interactions affect health) in richer detail but with less certainty (lower validity). One goal of research on families is to combine these two approaches. This requires the development of reliable and validated instruments that measure family interactions and can be applied to large numbers of families. In addition, research designs and statistical techniques that can measure multidirectional interactions over time are necessary. Research on schizophrenia comes the closest to combining these approaches. Reliable and valid measures of parental communication deviance and expressed emotion in families have been used in prospective studies of large numbers of families. In general, studies on the family and physical health need to use more meaningful family variables and consider multidirectional interactions. Studies on the family and mental health should develop more reliable family assessment techniques and incorporate them into prospective studies.

## Research Design

There is a complex and recursive interaction between family and health that is difficult to study. As the family affects an illness, the illness may be changing the family simultaneously. Some radical system theorists argue that attempting to determine cause and effect or the direction of causality is both impossible and meaningless within a systems framework (Dell 1980, pp. 328-329). Yet the predominant belief in medicine is that the observed changes in the family and other psychosocial variables are simply the result of illness. Proponents of the family's influence on health need to demonstrate a causal relationship in the other direction as well.

Case studies are useful for generating hypotheses, which must be tested in controlled studies. The description of a case may be highly influenced by the author's theoretical background or biases. Series of cases are frequently used to demonstrate the effectiveness of a particular treatment. However, without an adequate control group, no conclusions can be made. Only a few case studies are included in this review.

The cross-sectional or prevalence study is a fairly easy and inexpensive way to examine associations between family factors and health. Large numbers of subjects can be examined, thus increasing the power of the study. These studies are particularly good for examining whether certain types of family structure, communication, or interactions (e.g., psychosomatic family) are associated with certain illnesses (e.g., diabetes, asthma, or anorexia nervosa). To determine whether family variables are specific for certain illnesses, control families should include not only normal families but families with other acute or chronic illnesses. For example, while it has been demonstrated that parental communication deviance occurs in normal families and families with psychopathology, it is most commonly associated with schizophrenia. A frequent problem in cross-sectional studies is the overinterpretation of their results. No causal relationships can be determined from these studies. Correlations may be due to the family affecting the illness, vice versa, or a third, confounding variable (e.g., social class, genetics) affecting both.

Prospective cohort (incidence) studies, while expensive and time consuming, allow one to determine whether family factors precede and potentially affect an illness. Studies that attempt to determine the role of the family in the onset or etiology of an illness need either very large samples (e.g., Framingham Study [Haynes et al. 1983], Alameda County Study [Berkman and Syme 1979]) or samples of subjects at high risk for the disorder (e.g., UCLA Family Study [Doane et al. 1981]). Prospective studies of the course or treatment of an illness are much easier to conduct and have been underutilized. Most of the social supports studies use a variant of this design, called a retrospective cohort study, in which data have been

collected prospectively for another study and are reexamined retrospectively. Such a technique allowed Jones (Doane et al. 1981) to assess the affective style of families with disturbed adolescents from videotapes that had been made at the start of the prospective study for another purpose. In a cohort study, it is still necessary to measure and control for potential confounding variables. One confounding variable that is rarely adequately controlled for is the psychological health of the individual family member. For example, several cohort studies have shown that low social supports are associated with increased mortality, even when controlling for physical health and other factors (Berkman and Syme 1979; Blazer 1982; House et al. 1982; Zuckerman et al. 1984). However, in these studies depression or anxiety were not controlled for and could have resulted in both decreased social supports and increased mortality.

Case-control studies offer another technique for examining family factors that precede the onset of illness. Subjects and appropriately matched controls are asked about early family events, such as loss of a parent, or relationships, such as Parker's (1983) "affectionless control." The major problems in these studies are measurement (recall) and selection (matching) biases. The report of previous family experiences is likely to be influenced by the subject's present state of health. The choice of variables to match for is usually controversial, but measures of social class should always be included.

To adequately determine whether a family intervention or family therapy technique is effective, a randomized control trial (RCT) is necessary. Case studies in which the subjects "act as their own controls" are simply not adequate. Unfortunately, RCTs are the most difficult type of study to conduct. Morisky and colleagues' (1983) trial of family involvement in hypertension compliance is an excellent model and the most persuasive evidence for the importance of the family in physical health. An additional problem in studying family therapy is the need for an appropriate placebo or comparison therapy. The best RCTs of family therapy are the Falloon et al. (1982) study on schizophrenia and Stanton and Todd's (1982) work on heroin addiction.

## Family Variables

A wide variety of family variables are represented in the studies reviewed. They can be placed into one of three categories: demographic/structural variables, stressful family life events, or family interaction/functioning.

## Demographic/Structural Variables

Demographic and structural characteristics of the family include those aspects of the family composition that can be directly measured. They include marital status, age of family members, number of children, birth order, ethnic background, and socioeconomic status. They tell us nothing about family interactions or functioning. The family variable most frequently studied is marital status. While it appears to be strongly correlated with health, very little is understood about this relationship. Whether the protective effect of marriage is related to type or quality of relationship between spouses is not known. Do married but separated persons have higher morbidity or mortality than intact families? Chen and Cobb (1960) reviewed the early studies of birth order, number of children, age of parents, and marital status, and they concluded there were few consistent results except for marital status. In more recent studies, these variables have been measured primarily to control for the effects of size and composition of the family.

## Stressful Family Life Events

One cannot examine the effects of any psychosocial factor on health without considering the concept of stress. Even when stress itself is not being measured, it is often considered the intervening variable between between psychosocial processes and illness. Before considering family stress as a variable, the conceptual and methodological problems in stress research will be examined.

Stress is a very useful concept for the lay public, patients, and clinicians because it helps them understand the connections between the mind and the body, or between psychological and organic processes. However, for researchers it poses difficult problems because there is no adequate definition of stress. Stress usually refers to one of three components of what has been called the "stress process" (Pearlin et al. 1981): (1) the stressors—environmental events that impact on the subject (e.g., loss of spouse); (2) the physiological response to the stressors (e.g., flight-fight response); and (3) the health consequences of the stressors (e.g., stress ulcers). Many attempts to define "stress" explicitly have resulted in circular reasoning such as defining stressors as those events that have an adverse effect on the subject. Unresolved conceptual issues include: Can stressors be chronic, unchanging conditions (such as single parenting) rather than events? Must stressors be perceived as undesirable or distressing? Can stress be healthy or growth promoting? Are certain physiological processes specific to the stress process? Attempts to answer these questions within a single definition of stress reveals that the concept is nonspecific when used to describe the relationships between psychological and social processes and health. The research in this field

has progressed sufficiently such that the concept of stress should be abandoned in favor of more specific, definable, and measurable concepts.

Despite the problems with stress research, it offers some significant contributions to the study of the relationship of family and health. The development of the Schedule of Recent Experiences (SRE) (Holmes and Rahe 1967) was a major advance in examining significant life events in a more systematic manner. The scale and its adaptations are perhaps the most frequently used psychosocial instruments in medicine and appear in numerous family studies. There are several methodological problems with life-event instruments, which have been summarized by Cohen (1982). In retrospective studies, there are serious reporting biases. Subjects who have become ill are more likely to remember or report life events than a control group. A study on stress and Down's syndrome, conducted before the genetic nature of Down's syndrome was understood, showed that mothers delivering children with Down's syndrome reported more stressful life events during pregnancy than other mothers (Stott 1958). Some studies have shown poor reliability by test-retest using the SRE (Horowitz et al. 1977; Jenkins et al. 1979). Many of the SRE life events (e.g., weight loss, change in sleeping) can be illness symptoms as well. Potential confounding variables, especially age, sex, and socioeconomic status, are rarely controlled for. For instance, poor families have more life changes as well as more illness due to their poverty alone. Also many of the outcome measures are self-reports of illness rather than objective or reproducible measures of disease. In some of the best studies of recent life events, there is only a small correlation between life-event scores and subsequent illness, with life events explaining less than 5 percent of the variance (Cohen 1982; Rahe 1974). To avoid these methodological problems, the ideal study using recent life events should measure life events prospectively at frequent intervals and exclude any event that may be an early symptom of the outcome illness. In addition, there should be objective confirmation of the reported events, when possible, and objective measures of the outcome variable. Potential confounding variables should be measured and controlled for. Among the studies reviewed, the study of Beautrais et al. (1982*b*) on family stress and childhood illness comes the closest to fulfilling these requirements.

Ten of the top 15 life events on the SRE occur within the family, suggesting that the greatest readjustment is required for family events. These "stressful events" may have the most adverse health consequences and are worth examining. One way to avoid many of the difficulties inherent in studying life events is to choose one event that is easily verifiable. Death of a spouse is at the top of the SRE and has been extensively studied. Bereavement research has its own set of methodological problems, which are discussed in the section on the family's impact on overall mortality.

Divorce is ranked second on the SRE for amount of readjustment, yet there are just a few cross-sectional studies examining its health effects (Carter and Glick 1970; Lynch 1977; Verbrugge 1977). These studies

consistently show an increased mortality rate for all diseases among divorced persons that is higher than that for single, widowed, or married persons. Many of the methodological problems with these cross-sectional studies are similar to those in bereavement studies. In these studies, divorced persons who have remarried are counted as married, and since healthier divorced persons are more likely to remarry, those divorced who remain unmarried may be in poorer health because of this selection bias. In addition, it is known that poor physical health and illness have an adverse effect on marriages (Bruhn 1977; Klein et al. 1968) and can contribute to their dissolution. This complex relationship between the marital relationship and physical health can only be untangled in prospective studies, and no such studies could be found in the literature. One additional problem is that marital disruption, the variable of interest, often occurs chronically over years, and the actual divorce may represent an end to the marital conflict and be a positive experience. Despite these difficulties, there is a need for prospective studies on divorce and health.

**Family Interaction and Functioning**

Systems theorists and family therapists are most interested in studying the interaction of family functioning and the health of individual family members. The most recent studies of family variables and mental health have measured one or more aspects of family functioning. Many of these have used unstructured and impressionistic assessments of the families. Others have developed elaborate assessment devices that lack standardization or tests of reliability or validity. Some of the better assessment tools consider only the marital subsystem (e.g., Marital Adjustment Scale [Locke and Wallace 1959]) or one dimension of family life, such as parental communication (e.g., Family Rorschach [Singer and Wynne 1965]) and expressed emotion (e.g., Camberwell Family Interview [Vaughn and Leff 1976]). Over the past decade, numerous instruments have been developed that attempt to measure the functioning of the entire family, and they are beginning to be used in studies on the family and health.

Two ways of categorizing family assessment methods have recently been proposed. Olson (1985*a*) has described four methodological approaches for studying the family, based on the reporter's frame of reference (insider or outsider) and the type of data collected (subjective or objective). Self-report methods use questionnaires or interviews to obtain a family member's (insider) subjective view of his or her family. This is the most frequently used approach in studying families. Behavioral self-reports depend on a family member (insider) reporting "objective" behaviors of himself or herself or other family members. Observer self-reports depend on an outsider's subjective assessment of the family. Finally, behavioral methods use an outsider to collect objective data about the family. While these methodology characteristics are set up as

dichotomies (insider versus outsider, subjective versus objective), they are meant to be continuums, measuring how involved the reporter is in the family system and how easily the data can be measured and quantified. Unfortunately, the terms suggest an implicit value judgment about assessment methods—that "objective" data obtained by an "outsider" is better than other methods. Olson (1985*a*) emphasized that different research methods offer alternate perspectives on family systems and that one approach is not necessarily more valid than another.

Fisher et al. (1985) have classified family data into three logical levels: individual, relational, and transactional. Family information obtained from an individual without reference to other family members' perceptions are classified at the individual level. They are individual views of the family but are not considered true "family" data. Relational data is obtained when individual responses or scores are "related" or compared with other family members' responses. Fisher et al. (1985) have discussed several ways to create relational data, including calculating means, sums, or differences in scores. Transactional data are obtained from direct observation of family interactions, either at home or in the laboratory, with or without structured tasks. Since most of the family assessment instruments use self-report questionnaires, methods for converting this individual data into relational data are of utmost importance and deserve more study.

Five standardized family assessment instruments have been used in studies of the family and health. The Family Functioning Index (FFI) is a screening instrument that was developed by Pless and Satterwhite (1973) to assess the impact of childhood chronic illness on families and to assist in identifying families in need of help. It consists of 15 questions and includes 6 scales (intrafamily communication, cohesiveness, decision-making, marital satisfaction, happiness, and closeness) as well as overall functioning. Family information is only obtained from the parents. Using the FFI in a study of diabetic families, Grey and coworkers (1980) found that overall family functioning correlated with parental self-esteem but not with diabetic control.

The Family Environmental Scale (FES) is the most widely used family assessment instrument used in the health care field. Developed by Moos (1974), the 90 item true-false questionnaire assesses the social climate of families and focuses on three dimensions: interpersonal relationships, personal growth, and structural organization. The scale includes 10 subscales: cohesion, organization, conflict, control, independence, expressiveness, moral-religious emphasis, intellectual-cultural orientation, active-recreational orientation, and achievement orientation. A separate Ideal Family Form measures how family members would like the family to be. Relational data has been obtained by using the mean and discrepancy scores of spouses (Moos 1976). In families with a diabetic adolescent, Anderson et al. (1981) showed a correlation between poor control of diabetes and low cohesion and high conflict on the FES. One problem with

having 10 subscales is the increase in probability of finding a spurious association (Type-1 error) between the subscales and a health outcome. Studies using this scale should demand a more stringent *p*-value. This problem may explain why the studies using the FES have not demonstrated more consistent results.

The Family Adaptability and Cohesion Evaluation Scale (FACES) (Olson et al. 1978) is a self-report measure based on Olson's Circumplex Model of Family Functioning (Olson et al. 1979). It focuses on three dimensions of family systems: cohesion ("the emotional bonding that family members have toward one another" [Olson et al. 1982]), adaptability ("the ability of a marital or family system to change its power structure, role relationships, and relationship rules in response to situational and developmental stress" [ibid.]), and communication. FACES has undergone extensive testing with large samples of families (Olson and McCubbin 1983), and it has been revised twice. FACES II consists of 30 statements about the family to which a family member responds from the viewpoints of how the family is perceived and how the person would like his or her family to be. Relational data about the family have been derived using numerous combinations of individual family member scores (ibid.). FACES assesses two of the characteristics (enmeshment and rigidity) of psychosomatic families as described by Minuchin et al. (1978) and allows one to examine this concept more systematically. Cederblad et al. (1982) used FACES in a study of diabetic children and found a correlation between both cohesion in the mother and low adaptability in the father and poor control of diabetes. FACES III has recently been developed (Olson 1985*b*), and it appears to be the most carefully designed and tested family assessment instrument presently available. In addition, a direct observation method, the Clinical Rating Scale (Olson 1985*a*), also based on the Circumplex Model, has been developed.

Only one total family functioning measure using direct observations of the family has been used in the family health literature. The Beavers-Timberlawn Family Evaluation Scale (BTFES) (Lewis et al. 1976) uses trained observers to rate 10 minutes of structured family interactions. It is based on the Beavers Systems Model or entropy model of family systems, which conceptualizes family health as the maintenance of a structured but flexible balance between the intra- and extra-family environment. Families are classified into two dimensions: overall competence (healthy, midrange, or severely dysfunctional) and the style of family interaction (centripetal or centrifugal). The BTFES has 13 subscales that measure 5 aspects of family functioning (structure, autonomy, affect, perception of reality, and task efficiency). To maintain good reliability, the BTFES requires extensive training of raters. Steidl et al. (1980) used the scale in a study of dialysis patients. They found that patients who adhered to their treatments (diet and dialysis) and who were in "good" medical condition came from families with an affectionate mood, midrange cohesion, and strong parental coalitions.

The Family Concept Assessment Method (FCAM) (van der Veen 1965; van der Veen et al. 1964) measures a person's perception of his or her family as it presently exists (real family concept) and as it might ideally be (ideal family concept). These measurements are done either by arranging cards that represent different characteristics of the family (family concept Q-sort) or with a multiple-choice questionnaire (family concept inventory). Relational data is obtained by comparing scores among family members (family congruence) and between real and ideal scores (family satisfaction). An overall family effectiveness score is also obtained. Alexander and Dibb (1977) used the family concept Q-sort to compare interfamily perceptions of the families of drug addicts and controls. The addicts and their parents described the addict as more passive and dependent than their ideals.

Two other family assessment instruments that have not yet been used in research on the family and health deserve attention. The Family Assessment Device (FAD) (Epstein et al. 1983) is a self-report screening instrument based on the McMaster Model of Family Functioning (Epstein et al. 1978). It measures six dimensions of family patterns: problem solving, communication, roles, affective responsiveness, affective involvement, and behavior control. The McMaster Clinical Rating Scale is a direct observation instrument based on the same model.

The Card Sort Procedure (CSP) (Oliveri and Reiss 1981) is a behavioral measure of the problem-solving styles of families and is based on the Paradigm Model (Reiss 1981). This model focuses on the shared assumptions held by the family (family "paradigm"), which affects the family's interpretation and interaction with the external world. For the CSP, family members are given a problem to solve both individually and then as a group. The problem involves sorting cards into different groups. The process of card sorting and the final solutions of each individual and the entire family are compared. Three dimensions of family behavior are derived from the data: (1) configuration: the ability of a family to achieve better solutions to problems by working together; (2) coordination: the tendency for family members to develop similar solutions to problems; and (3) closure: how quickly a family reaches a final solution without considering new approaches or information. This is the only family assessment instrument in which an external observer records family behavior in a very objective manner.

It is important but difficult to assess the reliability and validity of these instruments. Forman and Hagan (1983) reviewed six instruments, and each appeared to have reasonably good stability (test-retest reliability) and internal consistency, with little attention paid to validity. As with most such instruments, these studies have been done by the originators of the scales, and attempts to replicate their results have been less successful (Bilbro and Dryer 1981). There have been very few attempts to cross-validate different instruments. Reiss and his colleagues have compared the Card Sort Procedure to both the Family Environment Scale (Oliveri

and Reiss 1984) and the Family Adaptability and Cohesion Evaluation Scale (Sigafoos et al. 1985), and they found no correlations between any of the scales or dimensions, even when they appeared to be measuring the same family attribute. It is not known whether this lack of agreement is a result of the different methods used (self-report versus observation), the concepts being measured, or the tests themselves.

Instruments for measuring family functioning are still at a primitive stage. Of those reviewed, it is not possible to determine which ones are better or more useful for research. Much more work on comparing these instruments is needed, both conceptually to clarify what aspects of the family they are attempting to measure and methodologically, to cross-validate them. At this point, there appears to be little to gain in developing new instruments when more work is needed on existing instruments.

## Outcome Variables

The validities of the health outcome variables used in these studies differ considerably. The use of death as an outcome is limited to epidemiological studies of bereavement and social supports. Most of the other studies use some measure of the severity of an illness as the outcome. It is important that the measurement of the outcome be as objective as possible, preferably done by observers blinded both to the hypothesis of the study and the family variables involved. Myocardial infarction, blood pressure, pulmonary function tests, and hemoglobin $A_{1C}$ levels are objective measures of disease severity. Self-reports of symptoms, such as angina or wheezing, and of illness or compliance are illness behaviors that are subject to influence by family or psychological factors independent of any effect on the disease. For example, anxious subjects from dysfunctional families may report more chest pain without having coronary heart disease. This is a particularly difficult problem in the measurement of compliance. Haynes et al. (1979) have recommended using health outcomes in addition to compliance measures. In a trial of psychosocial interventions to increase compliance in hypertensives, Morisky et al. (1983) measured not only an increase in compliance but a decrease in blood pressure and mortality. A number of family studies use highly subjective and nonstandardized assessments of disease activity. Steidl et al. (1980) used the subjective assessments of the dialysis team to measure compliance with medical treatment and overall functioning. Such assessments are likely to be affected by the raters knowledge of the family situation. Even outcome measures such as number of hospitalizations may be influenced in such a manner. For example, Beautrais et al. (1982*b*) reported that children from families with many recent stressful events were six times more likely to be hospitalized than children from low-stress families. However, an attending physician may have been aware of the high stress that the family was experiencing and decided to hospitalize the

child, thinking that the family could not cope with a sick child at home. Studies in mental health have primarily used standardized psychiatric questionnaires.

Overall there has been insufficient attention paid to methodology in research on the family's impact on health. Too many authors have inferred causal relationships from correlations found in cross-sectional studies. Nonstandardized family assessment techniques or self-reports of illness are used too frequently. The strength of the evidence showing that the family has an impact on health is dependent on the quality of the methods used to study this relationship.

# Family's Impact on Physical Health

## Overall Mortality: Bereavement and Social Supports

All research on the family's impact on overall mortality uses the social epidemiology paradigm. In this model, stress is viewed as detrimental and lowers the host's resistance while social supports are considered beneficial and either buffer the effects of stress or directly raise the host's resistance. While these studies have not always been considered family research, they offer convincing evidence that family factors affect physical health.

There is a large body of literature on the health consequences of bereavement, including several reviews (Jacobs and Ostfeld 1977; Susser 1981) and a recent report by the National Academy of Sciences (Klerman and Clayton 1984). The two major types of studies of bereavement have obtained different results. Cross-sectional or prevalence studies, many of which have used census data, have demonstrated dramatically increased death rates for all causes amongst the widowed. The most famous study of this type was done by Kraus and Lilienfeld (1959) who found that for young widowers the death rates for certain diseases was increased by a factor of 10. There are two major problems with cross-sectional studies of this kind. First, within any age group the widowed tend to be older than the married and have a higher death rate due to age alone. Second, widows or widowers who have remarried are counted as married, and since they are likely to be healthier than those who remain widowed, those who have not remarried will have a higher death rate due to selection alone.

Prospective cohort studies avoid these problems and have generally found much less adverse effect of bereavement with an approximate 50 percent increase in mortality limited to men. Parkes et al. (1969) followed approximately 5,000 widowers for 9 years and compared their mortality rate to the general population matched for age and social class. There was a 40 percent increase in mortality primarily due to heart disease but only in the first 6 months of the bereavement period. A major problem with this and similar cohort studies is choosing an appropriate comparison group. If the bereaved group differs from the comparison group in

some factor that affects mortality (e.g., occupational status, health practices), that factor may confound the results.

In what may be the best controlled study on bereavement at the present time, Helsing et al. (1981) studied a large widowed cohort and a control group matched for age, sex, and residence for 10 years. They found an increase in mortality for both widowed men and women, but when other potential confounding variables (especially smoking and socioeconomic status) were controlled for, the results were significant only for widowers. The increased mortality was not restricted to the bereavement period but persisted throughout the 10 years. They also found that the widowers who remarried had a subsequent mortality rate that was lower than the control group. This could have resulted either from a selection of the healthier to remarry or a protective effect of marriage.

There are three different hypotheses to explain an increase in death rates after the death of a spouse. The first is the concept of homogamy, that the "unfit marry the unfit." Part of marital selection may involve consciously or unconsciously choosing a partner who shares certain traits. If these traits affect health or longevity (e.g., physical disabilities, obesity, smoking, physical activity), the couple may have a tendency to die prematurely or at a similar age. In the Framingham Study (Sackett et al. 1975), most of the coronary risk factors, including blood pressure, cholesterol, weight, and cigarette smoking, had a higher concordance between spouses than expected by chance. The spouses' concordance did not change over the 12-year observation period, suggesting that the similarities were due to marital selection, not shared environment. Marital therapists have described couples as usually sharing the same degree of emotional health or stability.

A second and related hypothesis is that the couple may share an unfavorable physical environment. Environmental pathogens play a major role in many diseases and may be shared within the family. This is obvious in infectious diseases such as tuberculosis but may play a particularly important role in cancer. The family may live near a toxic waste dump (e.g., Love Canal) or one member of the family may bring a carcinogen, such as asbestos, into the home from the workplace. A family tends to eat the same diet, which plays a major role in heart disease and perhaps hypertension. Some aspects of the shared environment can be controlled for (e.g., smoking, place of residence, occupation). An argument has been made that if either homogamy or joint unfavorable environment accounted for the increased death rates of the widowed, the couple should both die of the same cause. Parkes et al. (1969) did find a slight increase in the expected concordance in causes of death in his cohort. This argument supposes that there is a direct one-to-one relationship between a pathogenic factor and a disease when it is known that such relationships are more complex. For example, smoking causes many different illnesses.

The third hypothesis to explain the increase in mortality after the death of a spouse is that the loss of the spouse directly leads to the increase in death rate. The stress and grief of bereavement appears to cause changes in neuroendocrine and psychimmunological functioning, which may lower resistance to illnesses (Bartrop et al. 1977; Schleifer et al. 1983). Studies such as Parkes's (1969) that show an increased mortality limited to the bereavement period support this view of the noxious nature of bereavement. Helsing and Szklo's (1981) finding of persistent effects of the loss of spouse suggests that it may be the loss of social support, emotional or physical, that is harmful. While the acute, versus chronic, nature of the health effects are uncertain, the distinctions between loss of social supports and stress are largely semantic and relate to the difficulties of defining stress.

In summary, there is substantial evidence to show an increase in mortality in men after the death of their spouses. Whether this effect is acute or chronic and whether it is due to shared traits with the spouse or the loss of the spouse is not clear.

While research on stress is declining, both in numbers of papers and influence, social network/support research is growing and has become a major field in itself. The advantages of this research are precisely where studies on stress are weakest. The concept of social networks and social supports can be clearly defined and measured. They can be examined in a prospective manner in which the presence of social supports at one point in time can be correlated with subsequent changes in health, while controlling for confounding variables.

Social supports are defined by Berkman (1984) as "the emotional, instrumental and financial aid that is obtained from one's social network." She further defines social networks as "the web of social ties that surrounds an individual." Social networks may or may not be supportive. Social supports involve a subjective appraisal by the individual of his social network. In most of the research in this area to date, the social variables are very crudely measured and include both social networks (objective measure of social ties) and social supports (subjective perception of the aid received from networks).

There are four major studies that show a relationship between social networks or supports and overall mortality and one study that showed no relationship. All five studies are very similar in design and differ only in the population studied, measures of social networks/supports, and strength of associations. Each is a retrospective cohort study. The major limitation of this approach is that only that information collected at the beginning of the study is available. Thus, measures of social networks/supports must be adapted from the data collected and cannot be designed de novo. This accounts for many of the different measures of social networks/supports in these studies.

It is generally accepted that there is a relationship between social supports and health; that is, persons of poor health have fewer social con-

tacts and social supports than those in good health. One likely explanation for this relationship is that physical illness limits social interaction and leads to both physical and emotional isolation. The task of this research is to demonstrate that social networks and supports also affect health. These studies offer a model for sorting out the interaction between family and health, using prospective studies in which the severity of illness is initially measured and controlled for, and the impact of a family variable, such as family functioning, on the illness is measured over time.

The seminal study in this field was conducted by Berkman and Syme (1979) in Alameda County using the Human Population Laboratory. Each measure of social networks was significantly associated with subsequent mortality in both men and women. Marital status and contacts with relatives and friends were the most powerful predictors. A Social Network Index was derived from all four measures of social ties (marriage, contacts with relatives and friends, church membership, and group associations). The most socially isolated on this scale had an increased relative risk of dying of 2.3 for men and 2.8 for women, compared to the least isolated group.

This study was essentially repeated by House et al. (1982) using data collected for the Tecumseh Community Health Study, and similar but not as impressive results were obtained. In contrast to the Alameda County study, the association between social networks and mortality occurred only in men. Attending church was the only social variable associated with lower mortality. The relationship between a derived Index of Social Relationships and Activities and mortality was not linear. There was a threshold of social relationships above which there was no further protection. There was no relationship between perceived satisfaction with social networks and mortality in this study.

The one major study in this field that failed to show a relationship between social supports and mortality was derived from data collected for the Honolulu Heart Project (Reed et al. 1984). The study was limited to men of Japanese ancestry living in Hawaii. In addition to measuring social supports, the researchers examined chronic stressors, including geographic and generational mobility and sociocultural and spousal inconsistencies. They found no association between any psychosocial measure and mortality at the 7-year followup, even when high stress and low social supports were examined together. Berkman (1984) has suggested that social supports may not be as important in a socially cohesive and well-integrated population, where even the most socially isolated may enjoy considerable social supports. Further studies on social supports and health in other populations and cultures are needed.

Two studies examining the relationship between social supports and mortality in the elderly produced very similar results. As part of the Durham County Aging Study, Blazer (1982) found that the availability, frequency, and perception of social supports were each associated with

mortality. Impaired social supports was the strongest predictor with a relative risk of dying during the 30-month followup of 3.4. The relationship between social supports and mortality was not linear. Zuckerman et al. (1984) examined the impact of religiousness, happiness, and social supports on mortality in a group of elderly poor. The presence of living children was associated with subsequent survival. Happiness and religiousness was associated with reduced mortality only in the elderly in poor health. In neither of these studies was marital status associated with mortality. It appears that for the younger general population, the spouse is the most important source of social support, while in the elderly, children become more important. Perhaps this is because the adverse effect of the loss of the spouse is time limited, and for those who survive the bereavement period, any effect of widowhood becomes too small to detect.

Broadhead et al. (1983) reviewed each of eight criteria for inferring causality between social supports and health (temporality, strength, consistency, biologic gradient, biologic plausibility, coherence, experimental/intervention, and specificity of outcome). They concluded that there is epidemiologic evidence for all of these criteria, except for specificity. Studies suggest that the effects of social supports are not specific for any illness.

The results of these studies provide strong and persuasive evidence that social ties and supports have a major influence on overall mortality and that the family is the most important element of that support. Each study used slightly different measures of social supports. How much of these health effects are due to the presence of social connections (networks) or to the nature and quality of those ties (i.e., social supports) is not known. How social supports affects men versus women needs further study. There is conflicting evidence as to whether the relationship between social supports and health is linear or whether a threshold of support exists above which there is no further protection. Finally it appears that these results do not apply to all populations.

The advantage of the social networks/supports research is the powerful research design: prospective studies with large numbers of subjects, objective measures of outcome, and control of confounding variables with multivariate analyses. The major disadvantage of these studies is the crude measure of family variables. The presence or absence of family members (e.g., marital status, number of living children) and visits with relatives (and friends) are the most important family variables, but they tell us little about the quality or nature of the family interactions. Similar studies need to be done in which family functioning and marital relationships are assessed as independent variables.

## Cardiovascular Disease and Hypertension

In no other physical illness has there been as much attention paid to psychosocial factors as in coronary heart disease (CHD). Because of its high prevalence, particularly in middle-aged men in economically productive jobs, there has been strong interest and a large amount of research on the role of stress in heart disease. Unfortunately, there has been little research on the role of the family. For example, much of our knowledge about the natural history of heart disease comes from the Framingham Study. It has focused primarily on individual or intrapsychic variables, such as anger, depression, and Type-A personality, and it has examined very few family or interpersonal variables. In a Framingham Study of psychosocial factors in CHD (Haynes et al. 1980), a 300-question psychosocial interview with 20 separate scales was administered to 1,600 subjects. Only two questions involving the family (marital dissatisfaction and disagreement) were included, and neither was associated with subsequent development of CHD. In a separate report from the Framingham Study (Eakes et al. 1983; Haynes et al. 1983), the relationship between the incidence of CHD in men and the social status (occupation and education) and behavior type (A or B) of their wives was examined. Men had a higher risk of developing CHD if they were married to women who had more than a high school education and worked outside of the home or had a white collar job. This risk increased if the wife had an unsupportive boss and fewer job promotions. This report suggests that a woman's occupational stress affects the risk of developing heart disease in her husband. Perhaps there is a sharing of stress, such that the supportive husband can help reduce the stress in his spouse but raise his own risk of illness in the process.

There is strong evidence that marital status affects cardiac mortality. Koskevuo et al. (1980) examined all cardiac death in Finland. After controlling for social class and age, unmarried persons had a 3.3 times higher death rate from cardiovascular disease than married persons. The best known research on heart disease and the family was done by Medalie and colleagues (1973*a*, *b*, 1976) in the early seventies. The Israel Ischemic Heart Disease Project was a prospective cohort study similar to the Framingham Study. It followed 10,000 male civil servants over the age of 40 and without evidence of CHD for 5 years to see what clinical and psychosocial variables were associated with the development of CHD (angina and myocardial infarction). No family variables were associated with myocardial infarction (Medalie et al. 1973*a*). The presence of family problems was strongly associated with the development of angina (Medalie et al. 1973*b*), and in a multivariate analysis, it was as powerful a predictor or risk factor as systolic blood pressure, serum cholesterol, or an abnormal electrocardiogram (Medalie and Goldbourt 1976). In men with

high anxiety scores, "wife's love and support" protected against the development of angina.

The finding by Medalie that family problems and spousal support are related to the development of angina (Medalie et al. 1973*b*) but not myocardial infarction (Medalie et al. 1973*a*) could have three interpretations:

1. Since myocardial infarction is much less common than angina, one is more likely to miss a relationship that exists (Type-II error). Men who reported that their "wives did not love them or show their love" may have had a higher incidence of myocardial infarction that did not reach statistical significance.

2. Angina and myocardial infarction may have different risk factors, and there is some evidence to support this.

3. Angina is a symptom, and therefore an illness behavior, and may not correlate well with underlying CHD. Anxious men without spousal support or with family problems may report more chest pain without having more CHD.

In the Honolulu Heart Program (Reed et al. 1983), the relationships between social supports and both the prevalence and incidence of CHD were examined. Unlike the previous two studies, men with CHD were not excluded from entering the study. A social network scale was derived from questions regarding relationships with parents, spouse, children, and social and religious activities. Scores on the social network scale were related to the initial prevalence of CHD but not to the subsequent development (incidence) of CHD. The most plausible explanation for this discrepancy between prevalence and incidence is that CHD results in poor social supports and not vice versa.

The studies on the impact of the family on the course of CHD are more persuasive than studies of CHD incidence. Two studies have examined the effect of family factors on mortality after myocardial infarction (MI). Chandra et al. (1983) followed 1,400 patients for 10 years after their MIs and found that those who were married at the time of their MI had a greatly decreased risk of dying both during their hospitalization and over the next 10 years. The difference was greatest for women. No distinction was made between never married, widowed, and divorced.

Ruberman and colleagues (1984) studied the relationships between several psychosocial factors and mortality after MI in an ancillary study of the Beta Blockers after Heart Attack Trial (BHAT). Their psychosocial questionnaire was designed to measure life stress (including questions about divorce or breakup of the family and violence involving the patient or family), social isolation (including a question on visiting friends and relatives), Type-A personality, and depression. When confounding variables were controlled for, the authors found that both social isolation and high stress were strongly associated with mortality over the subsequent 2 to 4 years, and together they were better predictors of mortality than any of the measured physiologic risk factors (which

included myocardial function or premature ventricular beats). Unfortunately, the reliability and validity of the questionnaire used is unclear, and the questionnaire was only marginally related to family. From this study one can conclude that psychosocial factors affect survival after MI, but the nature of those factors and whether they involve the family is not known.

The only intervention study in cardiovascular disease that involves the family was done with urban poor patients with hypertension at The Johns Hopkins Hospital (Levine et al. 1979, Morisky et al. 1983). The study compared three educational interventions (brief individual counseling, instructing the spouse or significant other during a home visit, and small patient group sessions) in improving appointment keeping, weight control, and medication compliance. Educating the spouse not only improved overall compliance but resulted in significant reduction in blood pressure and in overall mortality. However, all the experimental groups had a significant improvement in each of the outcome measures with an overall 57 percent decrease in mortality compared to the control group. The groups involving education of the spouse tended to do better than the other intervention groups, but the differences were not statistically significant. The family intervention in this study was included after a survey of the clinic's hypertensive patients and indicated that 70 percent expressed the desire for family members to know more about hypertension. This study clearly shows the effectiveness of involving the spouse in the care of hypertensive patients. The family intervention has become incorporated into the routine care of hypertensive patients at The Johns Hopkins Hospital. This study was unable to determine whether the family intervention was significantly better than the simpler 10-minute individual counseling session or whether adding the family intervention to the individual session made a difference.

One potential area for family intervention is cardiovascular risk factor reduction. Hoebel (1976) described a series of patients with cardiac disease who would not change their high-risk behavior (smoking, high-cholesterol diet, lack of exercise, and Type-A behavior). He worked individually with the wives of these patients to show them how they were reinforcing their husbands' behaviors and how they could change it. In seven of nine cases, intervention with the wife changed the husband's behavior. Since most of these behaviors are likely to be affected by the family, it seems probable that simpler family interventions, such as education, may be effective and can be adequately evaluated. Baranowski et al. (1982) conducted a randomized trial of multifamily groups to determine whether they could get families to be more supportive toward changes in the families' diet and exercise. Families in the multifamily group did report more supportive behavior, but changes in diet and exercise were not measured.

Two cross-sectional studies have demonstrated a relationship between family support and compliance with cardiovascular risk reduction

programs. In a study about wives supporting this husband's diet and use of medication, Doherty et al. (1983) found a correlation between spousal support and compliance with a cholesterol-lowering agent. Specific spousal behaviors associated with compliance included "showing interest in the program" and "reminding him about his medicine and diet." The spouse's support also correlated with her belief in the benefits of the medication. This finding suggests that the Health Belief Model should incorporate family as well as individual beliefs. In a less well-designed study (Heinzelman and Bagley 1970), middle-aged men with significant cardiac risk factors were enrolled in an exercise program. Those men who reported a positive attitude by their wives were more likely to complete the program than those whose wife's attitude was neutral or negative.

In summary, there is strong evidence that family factors, particularly spousal support, affect mortality due to hypertension and after MI. The mechanism in CHD is unclear, but in hypertension it appears to be due to increased compliance with medication and weight control. There is only weak evidence to show that the family affects the development of heart disease.

## Diabetes

Type-1 or insulin-dependent diabetes is a chronic disease that often begins in childhood or adolescence. Tight metabolic control of blood sugar appears to prevent or delay some of the complications of diabetes (retinopathy, nephropathy, and neuropathy). However, tight control requires intensive daily adjustments of diet, exercise, and insulin. Most diabetologists recommend home glucose monitoring with up to six measurements of blood sugar and two to three injections of insulin each day. Such a regimen has a major impact on the patient's life and the family environment. The functioning of the family and the psychosocial adjustment of the child or adolescent may affect the ability to adhere to the diabetic regimen. Therefore, one would anticipate that there is a complex interaction between the control of diabetes and the psychological health and functioning of both the diabetic child and the family.

Most of what has been written about the family and diabetes has been descriptive or theoretical, based on clinicians' personal experiences caring for diabetics and their families. While these reports help direct future research, they can introduce significant bias into the literature. For example, White et al. (1984) reviewed the charts of 30 children with poorly controlled diabetes who had undergone a psychosocial evaluation. Most of the families were found to have numerous "dysfunctional" psychosocial factors including absent fathers, poor living conditions, inadequate parental functioning, chronic family conflict, and lack of involvement with the diabetes. The conclusions of this study were that poor

family functioning caused poor diabetic control. However, the study suffers from selection biases, reporting biases, and lack of comparison groups and cannot be used to support these conclusions.

Adequate cross-sectional studies of families of diabetics with comparison groups are necessary to determine if there are any family characteristics associated either with diabetes or with poor diabetic control. Although there are no studies comparing families of diabetics with controls, there are several studies comparing families whose children have different degrees of diabetic control. Anderson et al. (1981) divided 58 adolescent diabetics into groups with good, fair, or poor control based on glycosylated hemoglobin levels, an excellent measure of chronic blood sugar levels. They assessed the families with Moos's Family Environment Scale (FES), completed by both the diabetic child and a parent. Poor control was associated with more conflict and less cohesion among family members, and parents of adolescents with good control encouraged family members to be more independent. In a similar study by Shouval et al. (1982) also using the FES, adequate diabetic control was positively associated with clear order and organization within the family and support by the father and negatively associated with moralizing by family members. Grey and colleagues (1980) studied 20 preadolescent diabetics and their families using Pless and Satterwhite's Family Functioning Index. They found that overall family functioning was associated with diabetic control as measured by 24-hour urinary glucose excretion. The different components of the scale (communication, cohesion, marital satisfaction, etc.) were not specifically examined. They also found that family functioning was closely correlated with parental self-esteem.

These as well as other less well-designed studies provide good evidence that poor diabetic control is associated with family dysfunction, chronic conflict, and low cohesiveness. In most of these studies, poor diabetic control is also associated with poor psychosocial adjustment of the diabetic child or adolescent. While it is likely that an interaction takes place, whereby poor diabetic control affects family functioning, which in turn affects diabetic control, this remains unproven. Prospective studies that control for the degree of diabetic control are necessary to determine the nature of this relationship.

Koski and Kumento (1977) have done the only cohort study of diabetics and their families. They followed 60 diabetic children and their families for 5 years. At the beginning of the study (cross-sectional), they did find a relationship between family functioning and diabetic control. However, they did not examine whether family functioning was related to changes in diabetic control over the subsequent 5 years. They did associate changes in diabetic control (10 improved and 10 worsened) with stressful life events or changes in the family, but this was done in an anecdotal fashion.

Studies by Minuchin and his associates (1975, 1978) at the Philadelphia Child Guidance Clinic have had major influences on the approach to

families with diabetics. They have conducted both experimental studies and clinical interventions with diabetics and their families. Their work began with the observation that beta blockers could improve diabetic control in children in whom emotional arousal appeared to play an important role. An early study (Baker et al. 1969) showed that a beta blocker could prevent the normal rise of blood sugar and free fatty acid (FFA) levels in response to infused epinephrine. In two diabetic girls, similar FFA and blood sugar changes could be reproduced using a stressful interview designed to "reproduce what was viewed as the stressful situation at home." These responses were also blocked with the beta blocker. These two girls received the drug chronically for 1 year and had improvement in their diabetic control.

Work on beta blockers was abandoned when it was discovered that a minority of diabetics responded to it. In their most famous study reported in Minuchin's book, *Psychosomatic Families* (Baker et al. 1974, 1975; Minuchin et al. 1978), the physiological responses of three separate groups of diabetics to participation in a stressful family interview were compared. The psychosomatic diabetics were those in whom emotional arousal appeared to adversely affect their diabetic control. They had a rise in FFA levels during the family interview, which began while observing the rest of the family from behind a one-way mirror and persisted beyond the end of the interview. The parents of these children exhibited an initial rise in FFA levels, which fell to normal when the child entered the room. None of these changes occurred in either the group of "normal" diabetics or diabetics with behavioral problems. The authors suggested that these children have become overinvolved or enmeshed in their parents' problems and respond to the stress with a rise in catecholamines and FFAs, which they cannot "turn off," resulting in diabetic ketoacidosis. By involving the child in family conflicts, the parents were able to reduce their own anxiety, and their own FFA levels decreased.

Unfortunately, the detailed results of this influential study have never been published. The number of subjects studied was very small (seven psychosomatic diabetics), and there was no statistical analysis. It is an important study, however, because it suggests both a direct physiological mechanism whereby family interaction can affect diabetic control and an intervention strategy for working with these families. Most previous work has suggested that the effect of the family is primarily through compliance with the diabetic regimen.

From these studies and their clinical work with families of children with diabetes, asthma, and anorexia nervosa, Minuchin and his colleagues (1978) developed the concept of psychosomatic families. They theorized that for a psychosomatic illness to occur the child must be physiologically vulnerable and involved in parental conflict. In addition, the family must be enmeshed, overprotective, rigid, and conflict avoiding. They reported successful treatment of 15 labile psychosomatic diabetics using structural family therapy. Treatments lasted from 4 to 12 months. The chronic

ketonuria and recurrent hospitalizations for diabetic betoacidosis ceased, and insulin dosages were reduced.

It is important to separate the conceptual model of Minuchin et al. (1978) from their treatment results. Case reports without adequate controls must be viewed with skepticism. In addition, the results may not be related to the conceptual model but due to spontaneous improvement, family education, nonspecific effect of therapy, or the skill and enthusiasm of the therapist. One cross-sectional study of 33 diabetics (Cederblad et al. 1982) supports some aspects of the concept of psychosomatic families. Family functioning in this study was assessed with the Family Adaptability and Cohesion Scale (FACES). Poor metabolic control was associated with high anxiety in the diabetic child and high cohesion (enmeshment) in the father. Tight metabolic control was correlated with low anxiety in the child and high adaptability (low rigidity) in the mother.

Although Minuchin has contributed significantly to the field of "family somatics," most of his work must be considered preliminary and theoretical. Experimental work needs to be repeated with larger numbers of subjects and more rigorous analyses. Empirical confirmation of the concepts of psychosomatic families is necessary. FACES is a particularly useful assessment tool for this endeavor. Finally, controlled trials of family intervention (family education and family therapy) are needed and should be compared with individual interventions (education or therapy).

In summary, several well-designed studies have shown that there is a correlation between family functioning and diabetic control. Poor control is associated with disordered families with a high degree of conflict. There is some evidence to suggest that these diabetic families are more rigid than most families, but the evidence for enmeshment or high cohesion is contradictory. There are no adequate cohort studies on diabetes and the family, and therefore, there is no evidence to show a causal relationship between any family attribute and diabetic control. Minuchin's experimental studies suggest that family stress could have a direct physiological effect on a child's diabetes. There are no controlled family intervention studies on diabetes at the present time.

## Asthma

Asthma was one of seven diseases that were thought to be "psychosomatic," that is, somatic expressions of internal conflicts and unexpressed emotions. Thus, much of the early literature on the psychosocial aspects of asthma was psychodynamically oriented. There is very little research on the impact of the family on asthma.

Dubo et al. (1961) examined the relationships between the quality of family life, the personal adjustment of the child, and the severity of asthma in the child. While there was a strong relationship between the

adjustment of the child and the quality of family life, there was no correlation between either of those factors and the severity of asthma. In an unusual quasi-experimental trial, Purcell and colleagues (1969) studied the effect of the removal of the family on the course of the child's asthma. They assessed that 13 of 25 children studied appeared to have emotionally induced asthma, and they predicted that only those 13 children would improve with the intervention. The families of all 25 children were removed from the home for 2 weeks, and while each child was cared for by a surrogate parent, there was a significant decrease in the severity of asthma in seven (54 percent) of the children predicted to improve and two (17 percent) of the other children. Overall, less than half of the children improved with removal of the family, but without a control group, it is not possible to determine whether the improvement was due to the intervention. The study illustrates the oversimplistic notion that the family is bad for a child's asthma rather than considering the interactions between the family and the asthmatic child.

A major influence on the course of asthma is appropriate responses to acute asthmatic attacks. A prolonged attack is more difficult to treat and may be more likely to require hospitalization than shorter attacks. Early self-management of acute attacks may reduce the severity and overall impact of the illness. In children, early treatment must be done by the family, and the quality of family management may affect the impact on the child, the family, and the health care system. Clark et al. (1981) attempted to improve the family management of asthma in a controlled trial of family education. A randomly assigned group of poor families with an asthmatic child received a series of educational programs on preventing and managing asthma attacks, giving medications, and communicating with physicians. In followup, the educated families reported taking more self-management steps and experiencing less fear during an acute attack. There was a nonsignificant reduction in school absences and emergency room visits in the experimental group.

Minuchin and his group at the Philadelphia Child Guidance Clinic have been influential in the development of a theory for understanding the role of the family in asthma. His concept of psychosomatic families is described in detail under the Diabetes section of this monograph. Unfortunately, there are only care reports and no empirical studies to support this concept in asthmatics. His group did report a series of seven cases of severe asthma that responded dramatically to 5 to 10 months of weekly structural family therapy (Liebman et al. 1974).

The only controlled trial of family psychotherapy for a physical illness was done in the treatment of moderate-to-severe asthma (Lask and Matthew 1979). Thirty-three families with 37 asthmatic children were randomly assigned to experimental or control groups. The experimental group received a total of six hourly family therapy sessions designed to improve the coping skills of the family in dealing with acute attacks. At the end of 1 year, the children in the experimental group reported less

daily wheezing and had a slight decrease in thoracic gas volumes, a measure of lung overinflation, which occurs with chronic asthma. There were no differences in the other measures of pulmonary function. While it is clear that the family therapy improved asthma control, it needs to be compared with individual therapy and simple family education to determine what the essential components of the intervention were.

The studies on the family's impact on asthma are too few and do not yet allow for any general conclusions to be made. However, Lask and Matthew's study suggests that family therapy is an effective in the treatment of asthma. It should serve as a model for future studies on the role of family therapy in physical illness.

## Other Physical Illnesses

Despite the recent interest in psychosocial influences on the development of cancer, there is only one well-designed study that examines any aspect of the family. Horne and Picard (1979) examined psychosocial factors in men undergoing workup for suspicious lung masses. They controlled for numerous confounding variables and found their composite psychosocial scale was 80 percent specific and 61 percent sensitive in predicting subsequent cancer. The two family variables, childhood happiness and marital stability, were not predictive.

One recent case-control study of social factors in ulcer disease examined several family factors. Nasiry and Piper (1983) found that unmarried women had a relative risk of 4.37 of having duodenal ulcers but that family stability and "childhood happiness" were not risk factors. In a study of the family environments of duodenal ulcer patients (Wolcott et al. 1981), there was a correlation between three subscales of the Family Environment Scale (independence, achievement orientation, and expressiveness) and serum gastrin levels, but not severity of ulcer symptoms. The significance of this result is unclear.

Several studies have examined the impact of family stress on childhood morbidity, particularly infections. One of the best known studies was done by Meyer and Haggerty (1962) before much of the research on stress appeared. They followed a group of lower middle-class families in Boston for 1 year and examined what factors were associated with the development of streptococcal pharyngitis. Each family kept diaries of any illnesses and significant life events and were interviewed periodically. Throat cultures were done on each family member every 3 weeks, and antistreptolysin O (ASLO) titers were obtained every 4 months. In addition, the level of chronic family stress was assessed at the beginning of the study. They found that 35 percent of all streptococcal infections were preceded by a stressful event in the family and that families with a high degree of family stress had more strep throats and were more likely to

develop a rise in ASLO titer, which is related to the risk of developing rheumatic fever. Unfortunately, in this study, it cannot be determined when the families recorded their stressful events (before or after the illness), who decided what was to be scored as a stressful event, and whether the subjects and raters were blind to the hypothesis of the study.

Boyce et al. (1977) hypothesized that family routines might buffer the adverse effects of stressful family events. They examined the incidence of all respiratory infections in a day care population over 1 year. When age was controlled for, the children's life-events score correlated with the duration but not the number of respiratory illnesses. Contrary to the study's hypothesis, family routines contributed to the severity of illness, especially in the presence of high stress.

The largest and best designed study on family life events and overall childhood morbidity was conducted in New Zealand by Beautrais et al. (1982*b*). They followed over 1,000 children from age 1 to 4. For each year, mothers recalled significant family life events that were not likely to have been influenced by illness in the child. Morbidity was measured by hospital admissions and physician visits. When race, family size, maternal age, and socioeconomic status were controlled for, both measures of morbidity were strongly associated with life events. Children from families with the highest number of life events had six times as many hospitalizations as children from the families with the lowest number of life events.

Based primarily on this last study, one must conclude that there is reasonably good evidence that significant life events within the family have an adverse effect on the physical health of preschoolers and that this effect appears to be nonspecific with an increase in a wide range of childhood illnesses. In the study by Beautrais et al., it appeared to be the parents' lack of support and supervision that accounted for much but not all of the increased morbidity in the children.

## Pregnancy

Pregnancy is a condition that lends itself easily to studying the effects of family. It is easily diagnosed and there is no variation in the degree of the condition (dichotomous variable). The outcome can be clearly defined and reliably measured. Prospective studies can be done over a short period of time. Obstetrical risk factors that act as confounding variables are well known and measurable. Pregnancy is genera'ly perceived as being stressful, and social supports in the form of the family may potentially buffer that stress and affect the outcome.

Two studies have examined the effects of the family as social supports on the outcome of pregnancy. Nuckolls et al. (1972) found that psychosocial assets, a measure of psychological state and social supports

(including family), was associated with fewer obstetrical complications in women who had high levels of stress both during and before the pregnancy. This finding was in a small (26 subjects) subset of the population studied ($N$=170). In addition, obstetrical risk factors other than parity, age, and social class were not examined.

A similar but better designed study was done by Norbeck and Tilden (1983). They used validated tools to assess life stress, social supports (from friends and family), and emotional equilibrium (anxiety, depression, and self-esteem), and they examined significant obstetrical risk factors. Only when they divided the outcomes into types of complications (gestational, labor and delivery, and infant) did they find that high stress during the end of pregnancy and low social supports were associated with increased complications. However, very little of the variance in the complications was explained by psychosocial factors.

These two studies suggest that social supports may affect the outcome of pregnancy in women who have experienced many recent life changes. The effect appears to be small, and the contribution of the family is not clear.

## Compliance

Many family physicians and health care workers who work with families have argued that a family approach is likely to have its greatest impact on the health of individuals by improving compliance with medical treatments. It is well recognized that compliance is a serious problem, with between 30 and 60 percent of patients not following physicians' recommendations. While in the days of blood letting and purging this may have been adaptive for survival, with more efficacious treatments available, it can have serious consequences.

Theoretically, the family should have a major influence on a family member's compliance. Most medical treatment requires a change in daily behavior that must often be maintained for long periods of time. Yet the physician may see the patient every month or so and is usually not aware of whether the patient is following his or her recommendation. The family is often living with the patient and involved in his or her daily activities. They are in a powerful position to influence that behavior, either negatively or positively.

In an excellent and encyclopedic review of the literature on compliance, Haynes et al. (1979) cited 15 studies showing a positive correlation between the influence of family and compliance, 6 studies showing no correlation, and no studies which show a negative correlation. Unfortunately, the studies are of poor design, and all received low scores on their methodologic ratings. In addition, family influence is 1 of over 250 variables that have been correlated with compliance. Compliance, like other

illness behaviors, is very complex and determined by a multitude of parameters. It is difficult to ascertain which factors correlated with compliance actually play a causal role. By causal it is meant that the variable not only precedes the compliance behavior but, if changed, would result in a change in the compliance.

Most of the studies on compliance and the family are cross-sectional. In a well-designed study of men being treated for high cholesterol levels, Doherty et al. (1983) found a strong correlation between spousal support and compliance with taking a cholesterol-lowering agent. Specific wife behaviors and her beliefs regarding the risks of hypercholesterolemia and the benefits of treatment were also correlated with compliance. One possible explanation of this finding is that the husband's concern about his condition and his compliance affected his wife's support and her beliefs. There is some support for an alternative conclusion from the study, suggesting that the wife's "nagging" about taking the medication was negatively associated with compliance while "reminding" was positively associated with compliance. If the husband was not complying, he was less likely to consider his wife's involvement as supportive and may have viewed reminders as "nagging."

Three less well-designed cross sectional studies on compliance deserve mention. Steidl et al. (1980) examined the relationships between medical condition, compliance, and family functioning in patients on dialysis. They used a fairly reliable family assessment tool (Beavers-Timberlawn Family Evaluation Scale) in which family interactions are rated from a 30-minute videotape. They found that overall family functioning was significantly associated with the medical condition and that specific components of family functioning (strong coalition between parents, close family relationships that respect individuality, and warm affectionate mood) were associated with compliance. Unfortunately, the assessment of medical condition and adherence were very subjective and both were done by the same physicians.

Oakes and colleagues (1970) studied rheumatoid arthritis patients and found a correlation between their use of a hand splint and their perception of their families' expectation that they wear the splint. The study not only used the patient's self-report on compliance but also the patient's perception of the family's attitude. In a study of men with significant cardiac risk factors enrolled in an exercise program, Heinzelman and Bagley (1970) found that 80 percent of the men who described their wives' attitude about the program as being positive had good or excellent compliance with the program, compared to 40 percent of the men who described a neutral or negative attitude on the part of their wives. Again, the participant's perception of spouse's attitude is likely to be biased.

Cohort or case-control studies are necessary to determine whether family variables precede compliance. The study by Doherty et al. (1983) was part of the Coronary Primary Prevention Trial of cholesterol-lowering agents. If the wife's support and beliefs were determined prior to the

start of the trial and were found to be correlated with subsequent compliance by the husband, one could exclude the possibility that it was the compliance itself that affected the wife's support. However, it would not exclude the possibility that other factors (1 or more of the 250 associated with compliance) could account for both the wife's support and the husband's compliance. The health beliefs of the husband, the socioeconomic or educational status of the family, or the family's relationship with their physician might be confounding variables. In a prospective study, any factors known to be correlated with compliance that might affect the spouse would have to be controlled for. There are no published prospective studies on the family and compliance.

The most important study on the family and compliance compared a family educational intervention with two other educational interventions in improving compliance among hypertensives (Morisky et al. 1983). The study was previously described under the cardiovascular section of this paper. This study fulfilled the strictest methodologic criteria of Sackett and Haynes (1976). It was a randomized controlled trial in which the interventions were described in detail and the outcomes included not only compliance (with medication and appointment keeping) but blood pressure and mortality. The results of the interventions were quite dramatic, with a 57 percent reduction in overall mortality for the experimental groups compared to the controls. It is not possible to conclude which of the three interventions was the most effective, or whether combining interventions was superior, but there was a trend toward family intervention having the best results.

A similar study by Earp et al. (1982) examined whether adding family involvement to a home visit improved blood pressure compliance and control. Home visits (an average of five over 18 months) did improve blood pressure control at the 2-year followup, but encouraging a family member to actively participate in blood pressure monitoring did not improve blood pressure control any further. The failure of family involvement to improve blood pressure control may have been due to the short followup period of this study (only 6 months after the home visits stopped). The effect of home visits on compliance has been shown to disappear after the visits stopped, and it was hypothesized that family involvement would prolong the effect. Yet in this study the effect of the home visits did not disappear at 2 years, and a longer followup may have demonstrated a difference.

Clinical trials of family involvement in the treatment of hypertension appear to be the most productive research in the area of family and compliance. Family involvement can include education, encouraging support, or actively involving the family in the treatment process (e.g., monitoring blood pressure or changing the family's diet). These different interventions need to be compared to each other and to similar interventions with the individual patient to be sure that involving the family is making a difference. Family interventions in the home should be compared with

office interventions, which are less expensive and time consuming. Since both of the studies cited were done in clinics with lower socioeconomic populations, similar studies should be done in private offices with a broader mix of patients to improve the generalizability of the results.

## Obesity

Overeating and obesity are thought to be influenced by the social environment in which one eats. Limited but significant success has been obtained by behaviorists who have manipulated those factors that seem to reinforce the eating behavior of obese patients. There have been several intervention trials involving the families of obese patients in the treatment program. Saccone and Israel (1978) improved weight loss in a behavioral treatment program for obesity when the monetary reinforcement for change was provided by a significant other (usually spouse) rather than the therapist. Brownell et al. (1978) were able to demonstrate that the spouse's actual involvement in an obesity program, not simply their willingness to cooperate, increased the weight loss. There was no difference between the groups whose spouses refused to be involved and those whose spouses were willing but were randomly allocated to the nonparticipation group. Pearce et al. (1981) compared different types of spousal involvement in an obesity treatment program. The best results were obtained when the spouse was trained in modeling, monitoring, and reinforcement techniques. The results were nearly as good in the group in which the spouses were instructed simply not to interfere with the treatment program. This nonparticipating-spouse group did better than the group in which the spouses were not contacted at all. This last study illustrates how the family can interfere with a treatment program and how, in some circumstances, limiting the family's involvement can have a beneficial effect.

One must be careful not to assume that family involvement in a treatment program will always be advantageous. Brownell et al. (1983) in a treatment trial of obese adolescents demonstrated the adverse effects of the mother's participation in her child's program. At a 1-year followup after an intensive weight reduction program, neither the obese adolescents whose mothers were actively involved in the program nor the ones whose mothers were not involved lost any weight. Only in the group in which the mothers were involved in their own separate and concurrent group did the adolescents lose weight. Understanding the life-cycle tasks of the adolescent (need for individuation) and the family dynamics in some obese patients (mother's overinvolvement in the child's life) can explain why a mother's active involvement might be harmful. One would expect similar results from the family's involvement in any adolescent's treatment that did not respect the adolescent's need to be independent.

It is important to consider the life-cycle stages when deciding how to study the family's involvement in treatment.

Because of the experimental design of these studies, they offer persuasive evidence for the role of a spouse in the management of obesity. Similar studies can and should be done on the treatment of other maladaptive behaviors such as smoking, inactivity, and Type-A behavior. The role of the family in alcohol and drug abuse will be discussed later.

# Family's Impact on Mental Health

## Stressful Family Events and Mental Illness

The role of stressful life events in precipitating schizophrenia (Dohrenwend and Egri 1981) and depression (Lloyd 1980) has been extensively researched. Most of these studies have found an increase in the number of life events, many of which occur within the family prior to the development of psychiatric illness. The methodologic problems in life-events research in general have already been discussed. However, in mental health research, the problems of retrospective reporting bias, and distinguishing events that are a result rather than a precipitant of illness, are particularly difficult.

Because of the relatively low incidence of major psychiatric illness, prospective studies are difficult and expensive to conduct. To date, all studies of life events and mental illness are retrospective. Patients who develop depression or schizophrenia (usually hospitalized patients) are asked to recall significant life events during a period of time (from 3 months to 3 years) prior to the onset of their illness. Control groups are chosen from the community or general hospital and are matched for age, sex, marital status, social class, and other potential confounding variables. A variety of interview techniques or self-rating scales have been used and may be administered immediately upon admission or after the patient has improved.

The retrospective reporting biases in these studies are inevitable. Patients with psychiatric illness are probably even more likely than those with physical illness to search for some "cause" of their illness in their recent past, something they did or something that happened to them. The popular view of depression is that one becomes depressed because of a loss, either literal or symbolic, and thus, depressed patients will try to determine what it is they are depressed about. In addition, psychiatric illness usually has a profound effect on the thinking processes of patients, perhaps distorting their recall. At the extreme, patients may be psychotic. Some of the recall bias can be reduced by examining events that can be

confirmed by a more objective method. However, other family members may share these same recall biases. Even when the events are confirmed, it is difficult to be sure that the matched controls do not underreport or forget life events that did not seem significant to them at the time.

The second major problem with life-events research in psychiatric illness is determining that the life events precede the onset of the illness and therefore cannot result from the illness. Most psychiatric illnesses, particularly schizophrenia and depression, are chronic with gradual onset and episodes of acute flareups or exacerbations. It is not possible to say precisely when the illness began, for this assumes that one is either well or sick and shifts abruptly from one state to the other. Most researchers try to avoid this problem by examining precipitants of acute flareups, usually the first one, and considering only events that could not be influenced by the patient. Two strategies have been used to determine the independence of an event. Each individual case history can be examined and judged as to whether the events prior to the acute symptoms could have resulted from the patient's actions or preexisting illness (Brown 1974). Such an assessment cannot be made blindly and is subject to the researcher's biases. Another approach is to consider only events that as a class are very unlikely to be influenced by any of the patients (Aneshensel and Stone 1982). There are very few events that fit this category. Virtually all of the events on the Holmes and Rahe scale could result from a change in the patient's behavior. For example, a patient with schizophrenia may exhibit a gradual change in behavior over several years prior to his or her first psychotic break. This change, described as "peculiar behavior" by the family, might result in divorce, loss of job, personal injury, problems with the law, and perhaps even change in the health of other family members. The event most independent of a patient's behavior is the death of a spouse or other family member.

The death of a family member is an intensely distressing event with major impact on the remaining family. Mourning, a period of sadness, grief, and anger, is considered normal but resembles depression in many ways. While the distinctions between mourning and depression are both qualitative (types of symptoms) and quantitative (severity and duration), they are not clear-cut. Several well-designed prospective studies of bereavement (Clayton 1979; Parkes and Brown 1972) have examined psychological symptoms but were not able to determine what is normal grief versus pathological grief.

One unquestionably adverse and abnormal response to bereavement is suicide. Several studies (Bunch et al. 1971; MacMahon and Pugh 1965; Murphy and Robins 1967) have demonstrated that suicide rates of the bereaved are from two to three times higher than matched controls. Widowers appear to have higher rates than widows (MacMahon and Pugh 1965), and alcoholics are at particular risk for suicide during bereavement (Murphy and Robins 1967). Depressive symptoms are very common during the first year of bereavement. Clayton et al. (1974) found that 35

percent of widows and widowers were depressed at 1 month, 25 percent at 4 months, and 17 percent at one year. Paykel et al. (1969) reported that depressed patients had more deaths in their families in the prior 6 months than matched controls. Two other case-control studies (Frost and Clayton 1977; Hudgens et al. 1967) did not find significantly more family deaths in depressed or general psychiatric patients. Studies of psychiatric hospitalization have not demonstrated an increase during bereavement (Clayton 1979).

The bereaved increase their use of alcohol, sedatives, and tobacco, but this occurs primarily in those who were already using these substances (Parkes and Brown 1972). There does not appear to be an increase in somatic symptoms or visits to a physician during bereavement. Widowers suffer more adverse psychological as well as physiological consequences than widows, and the young do worse than the old. Studies do not support the notion that sudden, unexpected losses are more detrimental than those that are anticipated (Osterweis et al. 1984).

One difficulty with studying bereavement is that it is a relatively rare event. Less than 1 percent of the cases in each of these studies had lost a spouse. To find a significant difference in the incidence of adverse effects during bereavement, very large samples of patients are needed. With an inadequate number of subjects, the chance of a Type-II error (falsely concluding there is no difference) is very large. Combining these studies with a meta-analysis would be very instructive.

Although it is likely that major life events, particularly within the family, can precipitate acute and florid psychiatric symptoms in susceptible individuals, the methodological difficulties of life event research are such that they prevent an adequate demonstration of that relationship, except for bereavement. The bereaved are at increased risk for suicide, particularly among young widowers and alcoholics. They have high rates of depressive symptoms, with increased use of sedatives, alcohol, and tobacco.

## Schizophrenia

The study of the family's impact on health began with research on the role of the family in schizophrenia. The field of family therapy developed in the 1950s from the work on schizophrenia by many researchers including Gregory Bateson, Theodore Lidz, Murray Bowen, and Lyman Wynne. This work has been described and reviewed in detail elsewhere (Mishler and Waxler 1965; Hoffman 1981). Over the past 30 years, hundreds of studies on the family and schizophrenia have appeared; however, this review considers only the influence of the family on schizophrenia. The reader is referred to Bernheim and Lehman's excellent review (1985) of the enormous burdens experienced by families due to schizophrenia in a member.

The focus of research on schizophrenia over the past decade has primarily been on the biology and genetics of the disorder. Pooled data on twins show concordance rates for schizophrenia of 46 percent for identical (MZ) twins and 14 percent for fraternal (DZ) twins (Gottesman and Shields 1982). Although this twin evidence and other data from adoption studies clearly demonstrate a strong genetic predisposition underlying clinical schizophrenia, the data also show that genetics cannot explain all of the variance in the development of the disorder. At the same time, family studies have demonstrated that environmental factors contribute to the development and course of schizophrenia. As for other aspects of behavior and illness, the issue is no longer one of genes versus environment, but the interaction of genetic and environmental factors. Clinical observations and experimental studies have demonstrated that schizophrenics are highly sensitive to their environments, especially to stimulus overload and ambiguous stimuli. In schizophrenia research, the family environment has been easier to study than other aspects of the environment, and because of popular beliefs about the importance of child rearing, the literature has no doubt overemphasized the family's role compared to other environmental factors.

Although research on schizophrenia is of major interest to family researchers, psychiatrists, and psychologists, of what interest is it to other health care providers, particularly primary care providers who do not practice family therapy and may not believe that they treat many schizophrenics in their practice? First, most schizophrenic patients in the community are cared for by primary care providers (family physicians and internists) and not by psychiatrists. Research on psychoeducational approaches with the families of schizophrenics has suggested some practical and relatively simple approaches to working with the families of these patients. Second, the research on families and schizophrenia is ahead of other research on families and health. A great deal can be learned from the successes, failures, and problems that this research has faced. The methodologies have become quite complex and sophisticated with the use of carefully developed measures of family functioning, communication, and problem solving in both long-term prospective studies and adoption studies. Yet very little of the progress in this field has been adopted by other family researchers, and family studies in schizophrenia stand in isolation.

## Parental Communication Deviance and the Development of Schizophrenia

Reviewing all the research methods on the family's impact on schizophrenia is beyond the scope of this monograph. The focus is on two lines of research that have attracted considerable attention: the role of parental communication deviance in the development of schizophrenia and the impact of expressed emotion in families on the course of the illness. Method-

ologically, it is difficult to establish convincingly that the family environment contributes to the development of an illness such as schizophrenia. One must show that these factors are (1) associated with schizophrenia, (2) present prior to the development of the illness, and (3) are not confounded by other variables (Reiss 1976). In addition, the family variables must be well-defined and measured by reliable and valid instruments. Prospective studies before the onset of the illness are necessary to demonstrate a causal relationship. However, the onset of schizophrenia is often gradual without clear signs of when it began. Also, schizophrenia is a relatively rare disease (1-percent prevalence), so that selection of subjects at high risk for the disorder is necessary in prospective research. Finally, it is difficult to control for genetic factors, but this is essential for understanding the interaction of genetic and environmental influences. There are no studies that fulfill all of these requirements, but the research on parental communication deviance (CD) illustrates the status of such efforts.

The concept of communication deviance (CD) was developed by Wynne and Singer (1963*a*,*b*; Singer and Wynne 1965) from observations of disturbed and fragmented communication patterns in the families of some schizophrenics. They hypothesized that deviant styles of parental communication contribute to the development of disturbed thinking and communication in genetically susceptible children. They developed a reliable and validated instrument for measuring CD from the parent's individual responses to Rorschach and TAT tests and also in taperecorded interaction of the couple and the family members with one another in standardized tasks (Loveland et al. 1963). The components of CD include lack of commitment to ideas or precepts, ambiguous and disqualified communication of themes or ideas, language anomalies, disruptive speech, and problems in reaching closure about ideas and consensus with others. Cross-sectional studies have demonstrated that parental CD is associated with thought-disordered schizophrenia in an offspring and differentiates those families not specifically, but along a continuum, compared with those families with an offspring having other or no disturbance (Wynne et al. 1977). More recently, Wynne et al. (1982) developed the concept of healthy communication (HC), which reverses the emphasis on dysfunction in the concept of CD. They have shown that parental HC predicts independent measures of school functioning of children more consistently than does CD. Also, even when a parent has had a serious mental disorder requiring hospitalization, the parental communication may be healthy and be associated with healthy cognitive and social functioning of the children.

The association of parental communication deviance and schizophrenia after the illness has developed should not be interpreted to mean a causal relationship. CD may be a genetically transmitted latent trait associated with schizophrenia or it may result from living with and being tested in connection with a serious disturbance of psychosis in a family member. Several prospective studies of offspring at high risk for schizophrenia are underway to determine whether family factors including CD and HC are present prior

to the development of schizophrenia. The UCLA Family Study reported on a sample of 65 families with mild to moderately disturbed but nonpsychotic adolescents, who were followed for 15 years (Doane et al. 1981; Goldstein 1985). The children of parents who had high CD scores were significantly more likely to develop a broad schizophrenia spectrum disorder, which includes schizotypal, paranoid, schizoid, and borderline personalities, as well as schizophrenia. Parental CD was also associated with the development of a schizophrenia spectrum disorder in the siblings of the index adolescent. High CD predicted the narrow schizophrenia spectrum disorders (schizophrenia, schizotypal, and paranoid personalities) with borderline statistical significance. However, the type of initial behavior problem of the adolescent was not predictive of later outcome.

A second large prospective study at the University of Rochester is following the children of parents hospitalized for major psychiatric disorders. None of the children has reached the age of risk for developing schizophrenia, but the initial cross-sectional studies show an inverse correlation between parental CD and the offsprings' level of functioning in a number of settings (Doane et al. 1982). This result suggests that the relationship between parental communication and offspring competence is already present in preadolescence. Most family researchers now conceptualize a complex transactional approach in which the parent and child are continually influencing each other's communication and behavior. Determining the magnitude and direction of these reciprocal influences will require sophisticated research methodologies and studies in which children are followed from a very early age.

## Expressed Emotion and the Course of Schizophrenia

Methodologically, it is much easier to determine the effect of a variable on the course of an illness than on its development or etiology. One does not need to measure the variable prior to the development of the illness. Studies of the family's emotional climate have demonstrated that families can have a positive or negative effect on the course of schizophrenia. Brown et al. (1962) first observed in England that the environment to which schizophrenic patients returned after hospitalization influenced their relapse rate. He studied this phenomenon more systematically (Brown et al. 1972), and his results were replicated by Vaughn and Leff, first in England (Vaughn and Leff 1976; Leff and Vaughn 1981) and then in California (Vaughn et al. 1984). The designs of these three prospective studies were nearly identical, and the results were very similar. From interviews of relatives of schizophrenics conducted shortly after a patient's admission to the hospital, an index of the expressed emotion (EE) of the family was determined. It was derived from both the number of critical comments made by the relatives about the patient and the presence of emotional overinvolvement by the relative with the patient.

All three studies demonstrated that the amount of expressed emotion in the families was the best predictor of relapse during the 9 months to 2 years after discharge. Patients returning to families with low EE had the lowest relapse rate and did not seem to need or benefit from antipsychotic medication. EE was a better predictor of relapse than the initial severity of symptoms, chronicity of illness, or degree of disability. Patients with high EE families had the highest relapse rate, which was reduced if a patient was on an antipsychotic medication or had less than 35 hours per week of contact with his/her family. These studies were interpreted to mean that patients with schizophrenia cannot tolerate the stress of critical comments by overinvolved relatives and that a nonstressful and supportive family environment can protect against relapse and reduce dependence on medication.

The assessment of expressed emotion in families was made indirectly from interviews of relatives without the patient being present. Similar constructs have been assessed directly from family interactions using an affective style (AS) index (Doane et al. 1981). It appears to measure similar family interactions as EE. In the UCLA Family Project (Goldstein 1985), the affective style of families and parental communication deviance additively and independently predicted the later development of schizophrenia spectrum disorders first seen as behaviorally disturbed, nonpsychotic adolescents. AS was a better predictor than EE, and the association of EE with schizophrenia-like disorders disappeared when AS was controlled for.

Despite these suggestive findings in the EE/AS research, other recent studies have questioned the interpretation of the data. For example, one study (MacMillen et al. 1985) found that EE was not a predictor of relapse when the duration of illness was controlled for and suggested that EE was a result of the preadmission duration and severity of illness. Further analysis of the data from this study challenges this negative interpretation (Mintz et al. in press). Also, it is unclear why the EE findings are much more definite when the patient is a young male living in a parental household than an older female in a spousal household. Cross-culturally, there are substantial variations in the frequency of high EE households and in relapse rates. EE is clearly nonspecific for schizophrenia—studies have shown broad applicability to relapse of depression, alcoholism, and obesity (Leff and Vaughn 1985). Thus, the relevance of these principles and measures should not be regarded as limited to schizophrenia. Also, the effects of disturbing emotions on the course of illness should not continue to be limited to family relationships. Peer relationships, work and community settings, and relationships with caretaking staff and professionals all should be considered. Most importantly, the EE concept fails to emphasize or measure the healthy, protective, positive side of psychosocial variables. In the way that HC contrasts with CD, a positive counterpart of EE needs to be studied in both familial and nonfamilial settings.

The results of the expressed emotion studies have stimulated new ap-

proaches in the management of schizophrenia. This research suggests that reducing EE may have a powerful protective effect on the course of schizophrenia and gives leads for specific ways to assist families in providing supportive and nonstressful home environments. Specifically, in families with high EE, efforts have been made to reduce the amount of emotional overinvolvement of famiiy members and the number of critical comments made. These interventions, derived in part from the EE studies, have been tested in three randomized controlled trials. Falloon et al. (1982) compared family versus individual therapy in schizophrenic patients from high EE families. The family therapy was behaviorally oriented and designed to reduce stress in the family and improve problem solving. Patients receiving family therapy had many fewer symptoms and hospitalizations than those receiving individual therapy. In addition, a reduction in negative affect (AS) of families was correlated with fewer relapses (Doane et al. 1985). Leff et al. (1982) designed a package of social interventions to lower expressed emotion in families with high EE and reduce the amount of contact between the patient and family. The interventions included an educational program, a family support group, and family therapy. The families in the experimental group had a reduction in EE or contact with the patient, and the patients showed a significantly reduced relapse rate when compared to the control group.

Hogarty et al. (1986) studied a psychoeducational approach to the families of schizophrenics, in which the goals were to reduce family stress, improve the family's understanding of the illness, and increase social networks for the patients and their families, together with strengthening the individual social skills of the patient. Patients in families who were able to reduce their EE to low, had no relapses, compared to a 40 percent relapse rate in other patients. It should be noted that in all these studies, neuroleptic medication was combined with psychosocial intervention with better outcomes when both approaches were used than either alone.

Although this review focuses primarily on EE and CD as family variables, a considerable number of other variables and family rating scales also are proposed, e.g., Beavers-Timberlawn Family Evaluation Scale (Lewis et al. 1976); Family Adaptability and Cohesion Scale (Olson et al. 1979); Family Assessment Device (Epstein et al. 1978). When the biologic and rearing family members are the same persons, the interpretation of data about either the precursors or course of illness must be viewed as inconclusive. Separately or in interaction, genetic and nongenetic influences may contribute to the results. For example, if one accepts that parental CD precedes the development of schizophrenia, one must consider to what extent genetics is responsible for this relationship. The only way to separate genetic from environmental influence is with adoption studies. Unfortunately, most of the adoption studies have been conducted by biologically oriented psychiatrists, who are primarily interested in genetic influences and have not examined the adoptive family environment. Adoption studies do support genetics as a contributing factor, but

heredity does not completely explain the development of schizophrenia. The susceptibility to schizophrenia appears to be inherited; nongenetic factors ordinarily are necessary to convert this vulnerability into overt, clinical illness. These nongenetic factors may be biologic or psychosocial and the psychosocial factors may be familial or nonfamilial.

The examination of family interaction variables in the adoption studies of schizophrenia have thus far been very limited. Wender et al. (1968) determined the prevalence of psychopathology in the biological and adoptive parents of schizophrenic and normal adoptees. The adoptive parents of schizophrenic offspring had less psychopathology than the biological parents of the schizophrenics, but more psychopathology than the control adoptive parents. Rosenthal et al. (1975) examined the relationship between the quality of the parent-child relationship (as reported retrospectively by the child) and the psychopathology of adopted children. The degree of psychopathology was inversely correlated with the quality of the parent-child relationship. The correlations were weakest in the families where the adoptee's biological parents were schizophrenic. The authors suggest that the influence of the parent-child relationship on the child's mental health is weak for those who have a genetic background for schizophrenia. However, Wynne et al. (1976) assessed, in a blinded fashion, the communication deviance of all the parents in Wender's adoption study, using data provided by Wender. Both groups of parents (biological and adoptive) who reared children with psychopathology scored higher on CD than the parents who reared normal offspring. These data suggest that both genetic and rearing influences may contribute.

Only the Finnish adoption study (Tienari et al. 1985) looked systematically at the family environment to assess the interaction of genetic and psychosocial factors. The preliminary results on 247 adoptive families found that the biological offspring of schizophrenic mothers had a higher prevalence of severe psychiatric diagnoses than the controls, but within each group there was also a significant correlation between dysfunction in the adoptive family and psychopathology of the offspring. For example, none of the biological offspring of schizophrenic families raised in "healthy" adoptive families developed major psychiatric disorders. This finding suggests that a healthy family can protectively buffer against a probable genetic predisposition to the illness. However, it does not mean that family dysfunction causes schizophrenia or that schizophrenia cannot develop in a "healthy" family. The Finnish adoption study is the best evidence to date that the family environment and the genetic vulnerability influence the development of severe psychiatric disorders. However, further diagnostic studies are underway to examine specificity for schizophrenia. Also, more detailed specification of the family rearing variables remains to be carried out. Finally, prospective study of adolescent adoptees and their families before the onset of illness, with followup in adulthood, will be necessary to evaluate whether the rearing family patterns preceded the disturbed or healthy outcome.

In the research on the family's impact on health, the studies on the influence of the expressed emotion or affective style of families on the course of schizophrenia can serve as a model for studies in other areas. The family variable is clearly defined and measured by standardized, reliable measures. Multiple outcome variables are objectively measured. Potential confounding variables are measured and controlled for. Interventions suggested by prospective observational studies have been tested in randomized controlled studies. The results of these studies are not only significant for family researchers or therapists, but also for primary care physicians who care for the majority of patients with schizophrenia. They demonstrate that families can positively influence the course of schizophrenia—and health professionals can help families provide the type of home environment that will reduce symptoms and relapse and improve social functioning. Physicians can use families as valuable resources for the care of schizophrenic patients and develop collaborative relationships (Bernheim and Lehman 1985).

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## Depression

It is surprising that there is such a paucity of research on the impact of the family on depression. Although depression is the most common major psychiatric illness and likely to be influenced by the family, there are no major family studies or family researchers in this field. Pertinent studies are only marginally related to family influence. Perhaps the success of biological approaches to depression, particularly antidepressants, has stifled research into social and environmental factors.

## Early Family Experiences

Psychodynamic theories hypothesize that early life experiences, and particularly losses, may predispose toward later depression. Empirical evidence to support this theory is lacking. Studying early life events occurring within the family is even more difficult than studying recent life events. In a review of the research on the death of a parent during childhood and adult depression, Crook and Eliot (1980) concluded that most of the studies were methodologically flawed and that presently there is no evidence to support this relationship. Studies on the long term effects of early separation from the mother, institutionalization, and adoption have had conflicting results (Bohman and von Knorring 1979; Rutter 1972). In a study of over 2,000 adoptees, von Knorring et al. (1982) found no relationship between the type of care received prior to adoption (by the biological mother, in a foster home, or in an institution) and the subsequent development of psychiatric disorders. Adoptees placed between the ages of 6 and 12 months had a higher incidence of depression than those placed at other ages. Even studies of children of depressed parents have yielded equivocal results. In an extensive review of this literature, Beardslee et al. (1983) found only one well-controlled study. This study (Welner et al. 1977) reported 7 percent of children with depressed parents and none of the control children to be depressed. In a more recent study (Weissman et al. 1984), the children of parents with major depressions were three times more likely to be given a DSM-III diagnosis, especially depression, than

matched control children. However, the children's diagnoses were determined indirectly, without interviewing the child. The extent to which the increased depression is due to genetics versus the family environment has not been determined and requires adoption studies similar to those used in schizophrenia.

One area of research on early family experiences that has been more productive is Parker's work on parental affectionless control. Parker (1979, 1983) has conducted a series of studies of depressed patients using the Parental Bonding Instrument, a self-report measure of parents during the subjects' first 16 years. He found that neurotically depressed patients scored their parents as less caring and more controlling and protective (termed affectionless control) than controls or patients with manic-depressive illness. In a cross-sectional study of students, these same variables were associated with low self-esteem and trait depression and anxiety. Other studies suggest some reliability and validity to this measure of affectionless control (Parker 1981). Depressed patients did not change their assessment of their parents after significant improvement of their condition, suggesting that the measure is not influenced by the psychological state of the responder. Furthermore, mothers' scores of their own behavior correlated with those of their offspring in college. Although questions remain about the validity of this instrument, the concept of affectionless control deserves further study. Conceptually, it appears to be somewhat similar to rigidity and cohesion as measured by Olson's FACES and described by Minuchin. Efforts to compare the Parental Bonding Index with other family measurement devices appear worthwhile.

Studies of early family experiences suggest the presence of a depressed parent and the style of parental rearing may influence the development of depression in later years. No studies have attempted to distinguish genetic and environmental factors.

## Marital Discord and Depression

Several studies have demonstrated correlations between marital discord and depression, usually in women. Most of these studies have been concerned with the impact of depression on the marital relationship (Merikangas 1984). Few have considered the effect of marital problems on depression. Marital problems are the life events that depressed women most commonly report to have occurred prior to the onset of their depression (Paykel et al. 1969). Marital problems seem to persist after the resolution of symptoms in depressed women (Bothwell and Weissman 1977).

Unfortunately none of these studies are able to sort out the nature of the relationship between marriage problems and depression. Two separate questions need to be asked. First, does marital conflict cause or pre-

cipitate depression? Second, does the nature of the marital relationship affect the course or treatment of the depression? Prospective studies are necessary to answer these questions. Rounsaville et al. (1979) found that depressed women with marital disputes had a poorer response to treatment (individual psychotherapy and/or antidepressants) than women who were equally depressed but without marital disputes. Decrease in marital disputes correlated with decrease of depressive symptoms. This study needs replication, and intervention studies comparing individual and couples therapy for depressed patients with marital problems should be undertaken. Studies have demonstrated that marital therapy is more effective than individual therapy for patients with marital problems, most of whom exhibit some degree of depression (Gurman and Kniskern 1981).

## Critical Comments and the Course of Depression

Research on schizophrenia and the family has clearly demonstrated that the family's critical comments and emotional overinvolvement increase the relapse rate of the illness. There has been little comparable research on the influence of the family environment on the course of depression. Bromet et al. (1984) found no difference in the perceived family environment of depressed patients and matched controls as scored on the Family Environment Scale. In Vaughn and Leff's first replication of Brown's work on expressed emotion (Vaughn and Leff 1976), schizophrenic and neurotically depressed patients were compared. In the depressed patients, the number of critical comments made by relatives about the patient was highly predictive of relapse of symptoms. The other components of expressed emotion (hostility and emotional overinvolvement) were not significant. The depressed patients appeared to be much more sensitive to critical comments than schizophrenic patients. Two-thirds of the depressed patients with relatives who made two or more critical comments about the patient during their interview relapsed during the following 9 months, compared to less than one-fourth of those whose families made less than two critical comments. This study suggests that depressed patients are more sensitive to criticism from their family and less affected by intrusiveness and overinvolvement than patients with schizophrenia. Unfortunately, these findings have never been examined further and appear to have been largely ignored. Studies could easily be designed, using the same methods and instruments as those used in the expressed emotions studies, to examine the influence of critical comments by the family on the course of depression. For instance, are relapses influenced by the amount of face-to-face contact with family members or the use of medications? Would interventions designed to reduce family criticism influence relapse rates? This appears to be a potentially fertile area for research.

Over the past 20 years, research on the family and alcoholism has grown substantially. It has evolved from epidemiological studies of the birth order of alcoholics to quite sophisticated studies of family interactions. Most of the researchers have been in the field of alcoholism, but only a few have been family researchers. Steinglass (1976) argues that family therapists have been relatively uninterested in alcoholism because of the difficulty of distinguishing pathological drinking from normal social drinking, the presence of symptoms in the parental rather than the childhood generation, and the discomfort in dealing with intoxicated patients. This appears to be changing as family therapy has broadened its areas of interest.

## Family Factors in the Development of Alcoholism

The number of studies examining the role of family variables in the development or etiology of alcoholism are very limited and have been reviewed in detail by Steinglass and Robertson (1983). Epidemiological studies of the birth orders of alcoholics suggest that last-born children are overrepresented in samples of alcoholics. One theory to explain this finding (Blane and Barry 1973) is that last-born children experience longer periods of dependency, and the resulting conflict over dependency leads to alcoholism. However, Schooler (1972) has argued that these studies are seriously flawed with inadequate control groups in which birth rate, family size, and social class were not controlled. Other studies have examined the spacing and sex of siblings without definitive results. Two studies (DeLint 1964; Koller and Castanos 1969) found that alcoholics have a higher incidence of separation from their parents during childhood than appropriately matched controls. This finding could explain some of the relationship between birth position and alcoholism. The parents of last-born children are older and more likely to die when these children are young. Such parental loss might lead to alcoholism. It is not clear whether the consequences of such a loss are specific to alcoholism or occur in other illnesses as well.

One interesting study by Wolin et al. (1979, 1980) examines the role of family rituals in the transmission of alcoholism from one generation to the next. Family rituals are viewed as a form of communication that helps to develop a sense of family identity. Wolin et al. hypothesized that families preserving their identity in the face of alcoholism were less likely to transmit alcoholism to their children. In a sample of 25 white middle-class alcoholic families, they found that families that changed their rituals to adapted to the alcoholic member had more alcoholic children than families that did not. This study suggests that family interaction patterns

may influence the transmission of alcoholism, but a prospective study is necessary to demonstrate that the changes in rituals preceded the transmission of alcoholism to the next generation.

## Family Factors in the Course of Alcoholism

Most of the family studies of alcoholism are cross-sectional and have attempted to determine whether there are distinctive characteristics of alcoholic families. The results of these studies have been interpreted as demonstrating that the family may help maintain the alcoholism. While such interpretations are not justified from cross-sectional studies, the studies do provide some clues as to the role of the family in alcoholism.

The earliest studies focused on the wife of the alcoholic male. The "noxious wife" theory held that the wife was neurotic, chose an alcoholic husband, and either supported his drinking or "caused" him to drink. There is no empirical evidence to support this hypothesis (Kogan and Jackson 1965). The opposite view (the "stressed wife" theory) was that the wife's behavior was all the result of her husband's drinking. Such simplistic and unidirectional approaches have largely been abandoned, and more recent work has used a family systems approach.

The application of family systems theory to the field of alcoholism has had a major impact on family studies. Systems theory views the family as an indivisible entity with its own set of interactions that help maintain the homeostasis of the system. Alcoholism is seen as having an adaptive function within the family system (Davis et al. 1974). A shift is made from viewing alcoholism as a disease affecting the patient and his family to viewing it as a symptom of disturbed family relationships. Research using this approach has not looked for causal relationships but has described the interactions within alcoholic families, the adaptive role alcohol plays, and the natural history of these families.

Studies of alcoholic marital interactions have largely been conducted in the laboratory. Typically, the alcoholic couple is given a task to accomplish, and communication patterns or problem-solving behaviors are assessed. The results are compared with normal controls (Jacob et al. 1981), disturbed nonalcoholic couples (Becker and Miller 1976), or both (Billings et al. 1979). In some studies, alcohol has been provided to make the interaction more "realistic" (Billings et al. 1979; Jacob et al. 1981). The results of these studies are inconclusive. There do not appear to be any distinctive characteristics of alcoholic couples. In comparison to normal controls, they appear to be rigid and competitive, but they do not appear to differ significantly from other neurotic couples (Jacob et al. 1978; Kaufman 1984)

Steinglass has taken these interaction studies further by observing families in more naturalistic settings, first on home-like research wards in which alcohol was provided and then in their own homes. Steinglass et al.

(1977) hospitalized 10 alcoholic couples for 10 days on a ward designed to be as much like a home as possible with alcohol freely accessible. Two distinct patterns of interaction were observed, one during intoxication and the other during sobriety. By directly observing interactions during the intoxicated state, the adaptive consequences of drinking become more apparent. Some of the couples interacted more or displayed more assertive or intimate behavior during the intoxicated state. Treatment of these couples was focused on changing their interactional patterns. However the followup results of this uncontrolled study were equivocal.

In a more ambitious study, Steinglass (1981*a*) sought to describe the natural history of alcoholic families by periodically observing families within their home over an extended period. Thirty-one middle-class alcoholic families were observed for nine 4-hour sessions over a 6-month period. The Home Observation Assessment Method (HOAM) (Steinglass 1979) was used to code 25 interactional behaviors. These behaviors differed according to the pattern or phase of alcohol use. Families in which the alcoholic drank throughout the 6 months of the study (stable wet) were more disengaged and interacted very little. Families in which the alcoholic was abstinent (stable dry) displayed greater affect and range of content in their communications. They scored midrange in distance regulation or cohesion. Families in which the alcoholic switched from drinking to abstinence or vice versa (transitional) appeared enmeshed with greatest physical closeness and the narrowest range of content in their communications. Steinglass concluded that there are different patterns of family interactions during different phases of drinking. He has developed a "life history model" of alcoholic families that describes the different stages these families pass through (Steinglass 1980).

While Steinglass's work represents a major advance in the methods of observing families and conceptualizing the role of alcohol, the results do not offer empirical support for a systems approach to alcoholism. These studies clearly demonstrate that family interactions change when a family member is acutely intoxicated or is in a chronic drinking stage. Whether this relationship is bidirectional (family interactions affecting drinking, which affects the interactions) or simply unidirectional (drinking affects the family) cannot be determined by these studies. The assessment of the adaptive consequences of intoxicated interactions is subject to observer bias. One study (Jacob et al. 1983) does suggest some advantages of heavy drinking for the family. Jacob compared marital satisfaction in alcoholic couples with different drinking patterns. In steady drinkers, the amount of alcohol consumed (by the couple's report) correlated positively with marital satisfaction. There was no such correlation for the binge drinkers who reported more social problems than the steady drinkers. In some drinkers, heavy drinking may reduce conflicts or increase intimacy and lead to increased marital satisfaction. One needs to be able to demonstrate in prospective studies that family interactions predict changes in drinking patterns, independent of other factors.

## Family Impact on Treatment Outcomes

A simple but powerful research design exists for studying the impact of the family on the outcome of treatment for alcoholism. Family variables are measured prior to treatment, along with other variables known to be associated with outcome (severity of alcoholism, socioeconomic status, occupational status), to determine which variables independently predict treatment outcomes. Bromet and Moos (1977) found that 6 months after treatment, higher cohesion and lower conflict in alcoholic marriages were associated with better outcomes. However, the initial severity of alcoholism was not controlled for, and patients with more severe alcoholism are likely to have more marital conflicts and poorer outcome. A second study by the same group (Moos and Moos 1984) compared the functioning of alcoholic families after treatment with matched control families. The families of recovered alcoholics were not significantly different from the control families, while the families of relapsed alcoholics reported less cohesion and more conflict. Whether recovery from alcoholism affected the family or vice versa cannot be determined. However, Orford et al. (1976) was able to demonstrate that high cohesion between an alcoholic couple was associated with a good outcome, even when other factors were controlled for. These studies suggest that the quality of the marital relationship, particularly high cohesion and low conflict, affects the outcome for treatment of alcoholism.

Steinglass (1976*a*) has reviewed the use of family therapy in the treatment of alcoholism. The types of family treatment include concurrent individual therapy for spouses of alcoholics, conjoint spouse or family hospitalization, multifamily groups, and Al-Anon family groups. Nearly all of these reports are series of cases with high success rates but no comparison groups. Two clinical trials of family treatments of alcoholism have been reported. Cadogan (1973) randomly assigned 40 alcoholic couples to a weekly outpatient multifamily group and a waiting-list control group. Six months after the start of treatment, nine (45 percent) of the experimental groups and two (5 percent) of the control groups were abstinent. Corder et al. (1972) conducted a randomized controlled trial of an intensive 4-day workshop for spouses of alcoholics, which included group therapy sessions, Al-Anon meetings, and alcohol education. Six months later, the alcoholics whose spouses attended the workshop had significantly fewer relapses.

In summary, very little is known about family factors affecting the development of alcoholism, but there is some evidence that family interactions are important in the continuation of drinking. Alcoholics appear to have a higher incidence of loss of a parent during childhood. Maintaining family rituals in the presence of alcoholism may prevent the transmission of alcoholism within the family. Studies of marital interaction indicate that alcoholic couples are not significantly different from neurotic couples. In a more naturalistic setting, alcoholic families exhibit

different patterns of interactions, depending on the state of the alcoholic (intoxicated or sober) and the phase of drinking (wet or dry). A family systems approach to alcoholism is becoming more widely accepted. However, to prove experimentally that drinking can serve an adaptive function for families will be difficult. A healthy marital relationship with low conflict and high cohesion is associated with a good response to treatment. Two controlled studies of family treatments of alcoholism have demonstrated improved outcomes.

## Drug Abuse

Clinical interest and research on the role of the family in substance abuse is a relatively recent phenomenon with few articles appearing in the literature prior to 1970. Traditionally, drug addicts have been viewed as being influenced primarily by their peers and not their families. Studies have focused on the social and cultural aspects of drug abuse. With the growth of family therapy, particularly into areas in which psychodynamically oriented therapy has been unsuccessful, family services or treatment has become part of nearly all drug treatment programs (Coleman and Davis 1978). Research on the family factors in drug abuse is beginning to support some of these approaches.

Most of the research on the family and drug abuse is concerned with heroin addiction. It is not clear how families of abusers of other drugs (e.g., depressants, stimulants, hallucinogens, cannabis) compare with families of heroin addicts. Stanton et al. (1979) has reviewed the research on these other drugs. Kaufman (1980) claims that it is a "myth" that families of drug abusers differ from alcoholic families. This statement is based primarily on the Eagleville study (Ziegler-Driscoll 1979) of drug addicts and alcoholics in treatment. In both groups, there was the same proportion of families of origin (parents and siblings) and families of procreation (spouses and children) and the same incidence of alcoholism in other family members. Similar family dynamics were observed clinically, but not systematically measured, in each group. Rosenberg (1969) compared the family backgrounds of young drug addicts and alcoholics and found them to be very similar with a high incidence of disrupted homes, alcoholism, and mental illness. The alcoholics were young, from a low socioeconomic class, and not representative of the majority of alcoholics. It is important to note that alcoholism and drug abuse usually appear during different stages of the family life cycle. Since drug addiction occurs most often when a young adult is trying to separate from his parents, most family research on addiction has focused on the family of origin (parents and siblings). On the other hand, alcoholism usually occurs later in life, and thus, the marital relationship has been examined most closely.

Two family stressors have been associated with the subsequent development of heroin addiction. When age and socioeconomic status are controlled for, addicts appear to have higher incidence of the loss of a parent (usually father) during childhood (Oltman and Friedman 1969; Rosenberg 1969; Vaillant 1970). Vaillant's studies have demonstrated that drug addiction is more common among first-generation immigrants than second-generation immigrants or immigrants born abroad (Vaillant 1966*a, b*, 1973). Some have hypothesized that the cultural conflicts in first-generation immigrant families lead to family disruption and heroin addiction (Long and Scherl 1984).

Research on the role of the family in heroin addiction has primarily examined patterns of family relationships that exist in addict families. The "typical" family of the male heroin addict is described in the literature as having an overly protective and permissive mother and an uninvolved or absent father with a drinking problem. The addict is described as having low self-esteem and being overly dependent, especially on his mother. While this portrait is mostly derived from impressionistic and uncontrolled clinical reports, there is some empirical evidence to support it.

Studies of family interactions have focused on the mother-addict relationship. Attardo (1965) compared symbiosis and separation-individuation scores in mothers of addicts, schizophrenics, and normal adolescents. The mothers of addicts scored highest on the need for symbiosis, suggesting an overinvolved relationship between the mother and addict. Studies of contact between addicts and their parents demonstrate that addicts maintain close family ties. Between 50 and 75 percent of addicts either live with their parents or have daily contact with them (Stanton and Todd 1982, pp. 427-431).

Several studies have demonstrated that addicts perceive their fathers as weak, uninvolved or absent, and supplying harsh and inconsistent discipline (Eldred et al. 1974; Kolb et al. 1974; Lieberman 1974). Alexander and Dibb (1977) compared interpersonal perceptions within addict and control families and found that addicts were held in lower regard than nonaddicts and thought to be too passive and dependent by the addict as well as the parents. The authors suggested that these perceptions undermined the addict's self-esteem and tended to perpetuate the addiction. Stanton et al. (1979) used projective tests with a large number of addict and control families to compare intrafamily perceptions. Addicts perceived themselves and their fathers as "bad" (worse than controls) but "strong." Mothers of addicts perceived their husbands as "weak," and both parents (mother more than father) perceived their addict son as "far from ideal." Madanes et al. (1980) asked the families of addicts, schizophrenics, and high-achieving controls to describe their family organization and closeness by choosing diagrams of stick figures in different hierarchical positions. Addict family members more often chose diagrams in which the offspring was equal to or above a parent in the diagram and in which there was more closeness across generational boundaries. The

results supported the authors' hypothesis that there is often a reversal of normal hierarchical relationships in addict families and that addicts tend to be enmeshed with their parents. This assessment device (Family Hierarchy Test) appears to capture some of the concepts of structural family therapy and may be a useful device to measure changes during family treatment.

Kosten et al. (1984) used the Family Environment Scale (FES) to compare addict family perceptions with previously established norms. Addicts perceived their families as having less conflict, more organization, and expecting higher achievement. Addicts' mothers and wives also perceived less conflict in their families but not more organization or achievement orientation. When a subsample of addict couples were videotaped and assessed using the Beavers Timberlawn Family Evaluation Scale (BTFES), their conflict score was twice that reported for normal families. This discrepancy between the perceived and observed family interactions suggests that great caution must be used in interpreting self-report assessment techniques. How individuals view themselves and their family is clinically important but may not give accurate information about how the family interacts. Most information about families comes from interviews with individual patients and their families and not from direct observation, except in family therapy. Thus, it is not surprising that research using self-reports by the families of addicts agree with the clinical impressions of these families.

Other than the study of addict couples described earlier, there is only one study that has directly and systematically compared the interactions of addict and normal families. As part of a large and well-designed trial of family therapy in drug addiction, Stanton et al. (1979; Steier et al. 1982) compared the interactions of 61 addict families and 25 carefully matched control families. The families were videotaped while completing several structured tasks (the Wiltwyck Battery) primarily involving problem solving and conflict resolution. The videotapes were rated for 17 interactional variables in a blinded fashion. The addict families interacted in a more rigid and stereotypic manner, with more frequent side taking and interruptions, mostly by the father. These families exhibited more conflict, usually between the addict and the mother. During problem solving, the mother of the addict was more dominant than the control mothers, while the addict was more distracting. This study of observed family interaction supports the notions that addict families are more rigid and conflictual and that the mothers assume the most active role in the family.

Based on their work with addicts at the Philadelphia Child Guidance Clinic, Stanton et al. (1978) proposed a family systems formulation of heroin addiction. They viewed the addiction as serving an important homeostatic function within the family that maintains the symptom. These families were seen as being stuck at the leaving-home stage of the family life cycle. The parents' overinvolvement with the addict's problems

focused attention away from the marital conflict. The addiction allowed the adolescent to appear independent within his or her peer group, while remaining helpless and dependent on parents. Stanton et al. has termed this process "pseudoindividuation." As discussed previously, a systems approach offers appealing explanations of how an apparently dysfunctional symptom is supported and maintained by the family. Unfortunately, this is difficult to validate experimentally. It is easy to observe the adaptive consequences of a symptom, but one needs to demonstrate that changing the symptom, without changing the family, results in adverse or maladaptive effects on the family.

To assess the effectiveness of family intervention in the treatment of drug abuse, one needs a randomized controlled trial comparing family therapy with either individual treatment or an adequate placebo. Only two such studies exist in the literature. Ziegler-Driscoll (1977) randomly assigned 79 drug addicts and alcoholics who had completed an inpatient treatment program to two different family treatment groups and a control group. At the 6-month followup, there was no difference in abstinence among the three groups. However, therapists involved in the study had little experience in family work. Stanton and Todd (1982) allocated 215 addicts in a methadone treatment program into 4 groups: (1) a control group that received individual treatment only, (2) a paid family therapy group, (3) an unpaid family therapy group, and (4) a group whose families were paid to attend weekly movies together. Family treatment was based on a structural/strategic approach and lasted for only 10 sessions. Standardized family assessments were made before and after treatment. One year after treatment ended, the family treatment groups were using less illegal drugs and alcohol, with the paid family therapy group having the best results. There was no difference between groups in the percentage of days working or going to school. As is typical of most drug abuse studies, there was a high dropout rate in both the family (30 percent) and the nonfamily (37 percent) groups. An additional 20 percent of the family groups refused family treatment and were not included in the outcome data. However, these "refusers" did not differ from the nonfamily group on any of the demographic variables, and exhibited more factors associated with a good prognosis than the remaining family group. Stanton et al. (1979) also reported significant changes in the family interactions of the family therapy groups. In the families with good outcomes (less drug use by the addict), the attempted interruptions by other family members during structured tasks were less successful. The frequency of disagreements decreased, and the fathers became more involved. Other than the high dropout and refuser rates, this study should serve as a model for evaluating family interventions. It uses a sophisticated experimental design with multiple outcome measures, which included changes in family interactions.

In summary, research supports the concept that families of addicts perceive themselves as different from nonaddict families—fathers as pas-

sive and uninvolved, mothers as overinvolved with the addict, and the addict as dependent with low self-esteem. Interactional research supports parts of this concept (dominant mother, distant father, and rigid interactions) but disputes some perceptions of these families (high levels of conflict observed but not perceived by family members). One study suggests that family therapy is more effective than individual therapy in the treatment of heroin addiction.

## Anorexia Nervosa

Many clinicians and researchers acknowledge the importance of the family in the etiology and course of anorexia nervosa. Family therapy, in combination with individual therapy and medical care, has become an accepted approach for treating this disorder. Despite widespread acceptance of the role of the family, there is very little empirical evidence to support it. Most of the research on families with a member who has anorexia nervosa is anecdotal, and there are no prospective studies or intervention trials.

The "typical" anorexia nervosa family is described in the literature as upper middle class and highly achievement oriented with excessive preoccupation with exercise and physical appearance, especially slimness. Outwardly, they appear to be healthy families with no overt conflict, but closer examination reveals chronic marital difficulties with poor communication, unexpressed hostility, depression, and sexual problems. The parents' energies are focused on the child rather than the marriage, leading to emotional overinvolvement in the child's life, usually by the mother. Symptoms often develop when the child threatens to leave home. The illness allows the child to feel a sense of self-control over his or her own body and assert individuality, while remaining the focus of the parents' concerns at home. Presently, there is very little empirical support for this conceptualization.

Garfinkel and Garner (1982) have reviewed studies of the demographic characteristics of families with anorectic members. While there are problems with diagnostic and referral biases, this illness appears to be more prevalent in the upper social classes, but it is becoming more equally distributed across all social classes. Studies consistently show that parents of anorexics are older than parents of same-age controls. Some have suggested that such parents may be more rigid or have higher expectations than younger parents. However, none of these studies have controlled for social class, which is known to be associated with delayed childbearing. Religious affiliation, family size or composition, and birth order do not appear to distinguish these families from the normal population. Studies on the prevalence of separation and divorce in anorexic families are contradictory.

Anorexia nervosa does appear to "run in families." Sisters of anorectics are at a significantly higher risk of developing the illness (Garfinkel et al. 1980). The extent to which this is genetic versus environmental is not known. There are no adoption studies involving anorectics, and less than 40 cases in twins have been described in the literature. While there appears to be a higher concordance rate among the monozygotic than the dizygotic twins, the numbers are too small to make any conclusions. Overall, there does not appear to be an increased prevalence of physical or psychiatric illness in the parents of anorexics, although several studies (Cantwell et al. 1977; Kalucy et al. 1977; Winokur et al. 1980) have shown higher rates of depression in the parents and siblings of anorectics than in families of normal adolescents.

Most of the studies of attitudes and interactions of families with an anorectic member are uncontrolled and impressionistic. In addition, they are cross-sectional studies that examine families who have been living with anorexia for months to years. Parental conflict is commonly observed and assumed to have been present prior to the onset of the illness. Yet living with a child who is starving himself or herself and not knowing how to respond—whether to intervene, threaten, or ignore—is likely to provoke marital disagreement and conflict. While several studies of these families have observed preoccupation with food (Crisp 1967; Kalucy et al. 1977) or physical exercise (Kalucy et al. 1977) and a high prevalence of maternal obesity, they have all lacked adequate control groups for comparison.

Probably the most influential family theorists and therapists in the field of anorexia are Minuchin and Selvini Palazzoli. Both use family systems approaches and focus on those family interactions that help maintain symptoms. Minuchin et al. (1975) suggested that these families share four characteristics with other "psychosomatic families": (1) enmeshment, (2) overprotectiveness, (3) rigidity, and (4) lack of conflict resolution. In addition, the child must be physiologically vulnerable and involved in the parental conflict for the development of anorexia. Minuchin describes these observations of anorectic families in his book, *Psychosomatic Families* (Minuchin et al. 1978), but the details of his results have never been published. Selvini Palazzoli (1974) observed similar interactions in the anorectic families in her study and emphasized the lack of leadership, covert coalitions, self-sacrifice, and facade of unity. There are no published studies that systematically examine these variables in the families of anorectics.

The results of one study provide some support for a systems approach to anorexia nervosa by suggesting that the symptoms serve an important function for the entire family. Crisp et al. (1974) measured the psychoneurotic state of parents before and after in-hospital treatment of the anorectic child and compared it to a control group. There was no initial difference in psychopathology between the parents and controls, but the parents of anorectics had increased psychopathology after their anorectic child gained weight. While this may have resulted from the removal of

the symptom, it could also have been due to anxiety over hospital discharge and their child's return home.

Despite the acceptance of family therapy as a treatment choice for anorexia nervosa, there are no clinical trials comparing family therapy with other treatments or even with no treatment. The success rates for treating anorexia nervosa using family therapy range from 50 to 90 percent. These case series differ on their selection of patients, type and length of family therapy, skill of the therapists, use of other modalities, criteria for success, and length of followup. Liebman and colleagues (1983) used structural family therapy and reported successful treatment in 84 percent of the patients (N=53), most of whom had failed with previous treatments. However, all uncontrolled studies of treatment outcomes must be viewed with caution. Randomized controlled trials comparing family therapy with other treatment modalities are desperately needed.

In summary, most of what we know about the families of patients with anorexia nervosa comes from uncontrolled reports and are subject to numerous biases. While it is clear that there is no "typical" anorectic family, some patterns of family interactions appear to be more common. These families need to be studied using reliable and validated family assessment devices. In particular, cohesion, adaptability, communication, and family structure should be focused on. The severity, duration, and type (bulimic versus restrictive) of anorexia and the age of the patient need to be controlled for. These families should be compared to "normal" families as well as other families with chronic psychiatric and physical illnesses. Only prospective studies of families at high risk will be able to determine whether these family characteristics preceded the development of the illness. Prospective studies of families with anorectic members could determine whether certain family characteristics have prognostic significance or family interactions change with treatment. The role of the family in anorexia nervosa is a potentially rich, but largely unexplored area for research.

# Summary

## Conclusions

Based on this review of the family's impact on health and illness, the following conclusions can be made:

1. Studies of the family's impact on physical health are primarily derived from the social epidemiology model and view the family as a source of stress or social supports. Only in studies of diabetes have family interactions been examined. One controlled trial of family therapy in asthma (Lask and Matthew 1979) demonstrated a small effect on pulmonary function.

2. Marital status and support by the spouse are the most potent family factors affecting overall mortality and cardiovascular disease. Bereavement is associated with an increased risk of death in widowers. Family support, especially by the spouse, has a protective effect that is not specific to any disease process.

3. Simple family interventions, such as involving the spouse in the care of a hypertensive patient, can have a major impact and have been demonstrated to lower overall mortality. In hypertension the effect of family involvement is primarily due to increased compliance with antihypertensives and diet.

4. At present, there is no evidence to demonstrate that any family characteristics are associated with any specific physical illnesses. Empirical support for the concept of "psychosomatic families" is lacking. Whether some physical illnesses are more influenced by family processes than others is also not known.

5. Poor diabetic control is associated with chronic family conflict and poor organization, but studies disagree as to whether these families have low or high cohesion. While most studies of diabetic families conclude that poor control is due to lack of compliance with insulin and diet, Minuchin's experimental work suggests that family interactions may have a direct effect on metabolic control.

6. A significant correlation between family support and compliance with medical regimens has been demonstrated in cross-sectional studies

only. Involving family members in the treatment of obesity helps maintain weight loss.

7. General systems theory has become the dominant paradigm in research on families in mental health. Patterns of family interactions have been associated with particular psychiatric illnesses.

8. Parental communication deviance is common in schizophrenic families and precedes the onset of florid symptoms. Adoption studies demonstrate an interaction between genetic factors and the family environment in the development of schizophrenia.

9. Studies of expressed emotion (EE) in families of schizophrenics offer the best evidence that the family has an impact on health. The amount of EE in these families is the most important prognostic factor for relapse of schizophrenia. Family therapy can affect the number of critical comments and emotional overinvolvement by the family (components of EE), prevent relapse of symptoms, and reduce the need for hospitalization. Antipsychotic medication and limited contact with the family are protective for schizophrenics from high EE families.

10. Depressed patients are very sensitive to criticism by their families, and frequent critical comments by relatives are associated with high relapse rates. Marital discord frequently accompanies depression and may influence its treatment.

11. The interactions in alcoholic families are highly variable and depend on whether the alcoholic is in an abstinent (dry), drinking (wet), or transitional phase of the illness. Within the drinking phase, interactional behaviors change during periods of intoxication. Observations of intoxicated behavior serving an adaptive function for the family are anecdotal and have not been studied empirically.

12. The families of heroin addicts are characterized by rigid interactions between a dominant and overinvolved mother, a distant and passive father, and a dependent and addicted child. Family therapy may be more effective than individual therapy in the treatment of drug addiction.

13. No patterns of family interactions or relationships have been empirically demonstrated to be associated with anorexia nervosa.

14. Each area of research on the family and health is working in relative isolation, with little sharing of theories, methods, or clinical approaches.

## Recommendations for Future Research

1. More attention should be paid to the methodology of family studies.

a. Cross-sectional studies should compare the families with specific illnesses with both "normal" control families and families with other chronic illnesses.

b. Prospective studies should be utilized to show that family factors precede both the development of an illness and changes in the disease processs.

c. The efficacy of family treatment can be demonstrated only in randomized controlled trials. Simple family interventions, such as education and family support, and individual interventions should be compared with family therapy.

2. In family studies, potential confounding variables must be controlled for by matching controls or multivariate analysis. Important confounders include age of patient; stage of the family life cycle; socioeconomic status; severity, length, and stage of illness; and psychological health of the individual patient.

3. Family assessment techniques require further development. Attention should be given to self-report methods as well as direct observation methods, and the results of these two approaches should be compared. Existing scales should be cross-validated and used more in existing studies. Subjective and impressionistic family assessments should be discouraged in research.

4. Concepts and assessment techniques developed in one field should be adapted to studying other illnesses. For example, expressed emotion should be studied in families of depressed patients or families with anorexia nervosa. Using Madanes's Family Hierarchy Test in families of diabetics, asthmatics, and anorectics might help in our understanding of the structural characteristics of these families.

5. Epidemiologic studies of family factors in physical health need to measure more meaningful family variables. Attempts should be made to incorporate self-report instruments such as FACES or FES into ongoing prospective studies. The study of psychosocial factors in the Beta Blocker after Heart Attack Trial (BHAT) (Ruberman et al. 1984) is a good example of this piggy-back technique.

6. Studies of families using a systems approach are limited by existing research methods, which were developed from the epidemiologic model. Techniques that allow multidirectional interactions to be studied over time need to be developed.

7. Because of the difficulties in demonstrating that family factors precede the development of an illness, research should be focused on the impact of the family on the course and treatment of illness. Studies in schizophrenia have demonstrated the difficulty of separating genetic and family-environment influences.

8. Studies on the impact of the family on the development of illness need to examine the interaction of genetic and environmental (family) factors.

9. Research on the mechanisms by which the family influences health needs to be expanded. New techniques in psychoimmunology and neuroendocrinology should be incorporated into family studies. Collaboration with the field of psychosomatic medicine is essential.

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# Part Two

# Family's Impact on Health: Methodology Ratings

# Methodologic Evaluation of Research

## Introduction

Studies are frequently judged more by their results (whether they support an argument or position) than by the quality of their methods. Advocates of a family approach to health care often quote studies that show a significant impact of the family on health but that have serious, and occasionally fatal, methodologic flaws. Studies are only as good as the methods used to perform them. The validity of the results of a study is dependent on the investigator's research design, the selection of subjects, the measurement of variables, and the control for biases.

No studies are perfect, nor are all faults equal. To assess the methods of a study, it is helpful to have a set of methodologic standards that can be used in an objective and reproducible manner. Fortunately, Sackett and Haynes (1976, pp. 193-198) have developed such a system for assessing compliance studies, and they have applied it to over 200 studies. These standards have been adapted (by the reviewer) with several changes for use in the following evaluation of family studies. The description of the therapeutic regimen and the compliance measures have been replaced with specification of the family (usually the independent) variable and the health (usually the dependent or outcome) variable. Twenty studies were scored by three independent raters, and the results were very similar. The remaining studies were rated by the reviewer.

As with the Sackett and Haynes standards, the methodologic profile of each study can be used in several ways. The overall score roughly reflects the quality of the study methods and, therefore, the validity of the results. Validity is a measure of the certainty that the results are true for the population studied (internal validity) and generalizable to similar populations (external validity). The scores for individual categories provide some description of the study methods. Using the tables that follow, one can quickly select all of the cross-sectional studies or all of the studies using more "objective" measures of family variables. The summaries of the scores provide a way to compare a single study with the remaining studies.

Caution must be used in interpreting the methodologic scores. They represent a simplification of the methods of a study and do not reflect the difficulties involved in conducting research on the family and health. Some of the limitations of these studies were unavoidable. In addition, a flaw in one aspect of a study's methods may invalidate the results without being reflected in the overall score. The following tables should be used as an overview of the research on family and health and a guide to the annotations. The original studies should be consulted whenever possible.

## Abbreviations

| | |
|---|---|
| AS | Affective style |
| ASA | Aspirin |
| alcoh. | Alcoholic |
| BP | Blood pressure |
| BTFES | Beavers-Timberlawn Family Evaluation Scale (Lewis et al. 1976) |
| CC | Case-control study design |
| CD | Communication deviance |
| CHD | Coronary heart disease |
| CXR | Chest x-ray |
| corr. | Correlated |
| depr. | Depressed, depression |
| diab. | Diabetic |
| EE | Expressed emotion |
| FACES | Family Adaptability and Cohesion Evaluation Scale (Olson 1978) |
| FES | Family Environment Scale (Moos and Moos 1982) |
| FFAs | Free fatty acids |
| FFI | Family Functioning Index (Pless and Satterwhite 1973) |
| fam. | Family |
| JRA | Juvenile rheumatoid arthritis |
| MD | Medical doctor |
| MI | Myocardial infarction |
| m-depr. | Manic-depressive |
| MS | Marital status |
| N.C. | North Carolina |
| PBI | Parent Bonding Index (Parker et al. 1979) |
| PFT | Pulmonary function testing |
| psych. | Psychological |
| quasi-exp. | Quasi-experimental design |
| RR | Relative risk |
| schiz. | Schizophrenic |
| SRE | Schedule of Recent Experiences (Holmes and Rahe 1967) |

# Scores and Methodologic Standards for Family Research

(adapted from Sackett and Haynes 1976)



## Research Design

5 Randomized controlled trial.

2 Analytic (cohort, case-control) or quasi-experimental trial.

1 Descriptive (cross-sectional).

0 Case reports.

## Subjects and Selection

3 Random population sample (three or more hospitals or clinics).
Regional program/referral center.

2 Single clinic with adequate demographic description (at least three of following: age, sex, marital/family status, socioeconomic status, or race).

1 Single clinic without adequate demographic description.

## Specifications of Family Variable

3 Demographic (marital status, number of children).
Previously validated family scale (FACES, FES).
Well-described intervention (could be replicated).

2 Explicit questions about family (social supports).
Structured interview of family.
Incomplete description of intervention (structural family therapy).

1 Unstructured interview of family.
Subjective assessment of family.

0 Family variable not described.

## Specifications of Outcome (Health) Variables

3 Directly and quantitatively measured (e.g., death, MI, hemoglobin $A_{1C}$ count).

2 Standardized indirect measurement of disease activity or severity (standardized symptom reporting).

1 Subjective or self-reported nonstandardized assessment of disease severity (MD assessment of diabetic control).

0 Disease measure not reported.

**Overall Methodology Score (0-14)**

Excellent (10-14).

Good (8-9.5).

Fair (6-7.5).

Poor (2-5.5).

## Ratings of Research on the Family's Impact on Illness

| Study | Research design | Followup period | Subjects and selection | Family variable | Outcome variable | Overall score | Results |
|---|---|---|---|---|---|---|---|
| | | | **Overall mortality** | | | | |
| *Bereavement* | | | | | | | |
| Clayton 1974 | (2) | 1 yr | 109 bereaved (3) | Death of spouse (3) | Death/morbidity (3/2) | 10.5 | No increased mortality or MD or hospital visits/ depressive symptoms decreased |
| Cox 1964 | (1) | — | 60,000 widows (3) | Death of spouse (3) | Death (3) | 10 | Mortality highest in 2nd and 3rd yr of bereavement |
| Helsing 1981*a,b* | (2) | 9 yr | 4,032 (3) | Death of spouse (3) | Death (3) | 11 | Increased risk for widowers only (not limited to 1st yr) |
| Kraus 1959 | (1) | — | U.S. population (3) | Death of spouse (3) | Death (3) | 10 | RR=1.46x overall/RR=5-10x for young men |
| Rees 1967 | (2) | 6 yr | 377 (3) | Death of spouse (3) | Death (3) | 11 | RR=12x for bereaved in 1st yr |
| Young 1963 and Parkes 1969 | (2) | 9 yr | 4,486 men (3) | Death of spouse (3) | Death (3) | 11 | 40 percent increased mortality in 1st yr only |
| *Social supports* | | | | | | | |
| Berkman 1979 | (2) | 9 yr | 6,928 (3) | MS/contacts with relatives (3/2) | Death (3) | 10.5 | RR=2.3 for most isolated men, 2.8 for women/MS was most important factor |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Blazer 1982 | (2) | 2 1/2 yr | 331 elderly (3) | MS/No. of living children (3/2) | Death (3) | 11 | RR=2 for poor supports (primarily No. of children) |
| House 1982 | (2) | 12 yr | 2,754 (3) | MS/visits with relatives (3/2) | Death (3) | 10.5 | Increased risk for isolated men only/RR=1.9 for MS |
| Reed 1984 | (2) | 7 yr | 4,251 (3) | MS/No. of children/spousal inconsistency (3/2) | Death (3) | 10.5 | No associations between stress or social supports and mortality |
| Zuckerman 1984 | (2) | 2 yr | 400 elderly (3) | MS/No. of living children (3) | Death (3) | 11 | RR=1.7 for few living children |
| | | | | **Cardiovascular** | | | |
| Baranowski 1982 | (5) | ? | 24 families (2) | Multifam. group (2) | Supportive behavior for changing diet (1) | 11 | Fam. support groups showed more supportive behaviors to change diet and exercise |
| Chandra 1983 | (2) | 10 yr | 1,401 post-MI patients (3) | MS (3) | Death (3) | 11 | Married had decreased mortality after MI |
| Doherty 1981 | (1) | — | 144 men (2) | Wife's support (2) | Compliance with cholestrol-lowering drug (2) | 7 | Spousal support corr. with compliance |
| Earp 1982 | (5) | 18 mo | 218 hypertensives (2) | Home visit with fam. involvement (2) | BP (3) | 12 | Home visits decreased BP/fam. involvement had no effect |
| Gillum 1985 | (1) | — | 2,640 children (3) | Fam. environment (FES) (3) | BP (3) | 10 | No corr. between fam. environment and BP |

**Note:** Scores in parentheses.

## Ratings of Research on the Family's Impact on Illness—continued

| Study | Research design | Followup period | Subjects and selection | Family variable | Outcome variable | Overall score | Results |
|---|---|---|---|---|---|---|---|
| | | | **Cardiovascular** (continued) | | | | |
| Gore 1978 | (2) | 2 yr | 100 recently unemployed (3) | Fam. support (1) | Physical symptoms, depression, cholesterol (2/3) | 8.5 | Overall decrease in cholesterol except in men out of work and with low social supports |
| Haynes 1980 | (2) | 8 yr | 1,674 (3) | Marital dissatisfaction, disagreement (2) | Angina/MI (2/3) | 9.5 | No association between marital satisfaction and CHD |
| Heinzelman 1970 | (1) | — | 239 men (1) | Wife's attitude (1) | Adherence to exercise regimen (1) | 4 | Positive wife's attitude associated with adherence to exercise program |
| Hoebel 1976 | (0) | ? | 9 (1) | Strategic therapy with spouse (2) | Change in husband's behavior (1) | 4 | 7 of 9 wives reported change in husband's high-risk behavior |
| Koskevuo 1980 | (1) | — | 32,433 (3) | MS (3) | Cardiac death (3) | 10 | RR=3.3 for unmarried |
| Levine 1979 and Morisky 1983 | (5) | 5 yr | 400 hypertensives (2) | Fam. support during home visit (3) | Death/BP (3) | 13 | 57 percent decrease in mortality for experimental groups |
| Medalie 1973, 1976 | (2) | 5 yr | 10,000 men (3) | Fam. problems/ wife's support (2) | Angina/MI (2/3) | 10.5 | Fam. problems were a major risk factor for angina only/wife's support was protective |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Reed 1983 | (1/2) | 6 yr | 4,653 (3) | Fam. support (2) | Angina/MI (2/3) | 9 | Prevalence but not incidence of CHD corr. with social supports |
| Ruberman 1984 | (2) | 2-4 yr | 2,320 (3) | Divorce/visits with relatives | Death (3) | 10 | Stress and social isolation were powerful risk factors |
| | | | **Diabetes** | | | | |
| Anderson 1981 | (1) | — | 58 diab. adolescents (2) | Fam. environment (FES) (3) | Glycosylated hemoglobin (3) | 9 | Families with poorly controlled diabetes had less cohesion and more conflict |
| Baker 1975 and Minuchin 1978 | Quasi-exp. (2) | — | 7 psychosomatic, 8 behavioral, 8 normal diab. (1) | Stressful fam. interview (2) | FFAs (2) | 7 | Only psychosomatic diab. had rises in FFAs persisting after interviews |
| Cedarblad 1982 | (1) | — | 33 diab. (1) | Fam. functioning (FACES) (3) | Diab. control (0) | 5 | Maternal adaptability and low anxiety corr. with good control |
| Grey 1980 | (1) | — | 20 diab. (2) | Fam. functioning (FFI) (3) | Urinary glucose (3) | 9 | Parental self-esteem and fam. functioning corr. with diab. control |
| Koski 1972 | (1/2) | 5 yr | 60 diab. (1) | Fam. type (0) | Diab. control (0) | 2.5 | Good control associated with healthy fam. |
| Marrero 1982 | (1) | — | 40 diab. (1) | Parent behaviors (3) | Diab. control (1) | 6 | Dominant, controlling father associated with poor control |
| Minuchin 1975 | (0) | — | 13 diab./ 10 asthmatics/ 25 anorectics (1) | Structural fam. therapy (2) | Insulin dosage/ hospital visits (2) | 5 | Marked decrease in medication and hospitalizations |

## Ratings of Research on the Family's Impact on Illness—continued

| Study | Research design | Followup period | Subjects and selection | Family variable | Outcome variable | Overall score | Results |
|---|---|---|---|---|---|---|---|
| | | | **Diabetes (continued)** | | | | |
| Shouval 1982 | (1) | — | 97 diab. (1) | Fam. environment (FES)/support/discipline (3) | Diab. control (1) | 6 | Clear fam. organization and father's support associated with good control |
| White 1984 | (2) | ? | 30 diab. (2) | Fam. evaluation (1) | Diab. control (0) | 5 | Families of poorly controlled diab. were dysfunctional |
| | | | **Asthma** | | | | |
| Clark 1981 | (5) | ? | 140 asthmatic fam. (2) | Fam. education (2) | Self-management of asthma (1) | 10 | Fam. education associated with better management and less fear |
| Dubo 1961 | (1) | — | 71 asthmatics (1) | Fam. situation (1) | Asthma severity (1) | 4 | No fam. variables corr. with severity |
| Lask 1979 | (5) | 1 yr | 33 fam. with 37 asthmatic children (1) | Fam. therapy (2) | PFT/wheezing (3/2) | 10.5 | Significant improvement in thoracic gas volume and daily wheezing |
| Liebman 1974 | (0) | 1-2 yr | 7 severe asthmatics (1) | Structural fam. therapy (2) | Hospitalizations/ medication (2) | 5 | Reduction in hospitalizations, medications, and school absences |
| Purcell 1969 | (2) | Quasi-exp. | 25 asthmatics (2) | Removal of fam. (3) | Symptoms/ medications/ PFT (2/3) | 9.5 | 7 of 13 children predicted to improve did improve |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Other illnesses** | | | | | | | |
| Ferguson 1979 | (1) | — | 40 rheumatoid arthritics (2) | Fam. support (1/2) | Compliance with exercise, ASA, splints (1) | 4.5 | Fam. support not corr. with any measure of compliance |
| Horne 1979 | (2) | 1-3 yr | 110 men with abnormal CXR (1) | Childhood and marital stability (1) | Lung cancer (3) | 7 | Neither marital nor childhood factors predicted malignancy |
| Nasiry 1983 | (2) | CC | 80 ulcer patients and controls (1) | MS/fam. stability/childhood happiness (3/2) | Duodenal ulcer (3) | 8.5 | Being unmarried associated with duodenal ulcer in women only |
| Neser 1971 | (2) | — | 86 counties in N.C. (3) | Fam. disorganization (2) | Death rates from strokes (3) | 10 | Stroke mortality corr. with fam. and social disorganization |
| Oakes 1970 | (1) | — | 66 rheumatoid arthritics (1) | Fam. expectations (1) | Compliance with splint (1) | 4 | Fam. expectations corr. with compliance |
| Steidl 1980 | (1) | — | 23 dialysis patients (1) | Fam. functioning (BTFES) (3) | Diet/medication/overall function (2) | 7 | Strong parental alliance, affectionate fam. mood, midrange cohesion corr. with medical assessment and adherence |
| Wolcott 1981 | (1) | — | 39 ulcer patients (1) | Fam. environment (FES) (2) | Pepsinogen and gastric level (3) | 7 | Gastrin levels corr. with with 3 subscales of FES |
| **Childhood illness** | | | | | | | |
| Beautrais 1982 | (2) | 3 yr | 1,082 (3) | Stressful fam. events (3) | Hospitalization/ MD visits (3/2) | 10.5 | Children with more than 12 stressful family events had 6 times more hospitalizations |

## Ratings of Research on the Family's Impact on Illness—continued

| Study | Research design | Followup period | Subjects and selection | Family variable | Outcome variable | Overall score | Results |
|---|---|---|---|---|---|---|---|
| | | | **Childhood illness** (continued) | | | | |
| Boyce 1977 | (2) | 1 yr | 58 day care children (2) | Stressful events/ fam. routines (3) | Respiratory infections (2) | 10 | Stressful events associated with duration, not No. of infections |
| Heisel 1973 | (1) | — | 189 children (1) | Stressful fam. events (3) | JRA/hemophilia/ psych. illness/ surgery (3) | 8 | Higher than expected No. of stressful events before illnesses |
| Meyer 1962 | (2) | 1 yr | 100 members of 16 families (1) | Stressful events/ chronic fam. stress (2) | Throat culture/ ASLO titer (3) | 8 | 30 percent of strep infections preceded by family stress |
| | | | **Pregnancy** | | | | |
| Norbeck 1983 | (2) | 4-7 mo | 117 pregnant women (2) | Stress/fam. support (2) | Pregnancy complications (2) | 8 | High stress and low tangible social supports associated with certain complications |
| Nuckolls 1972 | (2) | 2 mo | 170 primigravidas (2) | Stress/psychosocial assets (2) | Pregnancy complications (2) | 8 | Women with high stress were protected from increased complications by psychosocial assets |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Illness behavior** | | | | | | | |
| Beautrais 1982 and Fergusson 1984, 1985 | (1) | — | 1,265 children (3) | Fam. life events/ maternal depr. (3) | Child behavior problems (2) | 9 | Mother's reports of child behavior problem corr. with maternal depr. and stressful events |
| Boardman 1975 | (1) | — | 200 children (2) | Fam. competence (1) | School absences (2) | 6 | Fam. competence corr. inversely with school absences |
| Huygens 1978*a* | (1) | — | 200 fam. (2) | Fam. health (1) | Diagnoses (2) | 6 | No. of children's diagnoses corr. with poor marital relationship |
| Huygens 1978*b* | (2) | ? | 28 problem fam. (1) | Fam. therapy (1) | MD visits and prescriptions (2) | 6 | Decrease in MD visits and prescriptions after fam. therapy |
| Prendergast 1975 | (1) | — | 57 students (2) | Parent-child relationship (3) | MD visits/illness symptoms (2) | 8 | MD visits corr. with firm maternal control and father's psych. tension |
| **Obesity** | | | | | | | |
| Brownell 1978 | (5) | 6 mo | 29 obese men (1) | Spouse involvement (2) | Weight loss (3) | 11 | Only spouse-involved group maintained weight loss |
| Brownell 1983 | (5) | 1 yr | 42 adolescents (2) | Mother's involvement (2) | Weight loss (3) | 12 | Group with mother and child seen separately lost most weight |
| Pearce 1981 | (5) | 1 yr | 68 overweight women (1) | Spouse involvement (2) | Weight loss (3) | 11 | Spouse-involved groups had greater weight loss and better maintenance |

## Ratings of Research on the Family's Impact on Illness—continued

| Study | Research design | Followup period | Subjects and selection | Family variable | Outcome variable | Overall score | Results |
|---|---|---|---|---|---|---|---|
| | | | **Obesity (continued)** | | | | |
| Saccone 1978 | (5) | 9 wk | 49 obese subjects (1) | Spouse reinforcement (2) | Weight loss (3) | 11 | Group with behavior change reinforced by spouse had most weight loss |
| Wilson 1978 | (5) | 6 mo | 32 obese women (1) | Fam. member involvement (2) | Weight loss (3) | 11 | No significant difference in weight loss between groups |
| | | | **Smoking** | | | | |
| Mermelstein 1983 | (2) | 6 mo | 46 smokers (1) | Partner support (1/2) | Smoking cessation (2) | 6.5 | Partner helpfulness predicted smoking cessation |
| | | | **Mental health** | | | | |
| Kellam 1977 | (1/2) | 3 yr | 1,200 first graders (3) | Fam. types (3) | Psych. health/ social adaptation (3) | 10.5 | Mother alone or mother-stepfather fam. associated with social maladaptation |
| | | | **Schizophrenia** | | | | |
| Brown 1972 | (2) | 9 mo | 101 schiz. (2) | EE/fam. contact (3) | Readmission/psych. symptoms (2) | 9 | High EE and contact with fam. associated with relapse |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Doanne 1981 | (2) | 5 yr | 52 disturbed adolescents (2) | Parental CD/AS (3) | Psych. diagnosis (2) | 9 | High parental CD associated with schiz. spectrum disorder |
| Doanne 1982 | (1) | — | 62 high-risk fam. (2) | Parental CD (3) | Child functioning (2) | 8 | High maternal CD associated with low child functioning |
| Falloon 1982 | (5) | 9 mo | 36 schiz. (from high EE fam.) (2) | Behavioral fam. therapy (2) | Readmission/ psych. symptoms (2) | 11 | Fewer symptoms and hospitalized days in fam. therapy group |
| Leff 1982 | (5) | 9 mo | 24 schiz. (from high EE fam.) (2) | Fam. therapy, education, and support (2) | Readmission/ psych. symptoms (2) | 11 | Fewer relapses and decreased EE in fam. treatment group |
| Vaughn 1976 and Leff 1981 | (2) | 2 yr | 37 schiz. (2) | EE/fam. contact (3) | Readmission/ psych. symptoms (2) | 9 | Same as Brown 1972 |
| Vaughn 1984 | (2) | 9 mo | 69 schiz. (2) | EE/fam. contact (3) | Readmission/ psych. symptoms (2) | 9 | Same as Brown 1972 |
| | | | | **Depression** | | | |
| Bromet 1984 | (1) | — | 43 depr. (1) | Fam. environment (FES) (3) | Depr. (3) | 9 | Fam. environment not different from norms |
| Cadoret 1978 | (2) | CC | 126 adoptees (2) | Mental health of biological parents (1) | Depr. (2) | 7 | Adoptees with depr. biological parents had higher rates of depr. |
| Dunkle 1981 | (1) | — | 410 impaired elderly (3) | Contribution to household (2) | Depr. (3) | 9 | Elder's contribution inversely corr. with depr. |

## Ratings of Research on the Family's Impact on Illness—continued

| Study | Research design | Followup period | Subjects and selection | Family variable | Outcome variable | Overall score | Results |
|---|---|---|---|---|---|---|---|
| | | | **Depression** (continued) | | | | |
| Garfinkel 1982 | (2) | CC | 505 adolescents (2) | Fam. demographics and history (2) | Suicide attempt (3) | 9 | Suicide attempters had fam. history of psych. illness, paternal unemployment, and parental absence |
| Merikangus 1984 | (2) | 1-3 yr | 56 depr. (2) | Mental health of spouse (3) | Divorce (3) | 10 | Divorce rate of depr. patients with psych. ill spouse was 8 times greater than normal |
| Parker 1979 | (2) | — | 52 depr./ 70 m-depr. (1) | Perceived parental care/PBI (3) | Depr. (3) | 9 | Depr. (not m-depr.) patients' parents were less caring/mothers overprotective |
| Parker 1979 | (1) | — | 254 students (2) | Perceived parental care/PBI (3) | Psych. symptoms (2) | 8 | Depr. and anxiety in students associated with parental overprotectiveness and less caring |
| Parker 1981 | (1) | — | 75 students (1) | PBI (3) | Mother's PBI (3) | 8 | Mother's report of own maternal care corr. with offspring's |
| Parker 1983 | (2) | CC | 125 depr. (1) | PBI (3) | Depr. (3) | 9 | Depr. patients scored parents as less caring and more controlling (affectionless control) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Rosenthal 1981 | (2) | CC | 90 depr. (1) | Fam. and childhood history (1) | Type of depr. (2) | 6 | Character-spectrum depr. had more parental loss, foster care, and fam. history of alcoholism |
| Rounsaville 1979 | (2) | 8 mo | 76 depr. women (1) | Marital disputes (2) | Depr. symptoms (3) | 8 | Decrease in marital disputes and depr. were corr. |
| Vaughn 1976 | (2) | 9 mo | 30 depr. (2) | Critical comments by relatives (3) | Readmission/ psych. symptoms (2) | 9 | Relapse associated with No. of critical comments by relatives |
| Weissman 1984 | (1) | — | 194 children of depr. parents (2) | Depr. parents (2) | Child psychopathology (2) | 7 | Children of depr. parents had more psychopathology (especially depr.) |
| | | | | **Alcoholism** | | | |
| Becker 1976 | (1) | — | 6 alcoh. and 6 psych. ill couples (1) | Marital interaction (2) | Alcoholism (3) | 7 | Similar interactions between alcoh. and nonalcoh. couples |
| Berger 1981 | (1) | — | 408 alcoh. (2) | Fam. participation (1) | Treatment completion (3) | 7 | Fam. involvement associated with completion of treatment |
| Billings 1979 | (2) | Quasi-exp.[1] | 12 alcoh., 12 distressed, and 12 nondistressed couples (2) | Marital conflict resolution (3) | Presence of alcohol (3) | 10 | Similar interactions between alcoh. and distressed nonalcoh. couples |
| Fitzgerald 1981 | (1) | — | 2,897/1,179 (3) | Alcoh. in fam. (2) | Alcoholism (3) | 9 | More alcoholism in fathers of male alcoh. |

[1]Alcohol was provided in a quasi-experimental design.

## Ratings of Research on the Family's Impact on Illness—continued

| Study | Research design | Followup period | Subjects and selection | Family variable | Outcome variable | Overall score | Results |
|---|---|---|---|---|---|---|---|
| | | | **Alcoholism** (continued) | | | | |
| Jacob 1981 | (2) | Quasi-exp.[1] | 8 alcoh. fam./ 8 controls (2) | Communication style (3) | Presence of alcohol (3) | 10 | Alcoh. spouses expressed more negative affect, which increased with alcohol |
| Jacob 1983 | (1) | — | 27 alcoh. couples (2) | Marital satisfaction (3) | Drinking pattern (3) | 9 | In steady (versus binge) drinkers amount of alcohol consumed corr. with better marital relationship |
| Moos 1979 | (1) | — | 124 alcoh. fam. (2) | Fam. stress and function/FES (3) | Treatment outcome (2) | 8 | More cohesion, social participation, and less conflict and stress in fam. with better treatment outcomes |
| Moos 1984 | (1) | — | 105 alcoh. fam./ 105 controls (2) | Role functioning congruence/FES (3) | Recovery from alcoholism (2) | 8 | Relapsed fam. had less cohesion, expressiveness, and congruence than recovered fam. or controls |
| Steinglass 1977, 1979 | (2/1) | 6 mo | 10 alcoh. couples (1) | Marital interactions (3/2) | Drinking and psych. changes (3) | 8.5 | Decreased drinking associated with fewer symptoms in spouse but not patient |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Steinglass 1980, 1981*a* | (2) | ? | 31 alcoh. fam. (1) | Fam. behavior (3) | Severity and phase of drinking (3) | 9 | Fam. in stable wet phase of alcoholism had higher distance regulation and lower content variability |
| Steinglass 1981*b* | (1) | — | 31 alcoh. fam. (2) | Psych. symptoms of spouse (3) | Severity of alcoholism (3) | 9 | Spouses' psych. symptoms corr. only with social consequences of alcoholism |
| Vaillant 1983 | (2) | 8 yr | 106 alcoh. (2) | Living with spouse (2) | Recovery (2) | 8 | Living with spouse not predictive of outcome |
| Wolin 1979 | (1) | — | 25 alcoh. fam. (1) | Disruption of rituals (2) | Transmission of alcoholism (3) | 7 | Disrupted fam. rituals associated with transmission of alcoholism to next generation |
| | | | **Drug abuse** | | | | |
| Alexander 1977 | (1) | — | 8 addict fam./ 8 controls (1) | Intrafam. perceptions (3) | Addiction (3) | 8 | Both addicts and parents described addicts as passive and dependent |
| Attardo 1965 | (1) | — | 129 mothers of 28 addicts, 41 schiz., and 60 controls (1) | Mother-child symbiosis (1) | Addiction/ schiz. (3) | 6 | Mothers of addicts scored higher in symbiosis than other mothers |
| Graeven 1978 | (1) | — | 203 adolescents (3) | Fam. life (1) | Heroin use (2) | 8 | Fam. conflict and lack of intimacy with parents associated with heroin use |

[1]Alcohol was provided in a quasi-experimental design.

## Ratings of Research on the Family's Impact on Illness—continued

| Study | Research design | Followup period | Subjects and selection | Family variable | Outcome variable | Overall score | Results |
|---|---|---|---|---|---|---|---|
| | | | **Drug abuse** (continued) | | | | |
| Kosten 1984 | (1) | — | 73 addict fam. (1) | Fam. environment (FES) and interactions (BTFES) (3) | Addiction (3) | 8 | Addicts perceived their fam. as having high achievement orientation and low conflict |
| Madanes 1980 | (1) | — | 18 addicts/ 9 schiz./ 9 students (2) | Fam. hierarchy (2) | Addiction (3) | 8 | More hierarchial reversals and cross-generational attachments in addict fam. |
| Rosenberg 1969 | (1) | — | 50 addicts/ 50 alcoh. (2) | Fam. background (1) | Addiction/ alcoholism (1) | 5 | Alcoh. and addicts had similar fam. backgrounds |
| Rosenberg 1971 | (1) | — | 35 parents of addicts (1) | Perceptions of children (1) | Addiction (2) | 5 | Addicts more antisocial and shy as children |
| Stanton 1979 | (1) | — | 61 addict fam./ 25 controls (2) | Fam. interactions and perceptions (3) | Addiction (3) | 9 | Addict fam. interactions more rigid and conflictual/addicts' mothers more dominant and perceived husbands as "weak" |
| Stanton 1982 | (5) | 1 yr | 118 addict fam. (2) | Structural fam. therapy (2) | Drug use (3) | 12 | More drug-free days in fam. therapy groups (paid and unpaid) |
| Tennant 1975 | (1) | — | 5,044 soldiers (3) | Childhood events (1) | Alcohol and drug abuse (1) | 5 | Happy parental marriage and spanking associated with not using drugs |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Vaillant 1966*a* | (2) | 12 yr | 100 addicts (2) | Fam. demographics (2) | Drug addiction (2) | 8 | Addicts were first generation immigrants from broken homes living with parent(s) |
| Vaillant 1966*b* | (1) | — | 488 addicts (2) | Parents' birthplace (2) | Drug addiction (2) | 7 | More addicts were first generation immigrant than controls |
| Webb 1978 | (2) | 1 mo | 19 alcoh./17 drug abusers (1) | Prehospital living arrangements (2) | Posttreatment functioning (3) | 8 | Not living with fam. associated with better treatment outome |
| | | | **Anorexia** | | | | |
| Heron 1984 | (1) | — | 16 anorectics/ 40 psych. controls (1) | Fam. characteristics (1) | Anorexia nervosa (1) | 6 | Anorectic fam. were described as closer and more exclusive with less reported external stress |

## Summaries of Methodologic Scores

This section provides summary scores for all of the studies rated so that scores for an individual study can be compared to the other studies. The four standards noted earlier were used to rate the 110 studies, and the scores were summed to give an overall score for each study. The frequencies of each score, the mean and median scores for each of the standards, and the overall scores are tabulated below.

**Research design**

| Score | Percent of studies |
|---|---|
| 5 | 11 |
| 2 | 42 |
| 1/2 | 3 |
| 1 | 41 |
| 0 | 3 |

Mean=1.83; median=2

**Selection of subjects**

| Score | Percent of studies |
|---|---|
| 3 | 19 |
| 2 | 31 |
| 1 | 50 |

Mean=1.7; median=2

**Specification of family variable**

| Score | Percent of studies |
|---|---|
| 3 | 41 |
| 3/2 | 5 |
| 2 | 35 |
| 1/2 | 2 |
| 1 | 16 |
| 0 | 1 |

Mean=2.2; median=2

**Specification of health variable**

| Score | Percent of studies |
|---|---|
| 3 | 50 |
| 3/2 | 7 |
| 2 | 30 |
| 1 | 10 |
| 0 | 3 |

Mean=2.38; median=3

**Overall scores**

| Score | Percent of studies |
|---|---|
| 10 - 14 | 28 |
| 8 - 9.5 | 38 |
| 6 - 7.5 | 23 |
| 2 - 5.5 | 11 |

Mean=8.22; median=8.5

# Part Three

# Family's Impact on Health: Annotated Bibliography

# Annotations

**1. Ablon, J. Family research and alcoholism.** *Recent Developments in Alcohol* **2:383-395, 1984.**

**Problem/Methodology**

Review of the anthropological studies of the family and alcoholism. (39 references)

**Results**

The author argues that basic anthropological approaches (e.g., holism, structural functionalism) and methodologies (e.g., naturalistic settings, home observations) are congruent with family system approaches to alcoholism. Studies by Steinglass, Ablon, Wolin, and Bennett demonstrate the function of drinking behavior within the family system. The author calls for the collaboration of clinicians and anthropologists to conduct longitudinal, indepth observational studies of families within a sociocultural framework.

**2. Alexander, B.K., and Dibb, G.S. Interpersonal perception in addict families.** *Family Process* **16:17-28, 1977.**

**Problem**

To compare the interpersonal perceptions within families of addicts with those of normal families.

**Methodology**

*Cross-sectional study.* Eight addicts who maintained a close social and financial relationship with their parents were matched with a nonaddict from the addict's graduating high school class who had a similar parental relationship. The subjects (N=16) and their parents individually rated each other using Q-sort cards. Each participant arranged 60 cards con-

taining an adjective or descriptive phrase into 5 piles of 12 cards, each pile ranging from those cards that best describe to those that least describe the other family member. In addition, each family member used the cards to describe the ideal offspring. A correlation matrix was used to compare the results.

**Results**

As compared with the controls, the addicts and their parents described the addicts more negatively (especially more passive and dependent) than their ideals or the parents. The ideals were described very similarly by all of the participants. The addicts' mothers described themselves as less agreeable and more passive than the ideal.

**Comments**

The authors suggest that the parents low regard for their addicted offspring leads to low self-esteem and the maintenance of drug addiction. However, the causal relationships between parental attitudes, self-esteem, and drug addiction cannot be determined with a cross-sectional design.

**3. Anderson, B.J., and Auslander, W.F. Research on diabetes management and the family: A critique.** *Diabetes Care* **3:696-702, 1980.**

**Problem/Methodology**

Review of the research on diabetes and the family: The authors review the early literature, which used a linear model in which parental attitudes were viewed as the significant family influence on diabetic control. They discuss the shift to a systems model of family interaction and review these studies, including Minuchin's work. Finally, they discuss in detail some of the methodological problems with this research and directions for the future. (67 references)

**Results**

There have appeared to be three types of mother-child relationships that correlate with diabetic control. Children with good control and healthy personalities tended to have mothers who use a flexible approach to the diabetic regimen. Children with good control but disturbed personalities had mothers rated as overcontrolling and perfectionistic. Children with poor control had mothers who display indifference or rejection. In addition, children with good control tended to come from families that

were stable, low in stress, and had few interpersonal conflicts. Methodological limitations included problems with research design (almost exclusively cross-sectional), measurements of independent (family functioning) and dependent (diabetic control) variables, and subject selection. The authors suggest more research on the influence of fathers on diabetic management, the impact of specific characteristics of the diabetic child on the family, healthy family characteristics, and the relationships between the family and other support systems.

**4. Anderson, B.J.; Miller, J.P.; Auslander, W.F.; and Santiago, J.V. Family characteristics of diabetic adolescents: Relationship to metabolic control.** *Diabetes Care* **4:586-594, 1981.**

**Problem**

To determine the relationship between family characteristics and the adequacy of diabetic control in adolescents.

**Methodology**

*Cross-sectional study.* Fifty-eight diabetic adolescents, who were hospitalized for a yearly research protocol, and one parent of each (usually the mother) were studied. The adolescents were assessed with a structured interview and two previously validated and standardized scales, the Piers-Harris Children's Self-Concept Scale and the Moos Family Environment Scale. The parents were assessed with a structured interview, and approximately half of them completed the Moos Family Environment Scale. Diabetic control was determined by glycosylated hemoglobin ($HbA_{1c}$), and the adolescents were divided into good, fair, or poor control on that basis.

**Results**

There were no significant differences between demographic features of families of adolescents in good and poor control (parents' employment status and educational level, family size, or presence of another diabetic family member). Adolescents in poor control reported significantly more diabetes-related symptoms, greater anxiety, a more negative self-concept, and less cohesion and more conflict among family members than adolescents in good control. Parents of adolescents in good control were more likely to state that family members were encouraged to behave independently, and there was a trend ($p$=.06) toward reporting that family members are encouraged to act openly and express feelings directly. The authors compare their findings with other studies including Minuchin's concept of

psychosomatic families, and they discuss the difficulties of separating the complex interplay between family dynamics and diabetic control.

### Comments

This well-designed study is distinguished by its use of previously validated family assessment scales given to both the diabetic child and a parent and by an objective and reliable measure of diabetic control. The finding of few major differences in the families of diabetics with poor versus good control contrasts with less well-designed studies. The difference between the parent's and adolescent's assessment of the family emphasizes the complexities of the family environment and the inherent difficulties in studying it. As the authors discuss, two limitations of the study were that the parents involved were almost exclusively mothers and that the cross-sectional nature of the study precludes making any judgment regarding causal links.

**5. Attardo, N. Psychodynamic factors in the mother-child relationship in adolescent drug addiction: A comparison of mothers of schizophrenics and mothers of normal adolescent sons.** *Psychotherapy and Psychosomatics* **13:249-255, 1965.**

### Problem

To compare the amount of mother-child symbiosis in mothers of drug addicts, schizophrenics, and controls.

### Methodology

*Cross-sectional study.* The mothers of sons with drug addiction (N=28) and schizophrenia (N=41) and without psychopathology (N=60) were administered a 103-item questionnaire designed to measure mother-child symbiosis. The scale covered the major phases of early psychosexual development and included the "major dynamic components of symbiosis, such as ambivalence, clinging, narcissism, masochism, and mother's fear of object relationships." The groups were not matched. Sociodemographic information on the mothers and sons were obtained but not reported.

### Results

The mothers of drug addicts scored significantly higher on the symbiosis scale than the mothers of schizophrenics and controls, who were not significantly different from each other. The difference was greatest

for the parts of the scale measuring symbiosis when the son was between 11 and 16 years old.

**Comments**

Both the method and results section of this report are very brief. None of the data or statistical analysis is presented. Failure to match or even report basic demographic variables for each groups (e.g., ages of mothers and sons) make the results of this study impossible to interpret.

**6. Baker, L.; Barcai, A.; Kaye, R.; and Haque, N. Beta adrenergic blockade and juvenile diabetes: Acute studies and long-term therapeutic trial.** *Journal of Pediatrics* **75:19-29, 1969.**

**Problem**

To assess the effects of emotional arousal on diabetic control and the role of beta adrenergic blockers in suppressing the stress response.

**Methodology**

*Quasi-experimental trial.* Eight children with poorly controlled diabetes received an infusion of epinephrine, and levels of glucose and free fatty acids (FFAs) were measured. This was repeated after pretreatment with a beta adrenergic antagonist (beta blocker).

*Case reports.* Two preadolescent diabetic girls with histories of recurrent diabetic ketoacidosis were studied. Each girl underwent a stressful interview designed to "reproduce what was viewed as the specific stresses in the girl's home situation." FFAs and blood sugars were measured. This was repeated 2 weeks later after pretreatment with a beta blocker. In addition, each girl underwent long-term treatment with the beta blocker for 1 year. One of the families entered family therapy during the year.

**Results**

In the quasi-experimental trial the beta blocker prevented the epinephrine-induced rises in FFAs and blood sugar in all seven patients

During the stressful interviews, there was a rise in FFAs and blood sugar, which was prevented with the beta blocker. Long-term treatment with the beta blocker resulted in a marked reduction in episodes of diabetic ketoacidosis, with only two admissions over the 12-month period.

**Comments**

This early study by Minuchin's group led to the development of the concept of psychosomatic families in which emotional arousal led to rises in catacholamines, FFAs, and blood sugars, eventually leading to diabetic ketoacidosis.

**7. Baker, L.; Minuchin, S.; Milman, L.; Liebman, R.; and Todd, T. Psychosomatic aspects of juvenile diabetes mellitus: A progress report.** *Modern Problems in Paediatrics* **12:332-343, 1975.**

See Minuchin et al. 1978 for annotation.

**8. Baker, L.; Minuchin, S.; and Rosman, B. The use of beta-adrenergic blockade in the treatment of psychosomatic aspects of juvenile diabetes mellitus. In: Snart, A., ed.** *Advances in Beta-Adrenergic Blocking Therapy.* **Princeton, N.J.: Excerpta Medica, 1974. Pp. 67-80.**

**9. Baranowski, T.; Nader, P.R.; Dunn, K.; and Vanderpool, N.A. Family self-help: Promoting changes in health behavior.** *Journal of Communications* **Summer:161-172, 1982.**

**Problem**

To determine the effects of family support groups on supportive behavior for changing dietary and exercise behavior in other family members.

**Methodology**

*Randomized controlled trial.* Twenty-four families (37 children, 31 adults) were stratified by ethnic group (white, black, or Hispanic) and randomized into experimental and control groups. Both groups received educational brochures and monitored their own diet (primarily intake of salt and saturated fats) and exercise behavior. The experimental group attended a weekly 2-hour multifamily group for 8 weeks. The multifamily group emphasized supporting family members' desired changes in diet and exercise. In addition, members were rewarded for obtaining their preset goals. Before and after intervention, both groups were assessed by a self-report scale for the number of supportive behaviors that might promote or inhibit the desired changes in diet and exercise of other family members.

**Results**

A low and not significantly different number of supportive behaviors was found in each group prior to the intervention. Postintervention, both groups had an increase in supportive behaviors, but the experimental group reported significantly greater numbers of supportive behaviors for 10 of 26 items reported. Most of these changed behaviors were emotional support for changing diet.

**Comments**

The self-report of supportive behaviors is unlikely to be accurate, as the experimental group may simply report that they are doing what they had been told to do. In addition to being part of a supportive multifamily group, the experimental group received rewards for changing their behaviors. Any change in the behaviors of the experimental group may be due to positive reinforcement, which has been shown to influence behavior, rather than the multifamily support group.

**10. Barbarin, O.A., and Tirado, M. Family involvement and successful treatment of obesity: A review.** *Family Systems Medicine* **2:37-45, 1984.**

**Problem**

A family systems approach to weight loss is described, and the research on the role of the family in weight loss is reviewed.

**Methodology**

Approximately 10 studies on family involvement in the treatment of obesity are discussed. (43 references)

**Results**

The treatment of obesity is notoriously unsuccessful with very little long-term weight loss. Studies have shown that successful weight loss is associated with support from the family. Four treatment trials examined the effect of spouse involvement in a weight reduction program. Three of the four demonstrated a beneficial effect. The authors suggest that family involvement may be most beneficial in cohesive families and when the spouse is actively involved. Family involvement may be harmful in some families.

**11. Bartrop, R.W.; Luckhurst, E.; Lazarus, L.; Kiloh, L.G.; and Penny, R. Depressed lymphocyte function after bereavement.** *Lancet* **1:834-836, 1977.**

**Problem**

To assess the effects of the loss of the spouse on immunological functioning.

**Methodology**

*Prospective cohort study.* Twenty-six bereaved spouses (aged 20 to 65) were matched by age, sex, and race to a control group of hospital staff. Blood was obtained for immunological studies 2 and 6 weeks after the death of the spouse and at the same time for the matched controls. Studies included stimulation of T-lymphocytes with mitogens (phytohemagglutinin and concanavalin A), number of T and B cells, serum protein electrophoresis, immunoglobulins, and delayed hypersensitivity. Thyroid hormones, cortisol, prolactin, and growth hormones were also measured.

**Results**

There was a significant decrease in lymphocyte response to both mitogens from 2 weeks to 6 weeks postbereavement, which did not occur in the control group. The bereaved group had significantly lower lymphocyte responsiveness than the controls at 6 weeks. There were no differences or significant changes in the other immunological tests or hormone assays.

**Comments**

While the decline in lymphocyte functioning appears significant, using hospital staff as a comparison group may bias the findings because they may not have "normal" lymphocyte functioning.

**12. Beardslee, W.R.; Bemporad, J.; Keller, M.B.; and Klerman, G.L. Children of parents with major affective disorders: A review.** *American Journal of Psychiatry* **140:825-832, 1983.**

**Problem/Methodology**

A review of cross-sectional and longitudinal studies of the children of parents with major affective disorders. Retrospective accounts of childhood by depressed adults were not included because of significant recall bias. (67 references)

**Results**

Children of parents with affective disorders had high rates of impairment, including overall psychiatric symptoms and diagnoses, and affective disorders. Since very few studies used control groups, the relative risk of impairment for these children is not known. In one controlled study, 7 percent of children of depressed parents were diagnosed as depressed, while none of the control children were depressed. Studies on the development of these children are contradictory. Studies using parents' reports show more impairment than those using peer and teacher reports, and younger children appear less affected than older children. Methodological problems with these studies include small samples of children of varying ages, the use of parents' assessment of the children, the absence of diagnostic criteria for childhood impairment, and the lack of a control group. The extent to which the increased impairment of children of depressed parents is genetic versus environmental cannot be determined from these studies. The authors make recommendations for future research.

**13. Beautrais, A.L.; Fergusson, D.M.; and Shannon, F.T. Family life events and behavioral problems in preschool children.** *Pediatrics* **70:774-779, 1982*a*.**

See Fergusson et al. 1984, 1985 for annotation.

**14. Beautrais A.L.; Fergusson, D.M.; and Shannon, F.T. Life events and childhood morbidity: A prospective study.** *Pediatrics* **70:935-940, 1982*b*.**

**Problem**

To examine the relationship between family life events and overall morbidity during the preschool years.

**Methodology**

*Prospective cohort study.* A sample of 1,082 children were followed from the age of 1 to 4. Each year mothers were asked to recall family life events for the previous 12 months using a modification of the Holmes and Rahe Scale. Morbidity was measured by hospital admissions (primarily from hospital records) and general practitioner consultations (obtained from a maternal diary or recall) for the following conditions: lower respiratory tract illness, gastroenteritis, accidents, poisoning, burns or scalds, and suspected home-related conditions. Potential confounding variables examined included family characteristics (e.g., size, race, maternal age) and socioeconomic status.

**Results**

After controlling for confounding variables, hospital admissions and general practitioner consultations were highly correlated with the number of family life events. Children from families with more than 12 life events were 6 times more likely to have been hospitalized.

**Comments**

This is the most convincing study of the impact of family life events on childhood illness. Its strengths include the large number of subjects, a relatively objective measure of morbidity (hospitalizations), and controls for potential confounding variables. While the children were followed prospectively for 4 years, the study is really an annual retrospective analysis, making recall bias of life events a serious problem. In addition, the life events may have affected the decision to hospitalize a child, because families under stress may be unable to care for a sick child adequately.

**15. Becker, J.V., and Miller, P.M. Verbal and nonverbal marital interaction patterns of alcoholics and nonalcoholics.** *Journal of Studies on Alcohol* **37:1616-1624, 1976.**

**Problem**

To assess verbal and nonverbal marital interactions of alcoholics and nonalcoholics.

**Methodology**

*Cross-sectional study.* Six veterans hospitalized for alcoholism treatment and their wives were matched with six men hospitalized for nonpsy-

chotic psychiatric conditions and their wives for age, duration of marriage, education, and previous psychiatric hospitalizations. Each couple was videotaped while discussing alcohol- and nonalcohol-related topics. The interactions were rated for duration of looking at spouse, duration of speech, number of positive and negative statements, interruptions, touching, and requests for new behaviors.

**Results**

The only significant difference in the interactions was more frequent interruptions by the alcoholic husband and his wife than by the nonalcoholic couple. Wives in both groups looked at their spouses longer during the alcohol-focused discussions.

**Comments**

The similarity between alcoholic and nonalcoholic marital interaction was an unexpected finding. Previous studies without control groups had hypothesized that the spouses' increased attention to the alcoholic when alcohol-related topics were being discussed reinforced the drinking. Whether the marital interactions observed in this study are characteristic of marriages in which there is psychiatric illness cannot be determined without a normal control group.

**16. Becker, M.H., and Green, L.W. A family approach to compliance with medical treatment: A selective review of the literature.** *International Journal of Health Education* **19:173-182, 1975.**

**Problem/Methodology**

This review of the family's influence on a member's compliance considers studies of mothers' compliance with regimens prescribed for their children and family influence on nondependent members.

**Results**

The authors conclude that relationships have been established between compliance and several family characteristics including health beliefs, family patterns of illness behavior, support by other family members, and the family's evaluation of the symptoms.

**17. Berger, A. Family involvement and alcoholics' completion of a multiphase treatment program.** *Journal of Studies on Alcohol* **42:517-521, 1981.**

**Problem**

To assess whether family involvement in alcoholism treatment is related to completion of a treatment program.

**Methodology**

*Cross-sectional study.* The records of 408 alcoholics admitted to an alcoholism rehabilition hospital were examined to determine completion of each of three phases of treatment (detoxification, inpatient rehabilitation, and outpatient rehabilitation) and family members' participation in the outpatient program.

**Results**

Three-quarters of the alcoholic patients whose families were involved in the outpatient treatment program completed all three phases of treatment, compared to one-fifth of the alcoholics who had no family involvement. This difference remained significant when patients without families were excluded.

**Comments**

Alcoholics who dropped out of treatment before the outpatient phase obviously would not have family involvement in that phase. Numerous problems with definition of family involvement, family availability, and confounding variables make the conclusions of this study invalid.

**18. Berkman, L.F. Assessing the physical health effects of social networks and social support.** *Annual Review of Public Health* **5:413-432, 1984.**

**Problem/Methodology**

This most recent and comprehensive review of the impact of social supports on physical health is written by one of the leaders in this field. The author considers the components and measurements of social supports and networks. The health effects reviewed include overall mortality, cardiovascular morbidity, complications of pregnancy, and bereavement.

She discusses the functions of social ties (intimacy, integration, opportunity for nurturant behavior, reassurance of worth, assistance, guidance, and access to new contacts) and mechanisms or pathways by which social supports may effect health by change in illness behavior (through advice, social pressure, or direct aid) or direct physiological changes (via "stress"). (74 references)

19. **Berkman, L.F., and Breslow, L.** *Health and Ways of Living: The Alameda County Study.* **New York: Oxford University Press, 1983. Pp. 113-175.**

20. **Berkman, L.F., and Syme, S.L. Social networks, host resistance and mortality: A nine year follow-up study of Alameda County residents.** *American Journal of Epidemiology* **109:186-204, 1979.**

**Problem**

To examine the relationship between social and community ties and overall mortality.

**Methodology**

*Retrospective cohort study.* A random sample of 6,928 adults in Alameda County, California, were assessed in the Human Population Laboratory Survey. Measures of social networks were marriage, contacts with close friends and relatives, church membership, and informal or formal group association. The outcome measure was mortality at 9-year followup. Other variables measured and controlled for were age, self-reported physical health status, socioeconomic status, and health behaviors (e.g., smoking, alcohol consumption, obesity, utilization of health services, and a cumulative index of health behaviors).

**Results**

Each of the measures of social networks were independently associated with survival 9 years later. Marital status and contacts with close friends and relatives were the most powerful predictors. Using a social network index derived from the social network variables, the most socially isolated subjects had a relative risk of dying of 2.3 for men and 2.8 for women when compared to the most socially connected subjects. These relationships remained significant in a multivariate analysis (Berkman and Breslow 1983).

**Comments**

This well-designed study emphasizes not only the important health impact of social supports but, in addition, that the family is the most important tutor in social supports. Problems with the study include the use of self-reported health status as a measure of physical health and the secondary (retrospective) analysis of previously collected data.

**21. Billings, A.G.; Kessler, M.; Gomberg, C.A.; and Weiner, S. Marital conflict resolution of alcoholic and nonalcoholic couples during drinking and nondrinking sessions.** *Journal of Studies on Alcohol* **40:183-195, 1979.**

**Problem**

To compare marital interaction of alcoholic couples with nonalcoholic but maritally distressed couples and control (nonalcoholic, nondistressed) couples, with and without the introduction of alcohol.

**Methodology**

*Cross-sectional, quasi-experimental study.* Twelve couples were recruited for each of three study groups. Nondistressed couples included social drinkers without a history of marital problems who scored above 100 on the Marital Adjustment Test (MAT), indicating general marital satisfaction. Distressed couples included social drinkers with scores less than 100 on the MAT, indicating significant marital dissatisfaction. The husbands of alcoholic couples had a history of chronic alcoholism and were presently drinking. Each couple participated in four conflict resolution situations designed to mimic stressful situations that might occur in the couple's lives. For some of the scenes alcoholic beverages were provided. Each scene was videotaped and scored by trained observers for acts of power and affiliation using the Interpersonal Behavior Rating System and for types of conflict resolution behavior using the Coding Scheme for Interpersonal Conflict.

**Results**

All couples reported that the situations generated conflict similar to what occurs in their relationships. The alcoholic and distressed couples were not significantly different in their interactions. They communicated fewer rational problem-solving statements and engaged in more negative and hostile acts than did nonalcoholic, maritally satisfied couples. There

was no significant difference in alcoholic couples' communication patterns when drinking or not drinking.

**Comments**

This study suggests that previously observed dysfunctional interactions between alcoholic couples are due to overall marital dysfunction and are not specific to alcoholism. The extent to which marital dissatisfaction is related to the development of alcoholism or is a consequence of it is not known. In this study, the alcoholics drank very little alcohol when it was provided and there was no intoxication, making it impossible to draw any conclusions about the effect of alcohol on the marital interaction.

**22. Blazer, D.G. Social support and mortality in an elderly community population.** *American Journal of Epidemiology* **115:684-694, 1982.**

**Problem**

To examine the relationship between social support and mortality in the elderly.

**Methodology**

*Prospective cohort study.* A sample of 331 elderly persons (over age 65) were assessed by questionnaire (Older American Resources and Services Community Survey—OARS) as part of the Durham County Aging Study and were followed for 30 months. Measures of social supports included roles and attachments available (marital status, number of living children, and siblings), frequency of social interactions (number of telephone calls and visits with friends and relatives per week), and perception of social supports (belonging, effective interaction, intimacy, dependability). Self-reported variables measured and controlled for in a multivariate analysis included age, sex, race, economic resources, physical health, activities of daily living, symptoms of depression, stressful life events, cognitive impairment, and smoking.

**Results**

Each measure of social supports (availability, frequency, and perception) was independent of each other and was correlated with lower mortality at 30 months. The relative risk of dying was 3.4 for impaired perceived social support, 2.04 for impaired roles and attachments, and 1.88 for impaired frequency of interaction. The association between social

supports and mortality was not linear. Marital status was not associated with mortality. Poor physical health and fewer activities of daily living were fewer associated with poorer social supports.

**Comments**

While availability, frequency, and perception of social supports were all associated with survival at 30 months, marital status was not. The author suggests that perhaps the effect of loss of spouse had already taken its toll and was controlled for in previous health status. It appears that children are a more important form of social supports for the elderly.

**23. Blechman, E.A. Conventional wisdom about familial contributions to substance abuse.** *American Journal of Drug and Alcohol Abuse* **9:35-53, 1982.**

**Problem/Methodology**

Three hypotheses ("conventional wisdom") about the family backgrounds of substance abusers and the theories on which they are based are critically examined. The broken-home hypothesis attributes substance abuse to the absence of a parent, usually the father. The overprotective mother hypothesis emphasizes the effect of indulgent, dominant maternal behavior combined with ineffectual paternal behavior. The increased control hypothesis stresses the interactions between the drug abuser and the other family members. (112 references)

**Results**

The author concludes that the evidence for each of these hypotheses is inconclusive due to numerous serious methodological flaws in the studies. These problems include lack of control groups, selection biases resulting in poor generalizability, failure to control for confounding variables especially social class, weak correlation designs, failure to operationally define concepts such as "overprotective mothers," and inadequate or absent statistical analysis. The theories that support each of these hypotheses (Freud's concept of identification and social learning theory) have not been supported by research. More sophisticated methods of research design (e.g., panel studies and single-case experimental designs) and data analysis (e.g., multiple regression analysis) are proposed.

**Comments**

This skeptical view of the research on families and drug abuse, written by a behaviorist, should be read along with one of the more enthusiastic and less critical reviews in this area.

**24. Boardman, V.; Zyzanski, S.J.; and Cottrell, L.S. School assences, illness and family competence. In: Kaplan, B.H., and Cassel, J.C. *Family and Health: an Epidemiological Approach.* Chapel Hill: University of North Carolina, 1975. Pp. 63-88.**

**Problem**

To examine the relationship of family competence and illness behavior as measured by school absences by grade schoolers.

**Methodology**

*Cross-sectional study.* The absence records of students in grades 2 through 5 from 18 schools were examined, and a random sample of 100 students who had missed more than 10 days over the previous 2 years (and another 100 who had missed less than 3 days) were assessed for their family competence. The mother of each child completed a questionnaire that measured seven components of family competence: family commitment, communication, judgment, creativity, pride, participation, and self-confidence. Variables controlled for included family size and composition, family illnesses, social position, race, and age and sex of the child.

**Results**

In a multivariate analysis of the data, family competence was found to be inversely correlated with school absences when all confounding variables were controlled for. Family participation, self-confidence, and judgment were the most important components of family competence in predicting school absences.

**Comments**

School absence is not likely to be a good measure of a child's illness pattern but rather how a family handles an illness, which is likely to be related to "family competence."

**25. Boyce, W.T.; Jensen, E.W.; Cassel, J.C.; Collier, A.M.; Smith, A.H.; and Ramey, C.T. Influence of life events and family routines on childhood respiratory illness.** *Pediatrics* **60:609-615, 1977.**

**Problem**

To examine the effects of stressful life events and family routines on the incidence of respiratory infections in preschoolers.

**Methodology**

*Prospective cohort study.* Fifty-eight children attending a day care center were observed 5 days per week for 1 year for respiratory illness. Nasopharyngeal cultures were obtained biweekly. Each suspected illness was evaluated by a nurse practitioner or pediatrician. At the end of the year, the family of each child was interviewed. Coddington's pediatric modification of the Holmes and Rahe Scale was used to assess life changes and a new inventory, designed for the study, assessed the presence and perceived importance of family routines.

**Results**

The life-events score was positively correlated with severity and duration of illnesses, and the family-routine score inversely correlated with number of illnesses and duration. However, when potential confounding variables (particularly age) were controlled for, the life-events score independently correlated with duration of illness. When life events and routines were considered together, a high score on both was correlated with increased severity of illness, suggesting that at times of high stress family routines increase the severity of the illness (the opposite of the hypothesis).

**Comments**

This study shows the importance of controlling for confounding variables, which accounted for most of the initial findings. Duration and severity of respiratory illnesses are measures of illness behavior and may not reflect the underlying disease process.

**26. Broadhead, W.E.; Kaplan, B.H.; James, S.A.; Wagner, E.H.; Schoenbach, V.J.; Grimson, R.; Heyden, S.; Tibblin, G.; and Gehlbach, S.H. The epidemiologic evidence for a relationship between social support and health.** *American Journal of Epidemiology* **117:521-537, 1983.**

**Problem/Methodology**

An extensive review of the research examining the effect of social supports on health. The authors consider each of eight criteria for inferring causality (temporality, strength, consistency, biologic gradient, biologic plausability, coherence, experimental/intervention, and specificity of outcome). Also discussed are the determinants and dynamics of social supports and future research needs. (90 references)

**Results**

This review concludes that there is substantial evidence to show that social supports have a beneficial effect on health. Poor social supports precede both adverse psychological outcomes, accounting for 1 to 7 percent of the variance, and mortality, with relative risks of poor social supports from 1.5 to 3.5. Regardless of populations and study designs, the effect is consistent in direction (protective) and magnitude. There is an apparent linear relationship between measures of social supports and mortality. Neuroendocrinology offers some experimental evidence for possible mechanisms to explain the effects. There are very few studies on social supports interventions, and the effects of social supports are not specific but involve a wide range of outcomes.

**Comments**

Since this review was published, several studies on social supports have complicated the relationship with mortality. There is one large study that shows no effect of social supports on mortality (Reed et al. 1984). The relationship is not always linear (Blazer 1982; House et al. 1982), and the effect on men versus women is quite variable.

**27. Bromet, E.J.; May, V.E.; and May, S. Family environments of depressed outpatients.** *Acta Psychiatrica Scandinavica* **69:197-200, 1984.**

**Problem**

To assess the perceived family environments of depressed outpatients.

**Methodology**

*Cross-sectional study.* Forty-three depressed outpatients (15 bipolar, 19 unipolar, 9 secondary) and their families completed the Family Environment Scale (FES) and the Health and Daily Living questionnaire

(HDL). The FES consists of 10 subscales and 3 dimensions: relationships, personal growth, and system maintenance. Scores on the FES were standardized, based on previously determined norms. The HDL assessed current psychological and psychophysiological symptoms and recent life events. Both scales have been previously found to be valid and reliable.

**Results**

The scores of the depressed patients and their families on each of the 10 subscales on the FES did not differ significantly from the norms. The subgroups of depressives did not differ from each other or the norms. The number of psychological symptoms reported by the patients did correlate with negative perceptions on five of the subscales (cohesion, expressiveness, conflict, moral-religious emphasis, and organization). There was no relationship between psychophysiological symptoms or life events and FES scores.

**Comments**

This study contradicts other studies that have shown high rates of marital discord in couples with a depressed partner. The effect of marital conflict may be diluted by other aspects of the family environment when the FES is used.

**28. Brown, G.W.; Birley, J.L.T.; and Wing, J.K. Influence of family life on the course of schizophrenic disorders: A replication.** *British Journal of Psychiatry* **121:241-258, 1972.**

**Problem**

To test the hypothesis that a high degree of expressed emotion (EE) in the relatives of schizophrenics is associated with an increased risk of relapse of schizophrenic symptoms.

**Methodology**

*Prospective cohort study.* At the time of hospital admission and again 9 months after discharge from the hospital, 101 schizophrenic patients and their families were assessed. An initial family interview was conducted to assess the family's feelings about the patient. It was scored by independent raters on the number of critical comments about someone else in the home, hostility, dissatisfaction, warmth, and emotional overinvolvement. An overall index of relative's EE was derived using scores of number of critical comments, overinvolvement, and hostility. Approxi-

mately one-half of the families were assessed as having high EE. The patients' work impairments, disturbed behaviors, and social withdrawal were determined initially and at followup. Relapse was determined by the recurrence of florid symptoms, with or without readmission.

**Results**

High EE in the family, work impairment, severity of initial symptoms, male sex, patient's acceptance of admission, lack of regular medication, and high face-to-face contact with relatives at home were all associated with higher relapse rates. When the other variables were controlled for, high EE remained significant. Of the patients, 58 percent from high-EE homes relapsed, compared to only 16 percent of the patients from low-EE homes ($p<.001$). The use of medication and amount of contact with the family were significant only in patients from high-EE families.

**Comments**

This study was designed to replicate in a more systematic manner, relationships that Brown had previously found among EE, medication use, and face-to-face contact with relatives. Brown hypothesizes that there is an optimal, neutral, and structured environment in which schizophrenics do best.

**29. Brownell, K.D.; Heckerman, C.L.; Westlake, R.J.; Hayes, S.C.; and Monti, P.M. The effects of couples training and partner cooperativeness in the behavioral treatment of obesity.** *Behavior Research and Therapy* **16:323-333, 1978.**

**Problem**

To evaluate the effect of spouse "cooperativeness" and training on a behavioral treatment program for obesity.

**Methodology**

*Randomized controlled trial.* The spouses of 29 obese men and women were asked to participate in an obesity treatment program with the subjects. The subjects whose spouses refused participated in the program alone. The subjects whose spouses agreed to participate were randomly assigned to two groups with and without spousal involvement. The spouses involved in treatment were trained in monitoring and modeling appropriate eating behavior. Treatment lasted 10 weeks and subjects were followed for 6 months.

**Results**

While there were no significant differences in weight loss between the three groups at the end of treatment, the involved spouse group continued to lose weight and had significantly more weight loss at 3- and 6-month followups. Their mean weight change (30 lbs) was greater than that seen in most intervention trials (average=10 lbs). There was no significant difference in weight loss between the uncooperative spouse group and the cooperative but uninvolved spouse group.

**Comments**

This study demonstrates that it is the spouse's actual involvement in the treatment program that improves results, not simply the willingness of the spouse to participate.

**30. Brownell, K.D.; Kelman, J.H.; and Stunkard, A.J. Treatment of obese children with and without their mothers: Changes in weight and blood pressure.** *Pediatrics* **71:515-523, 1983.**

**Problem**

To examine the effect of parent's involvement in a weight reduction program for obese adolescents.

**Methodology**

*Randomized control trial.* Forty-two obese adolescents (aged 12 to 16, average of 55 percent above ideal body weight) were enrolled in a 16-week weight reduction program. All the adolescents received the same basic program, a combination of behavior modification, nutrition education, exercise instruction, and social support. The children were stratified by degree of obesity and randomly assigned to one of three experimental groups: one in which the mother and child were seen concurrently but in separate groups (they were encouraged to share feelings about obesity and dieting), a second in which the mother and child were in the same group, and a third group in which the mother did not participate at all.

**Results**

The mother-child separate group lost significantly more weight (average weight loss=8.4 kg) and had a greater reduction in percent overweight than either the mother-child together or mother-child alone groups. These differences increased over the 1-year followup with persist-

ent weight loss in the mother-child separately group and a return to slightly above pretreatment weight for the other two groups. There were no significant differences between these latter two groups. Fall in systolic blood pressure was correlated with the amount of weight loss in all groups (average reduction=16 mm Hg).

**Comments**

The findings of this very well-designed study suggest that the manner in which the family is involved is crucial. The mother and child together was not effective, and understanding family dynamics and life-cycle tasks in these cases might explain this finding. These families are often enmeshed—with overinvolvement of parents (especially mother) in the adolescent's life, especially their eating behavior. However, involving the mother in treatment but in a separate group, presumably encouraging individuation, led to impressive weight and blood pressure reductions.

**31. Cadoret, R.J. Evidence for genetic inheritance of primary affective disorder in adoptees.** *American Journal of Psychiatry* **135:463-466, 1978.**

**Problem**

To compare the incidence of depression in the adopted offspring of psychiatrically disturbed and normal biological parents.

**Methodology**

*Retrospective cohort study.* Eighty-three offspring of biological parents with evidence of psychopathology who were adopted away at birth were matched with 43 adopted offspring of mentally healthy biological parents for age, sex, and age of biological mother at the time of adoption. The adoptees were assessed for evidence of depression by interview of the adoptee or the adoptive parent. Clinical diagnoses were made by a psychiatrist of each adoptee and biological parent based on all available information.

**Results**

Eight of the 83 adoptees in the experimental group had biological mothers with depression and 3 (37.5 percent) of these adoptees had unipolar depressions. Four (9.3 percent) of the 43 control adoptees had depression that is significantly different ($p$=.017).

**Comments**

The inability to match adequately for each case and the indirect assessments for depression weaken the findings in this study. To show an influence of the family environment on the development of depression, it is necessary to control for genetic influences. This can be done by comparing rates of depression in adoptees without depressed biological parents who were raised by depressed and nondepressed adoptive parents. Such studies have been done in schizophrenia.

**32. Cederblad, M.; Helgesson, M.; Larsson, Y.; and Ludvigsson, J. Family structure and diabetes in children.** *Pediatric and Adolescent Endocrinology* **10:94-98, 1982.**

**Problem**

To assess the validity of the concept of psychosomatic families of diabetic children.

**Methodology**

*Cross-sectional study.* Thirty-three children aged 10 to 14 with chronic diabetes and their families were assessed. A structured interview of each mother was used to measure three aspects of the child's mental health: degree of acting out, anxiety, and psychosomatic symptoms. Family functioning was measured with Olson's Family Adaptability and Cohesion Evaluation Scales (FACES), which was completed by each parent. Scores for each parent and the family on adaptability and cohesion were determined.

**Results**

Tight metabolic control was significantly related to high adaptability of the mother and to low anxiety and acting out of the child. Enmeshment (high cohesion) by the father was related to high anxiety and poor metabolic control in the child. Parents of the diabetics tended to score higher in cohesion than parents of normal day-care children from a previously unpublished study.

**Comments**

Most of this report discusses theory with insufficient description of either methods or results. How metabolic control was assessed is not stated, and only four of the numerous comparisons are reported. To

compare the families of diabetic adolescents to families of preschoolers is of questionable value.

**33. Cerreto, M.C., and Travis, L.B. Implications of psychological and family factors in the treatment of diabetes.** *Pediatric Clinics of North America* **31:689-710, 1984.**

**Problem/Methodology**

Review of recent articles on the psychosocial and familial aspects of diabetes. A developmental task model is used to illustrate how diabetes interacts with psychosocial factors at different stages of the life cycle. There is very little discussion of familial aspects of diabetes. Minuchin's work is referenced but not discussed. (62 references)

**34. Chandra, V.; Szklo, M.; Goldberg, R.; and Tonascia, J. The impact of marital status on survival after an acute myocardial infarction: A population based study.** *American Journal of Epidemiology* **117:320-325, 1983.**

**Problem**

To examine the effect of marital status on mortality after myocardial infarction (MI).

**Methodology**

*Prospective cohort study.* For 10 years, 1,401 patients who were classified as married or unmarried at the time of their MI were followed for subsequent mortality. Risk factors and potential confounders were recorded during their hospitalization and included age, sex, race, smoking history, previous history of heart disease, type of MI, and complications in hospital. The mortality rates were adjusted for all risk factors.

**Results**

There was a significantly decreased risk of dying during the initial hospitalization for married men (19.7 percent mortality) and married women (23.3 percent), as compared to unmarried men (26.7 percent) and women (37.4 percent). This difference in mortality increased at 10-year followup (men=$p<.0001$, women=$p<.025$).

**Comments**

This study examined the effect of a family factor (marital status) on the outcome of an illness while the initial severity of the disease is controlled for as much as possible. One important potentially confounding variable not controlled for was socioeconomic status, which is known to affect coronary disease and marital status.

**35. Clark, N.M.; Feldman, C.H.; Evans, D.; Millman, E.J.; Wailewski, Y.; and Valle, I. The effectiveness of education for family management of asthma in children: A preliminary report.** *Health Education Quarterly* **8:166-174, 1981.**

**Problem**

To assess the effect of self-management education on the course and impact of asthma in low-income families with an asthmatic child.

**Methodology**

*Randomized controlled trial.* Three hundred low-income families with an asthmatic child were randomly assigned to an experimental or control group. There were no significant differences in preintervention outcome variables in the two groups. The experimental group received a series of educational programs on managing an asthmatic attack, giving medication, appropriate limit setting, communication with the physician, managing asthma at school, and prevention of asthmatic attacks. Followup interviews were conducted to measure the effect of the intervention.

**Results**

Preliminary results were based on followup interviews of 140 families. The parents in the experimental group reported taking more self-management steps to avoid and treat acute asthmatic attacks, and the children missed fewer gym classes than those in the control group. In addition, parents in the experimental group reported that they were less fearful of their child dying during an asthma attack and that their children suffered less emotional stress than the control group. There was a nonsignificant reduction in school absences and emergency room visits in the experimental group.

### Comments

Since the outcome measures in this study were the self-reports of behaviors that the families were instructed to do, the validity of the results is suspect. The parents may simply have been reporting what they knew they were supposed to do, rather than what they did. There were no objective measures of school or gym attendance.

## 36. Clayton, P. Mortality and morbidity in the first year of widowhood. *Archives of General Psychiatry* 30:747-750, 1974.

### Problem

To determine the mortality and morbidity of the first year of widowhood.

### Methodology

*Prospective cohort study.* From the same voting district, 109 widows and widowers were matched with same age and sex controls and were followed prospectively. At 1 year, subsequent mortality was determined for all subjects, and 90 of the matched pairs were interviewed.

### Results

There was no difference in mortality between the cases and controls (4 percent and 5 percent, respectively) nor any significant differences in hospital rates, physician visits, or tranquilizer use. The bereaved group reported significantly more vegetative and psychological symptoms associated with depression and were more likely to have used hypnotics. They also reported more blurred vision, shortness of breath, and palpitations.

### Comments

Because of the small numbers involved and the relatively rare occurrence of mortality, there is a reasonable chance of a Type-II error, that is, failing to detect a difference in mortality when one exists. A power analysis indicates that to be 95 percent certain of detecting a doubling of the mortality rate (10 percent), one would need 1,000 subjects in the study. With less than 200 subjects, one is approximately 25 percent certain that there is not a doubling of mortality.

**37. Cox, P.R., and Ford, J.R. The mortality of widows shortly after widowhood. *Lancet* 1:163-164, 1964.**

**Problem**

To assess the change in death rates of widows during the 5 years after widowhood.

**Methodology**

*Cross-sectional (census) study.* All women who were awarded a widow's pension during 1927 (N=60,000) were studied for subsequent mortality over the next 5 years. The mortality rate by year postwidowhood was compared to the average mortality rate of the entire 5 years for the widows

**Results**

The widows were more likely to die in the 2nd and 3rd year of widowhood than during any of the other years (1st, 4th, or 5th).

**Comments**

This study did not examine whether widows had increased mortality during bereavement, but simply what the changes in mortality rates are during the first 5 years of widowhood. The results conflict with those of Parkes et al. (1969) who found increased mortality in the first 6 months and, thus, argue against stress as the intervening variable. However, because there is a delay between becoming a widow and receiving a widow's pension, the accuracy of the dating in this study is unclear.

**38. Crook, T., and Eliot, J. Parental death during childhood and adult depression: A critical review of the literature. *Psychological Bulletin* 87:252-259, 1980.**

**Problem/Methodology**

A critical review of the controlled studies examining the relationship between parental death during childhood and the development of adult depression. More than 20 studies are discussed with particular attention to the selection of appropriate control groups. (29 references)

**Results**

The studies that have shown a higher incidence of childhood bereavement among depressed patients have generally been methodologically flawed. The most common problem with these studies is inadequate control for age and social class. Studies showing similar incidence in early parental death in depressed and normal subjects have been better designed. The authors conclude that there is no evidence to support the theorized relationship between parental death during childhood and adult depression.

**39. Dell, P.F. Researching the family theories of schizophrenia: An exercise in epistemological confusion.** *Family Process* **19:321-335, 1980.**

**Problem/Methodology**

A review of the three major family theories on schizophrenia (parental thought disorders, deviant family communication, double bind interaction[1]) and empirical research supporting them, and a discussion of the necessity of an epistemological shift to a systemic and nonetiological paradigm. (64 references)

**Results**

The author argues that much of the research in this area is "epistemologically confused" and that a shift must be made from the Aristotelian/Cartesian/Newtonian epistemology of individual psychology and linear reductionism to a systemic epistemology of pattern. The latter approach, which underlies the family theories, rejects family etiology but views the family and schizophrenia as part of a complex interaction or pattern that can be described but not measured. The author admits that this transaction hypothesis may not be testable using presently available scientific methods.

**Comments**

This review is the clearest description of "radical" systems theory in which the concept of causality is rejected and the interactions between objects rather than the objects themselves are what are deemed important

[1]*Note: Double bind interaction* refers to a situation in which a child receives conflicting messages from one parent and no guidance from the other, weaker parent—Ed.

and are described. The inability to test this approach makes its usefulness very limited.

**40. Doane, J.A.; Jones, J.E.; Fisher, L.; Ritzler, B.; Singer, M.T.; and Wynne, L.C. Parental communication deviance in children at risk for adult psychiatric disorder.** *Family Process* **21:211-223, 1982.**

**Problem**

To assess the relationship between parental communication deviance (CD) and level of functioning in offspring of families in which one parent has a history of previous psychiatric hospitalization.

**Methodology**

*Cross-sectional study.* Sixty-two intact families involved in a larger prospective study of children at high risk for developing schizophrenia (University of Rochester Child and Family Study) were assessed. Each family had a 7- or 10-year-old male index child and one parent previously hospitalized for a psychiatric disorder. Parental CD was measured using Individual Rorschach Test, Consensus Spouse Rorschach, and Consensus Family Rorschach. In the latter two, consensus about the inkblot had to be reached by the family members without the examiner present. CD was scored for both parent and child using a previously validated method. The index child's functioning was assessed using 11 measures involving peers, teachers, and parents.

**Results**

There was no relationship between CD scores on the Individual Rorschach and the Consensus Rorschach. Mothers with low CD on all tests had very few children in the low-functioning groups while six of the seven children of mothers with high CD on all tests were in the low-functioning groups. There was no relationship between father's CD and offspring functioning. Controlling for socioeconomic status and IQ did not change the findings.

**Comments**

Since this study is cross-sectional, one cannot determine the direction of effects between maternal CD and child competence. It does suggest that the mother-child interaction is the most important in families with psychiatric illness. The study illustrates the problems with measuring

complex elements of family functioning such as communication. Even when direct observation is used, results may differ when family members are seen alone versus as a family.

**41. Doane, J.A.; West, K.L.; Goldstein, M.J.; Rodnick, E.H.; and Jones, J.E. Parental communication deviance and affective style: Predictors of subsequent schizophrenia spectrum disorders in vulnerable adolescents.** *Archives of General Psychiatry* **38:679-685, 1981.**

See Goldstein 1985 for annotation.

**42. Doherty, W.J., and Baird, M.A. A family approach to patient compliance. In: Doherty, W.J., and Baird, M.A.** *Family Therapy and Family Medicine.* **New York: Guilford Press, 1983. Pp. 137-149.**

**Problem/Methodology**

This chapter describes a family systems approach to compliance, including a theoretical model as well as practical suggestions for involving the family and conducting family compliance counseling. It also includes a brief review of the research on family support and compliance.

**Results**

In the review the authors conclude there are "strong correlational linkages but still fairly skimpy experimental linkages between family support and compliance," and "the area holds great promise for an empirical foothold for a family-oriented approach to patient care."

**43. Doherty, W.J.; Schrott, H.G.; Metcalf, L.; and Iasiello-Vailas, L. Effect of spouse support and health beliefs on medication adherence.** *Journal of Family Practice* **17:837-841, 1983.**

**Problem**

The study examined the relationship between spouse's support and health belief and compliance with taking cholesterol-lowering medication.

**Methodology**

*Cross-sectional study.* The subjects were 144 wives of middle-aged men participating in the Coronary Primary Prevention Trial, a randomized trial of a cholesterol-lowering agent. Compliance was measured by packet counts of unused medication (or placebo). Wife's support was determined by structured interviews with husbands, wives, and medical staff. Interviews of the wives were used to determine health beliefs.

**Results**

Spousal support by all three measures was strongly correlated with compliance, with those in the highest support group averaging 96 percent compliance and in the lowest group, 70 percent compliance. Specific wife behaviors associated with compliance were "showing interest in the program" and "reminding him about his medicine or diet." "Nagging about his medicine or diet" was negatively correlated with compliance. The wife's health beliefs regarding the husband's susceptibility to the risks of elevated cholesterol and the benefits of treatment correlated with a self-report of her support.

**Comments**

The strengths of this study include a relatively objective measure of compliance (packet count), measure of social support by more than one individual, and inclusion of specific behaviors in determining support. The major weaknesses are poor generalizability and cross-sectional design. The extraordinary high overall compliance rate (mean=82, median=96) is likely due to the self selection of highly motivated volunteers for an experimental trial and the dropout of noncompliers. The correlation between spousal support and compliance may be due the effect of compliance on spouse support (i.e., men who are enthusiastic and take their medication may cause their wives to be more encouraging). The finding that nagging (as opposed to reminding) about medication is negatively associated with compliance suggests that the patient's attitude affects either the spouse's behavior or his perception of that behavior.

**44. Dubo, S.; McLean, J.A.; Ching, A.Y.T.; Wright, H.L.; Kaufman, P.E.; and Sheldon, J.M. A study of relationships between family situation, bronchial asthma, and personal adjustment in children.** *Journal of Pediatrics* **59:402-414, 1961.**

**Problem**

To determine the relationship between the quality of family relationships and the severity of asthma in children.

**Methodology**

*Cross-sectional study.* Seventy-one asthmatic children undergoing desensitization and their parents were studied. The children were divided into groups according to severity of asthma and response to treatment. To assess the quality of family life, each parent and child underwent an individual, comprehensive, but unstructured psychiatric evaluation. Seventy variables relating to family situation, the child's adjustment, and the asthmatic condition were compared in a univariate fashion.

**Results**

The hypothesized relationship between the family situation and the severity of asthma was not found. None of the family variables was significantly correlated with the severity of asthma or the response to treatment. A strong correlation was found between the quality of family life and relationships and the asthmatic child's overall psychosocial adjustment.

**Comments**

This early study did not find any relationship between the family and asthma, though the family's overall adjustment was strongly correlated to the child's adjustment. The investigators appear to have been psychodynamically oriented psychiatrists who interviewed each family member separately rather than observing the interactions of the family as a whole. Whether this accounts for their negative results is not known.

**45. Dunkle, R.E. The effect of elders' household contributions on their depression.** *Journal of Gerontology* **38:732-737, 1983.**

**Problem**

To determine the relationship between depression in the elderly and their noneconomic contribution to household activity.

**Methodology**

*Cross-sectional study.* While cared for by family members, 410 chronically ill and impaired elderly persons were assessed. Depression was measured using the Zung Self-Rating Depression Scale. Contribution to the household was scored by the number of types (not frequency) of contributions made, which included remembering special occasions; giving gifts; helpful advice; visiting or entertaining others; providing companionship; babysitting; and helping with cooking, washing, or other housework. Self-reports of physical health were obtained and controlled for.

**Results**

There was a significant negative association between the elder's contribution to the household and the level of depression experienced. This relationship was not affected by whether the elder was living with a spouse or children.

**Comments**

The authors conclude that the contribution to the household affects the level of depression while the opposite may be more plausible. In addition, the measure of contribution to the household has poor face validity, and the self-report of contributions is likely to be confounded by the presence of depression. The influence of the family environment on the physical and mental health of impaired and dependent elder needs more and better studies.

**46. Eakes, E.D.; Haynes, S.G.; and Feinleib, M. Spouse behavior and coronary heart disease in men: Prospective results from the Framingham Heart Study: II. Modification of risk in Type A husbands according to the social and psychological status of their wives.** *American Journal of Epidemiology* **118:23-41, 1983.**

See Haynes et al. 1983 for annotation.

**47. Earp, J.L.; Ory, M.G.; and Strogatz, D.S. The effects of family involvement and practitioner home visit on the control of hypertension.** *American Journal of Public Health* **72:1146-1153, 1982.**

**Problem**

To determine the relative effectiveness of two social support strategies (home visit and home visit with family involvement) in lowering blood pressure in hypertensive patients.

**Methodology**

*Randomized controlled trial.* A subject set of 118 hypertensives on medication who were primarily black were randomly assigned to one of three groups. The control group received routine care. The home visit group received routine care plus home visits (average of five visits over the 18-month intervention period). The family involvement group received routine care and home visits, and a family member (usually the spouse) was encouraged to actively participate in regular home blood pressure monitoring. Blood pressures were measured at the end of 1 and 2 years.

**Results**

All three groups had an equal decline in diastolic blood pressure at 1 year, which was statistically significant. At 2 years (6 months after home visiting stopped), there was a further decline (of borderline significance [$p$=.07]) in both intervention groups. There was no demonstrated advantage in adding family involvement to home visits.

**Comments**

Since the effects of home visits on compliance have been shown to disappear once the visits have stopped, the hypothesis of this study was that family involvement would preserve the effect. However, 6 months (after the home visits stopped) may be too soon to show a differential effect. Considering the cost of home visits, it may have been more appropriate to compare family involvement in the office or clinic versus in the home.

**48. El-Guebaly, N., and Offord, D. The offspring of alcoholics: A critical review.** *American Journal of Psychiatry* **134:357-365, 1977.**

**Problem/Methodology**

This review of the effects of parental alcoholism on the offspring of alcoholics focuses on the methodological problems in this research, including sample selection and diagnostic criteria for parental alcoholism

and emotional disturbances in the offspring. The studies are divided by age groups of the offspring: the infant and fetal alcohol syndrome; the preschool child and child abuse; the grade-school child and symptomatology, hyperactivity, and personality characteristic; the adolescent and emotional and legal problems; and the adult and genetic and environmental influences. Suggestions for future research are made. (70 references)

**Results**

The few well-designed studies of alcoholism in pregnancy report increased infant morbidity, but fetal alcohol syndrome appears to be rare. There is conflicting evidence for a relationship between child abuse and parental alcoholism, and there are no well-controlled studies. Studies have demonstrated a higher prevalence of alcoholism, sociopathy, and hysteria in the parents of hyperactive children and suggest a genetic link. Grade-school children of alcoholics appear to have more physical and emotional symptoms than other children but use fewer psychiatric and welfare services. Studies of the adolescents have yielded conflicting results and have not separated socioeconomic factors and parental alcoholism. Twin and adoption studies have established a genetic factor in the etiology of alcoholism. Studies of early life experiences of alcoholics suggest a higher incidence of parental loss, social disruption, and poor child-rearing practices.

The authors recommend that future studies pay more attention to controlling for age, sex, education, socioeconomic class, and family disorganization. They further suggest that criteria for alcoholism and disturbance in the children be clearly defined, and that data collection be "blind."

**49. Falloon, I.R.H.; Boyd, J.L.; McGill, C.W.; Razani, J.; Moss, H.B.; and Gilderman, A.M. Family management in the prevention of exacerbations of schizophrenia: A controlled study.** *New England Journal of Medicine* **306: 1437-1440, 1982.**

**Problem**

To compare the effectiveness of family therapy with supportive individual therapy in preventing relapses of schizophrenia.

**Methodology**

*Randomized controlled trial.* Thirty-six schizophrenic patients from families with high EE were randomly assigned to receive family or individual therapy. The sociodemographic and psychiatric characteristics of

the two groups were similar. Both groups received the same amount of therapy at the same frequency and by the same therapists. The family therapy sessions were designed to help reduce the amount of family stress and to improve problem-solving skills. Exacerbations of florid and target symptoms and hospitalizations were measured over a 9-month followup.

**Results**

Family treatment showed statistically significant advantages in each measurement of symptoms and in hospitalization. Two of the family-treated patients and nine of the individually treated patients were hospitalized with mean numbers of hospital days of 0.83 and 8.39, respectively.

**Comments**

These dramatic results offer further support for the role of the family and EE in the course of schizophrenia. Potential confounding factors that may not have been equally distributed in the two groups are clinical severity of symptoms and the amount of contact with the high-EE families. The family treatment group did have a higher compliance rate that would account for some of its advantage. In addition, the results of the trial may be partly influenced by the enthusiasm and biases of the therapists.

**50. Ferguson, K., and Bole, G.G. Family support, health beliefs, and therapeutic compliance in patients with rheumatoid arthritis.** *Patient Counseling and Health Behaviors* **Winter/Spring:101-105, 1979.**

**Problem**

To assess the relationship between compliance with medication and an exercise program and family support and belief in the benefit of treatment in patients with rheumatoid arthritis.

**Methodology**

*Cross-sectional study.* Forty patients with rheumatoid arthritis were randomly selected from an arthritis clinic. Each subject was interviewed to assess compliance with taking aspirin, exercising regularly, and using prescribed splints. In addition, they were asked whether they believed that each aspect of the medical regimen helped their arthritis and how supportive and knowledgeable their families were regarding their arthritis.

In 30 of the patients, a family member was interviewed to directly assess family knowledge and support.

**Results**

Of the variables examined, only lack of belief in benefit correlated with noncompliance with aspirin and exercise. Family support and knowledge did not correlate with any measures of compliance. None of the variables correlated with compliance with prescribed splints.

**Comments**

This study uses nonstandardized and unreliable measures of variables. Numerous studies have shown that self-report is a poor measure of compliance. Also, patients who do not comply are likely to report that they do not believe in the efficacy of the recommended treatment as a way of rationalizing (to themselves and the investigators) their noncompliance.

**51. Fergusson, D.M.; Horwood, L.J.; Gretton, M.E.; and Shannon, F.T. Family life events, maternal depression, and maternal and teacher descriptions of child behavior.** *Pediatrics* **75:30-35, 1985.** (See also Beautrais et al. 1982*a*.)

**52. Fergusson, D.M.; Horwood, L.J.; and Shannon, F.T. Relationship of family life events, maternal depression, and child rearing problems.** *Pediatrics* **73:773-776, 1984.** (See also Beautrais et al. 1982*a*.)

**Problem**

To examine the relationships between child behavioral problems, maternal depression, and family stress.

**Methodology**

*Cross-sectional studies.* These three studies come from the Christchurch Child Development Study, a cohort study of 1,265 children born in New Zealand and studied yearly. The first study (Beautrais et al. 1982*a*) uses data from years 1 through 4, the second (Fergusson et al. 1984) from year 4 to 5, and the third (Fergusson 1985) from year 5 to 6. Variables measured during the first 4 years included maternal reports of child-rearing problems (from a structured interview) and a Family Life Events score derived from a reduced version of the Holmes and Rahe

Scale. During the 5th and 6th year, maternal depression was assessed with a modified version of the Levine-Pilowsky Questionnaire. For the 6th year, the Rutter Child Behavior Questionnaire was used to assess childhood behavior and administered to both the mothers and the children's teachers. Numerous family and social background characteristics were measured each year and were controlled for. These included maternal age and ethnic background and several measures of socioeconomic status.

**Results**

During the first 4 years, there was a strong correlation between family life events and maternal reports of child-rearing problems, which persisted when family and social background variables were controlled for. Mothers who experienced more than four life events reported 2 1/2 times as many child behavior problems as mothers who experienced no life events.

When the children in the cohort were 5 years old and maternal depression was assessed, a correlation between family life events and both child behavior problems and maternal depression was found. When maternal depression was controlled for, the correlation between life events and maternal perception of childhood behavior disappeared. The authors hypothesized that the effect of family stress on childhood behavior was mediated by maternal depression.

During the 6th year of the followup, teacher assessment of childhood behavior was added and found to have little correlation with maternal assessments ($r$=.27). Teacher's assessment of childhood behavior was significantly associated with long-term (over 5 years) family life events but not maternal depression. Maternal assessment of childhood behavior was independently associated with both maternal depression and long-term life events. Very little of the variance of child behavior was explained by either maternal depression or life events. The authors conclude from these three studies that family life events made a small but independent contribution to childhood behavior and maternal depression. Maternal depression appeared to affect the mothers' perception of their children's behavior.

**Comments**

These well-designed studies demonstrate the importance of exploring alternative explanations for the results of previous studies. The third study suggested that the relationship between family life events and child-rearing problems was primarily the result of maternal depression, which affected the mother's perception of the child. While these studies followed a cohort of children, each study is cross-sectional and examines

relationships between the numerous variables at one point in time. With the exception of the long-term life events score, which used previously recorded scores, there is no prospective evaluation. Therefore, causal inferences from these data are risky.

**53. Fitzgerald, J.L., and Mulford, H.A. Alcoholics in the family? *International Journal of the Addictions* 16:349-357, 1981.**

**Problem**

To compare the self-reported and diagnosed rates of alcoholism in the families of alcoholics and nonalcoholics, and to assess the relationship between the history of alcoholic relatives and treatment outcome.

**Methodology**

*Comparison of cross-sectional studies.* The results of six studies of alcoholism in the relatives of alcoholics (N=2,897) were compared. Three studies used self-reports and the other three used "professional diagnosis." A State population survey in Iowa in 1961 (N=1,179) inquired about alcohol abuse in the respondents and in their relatives. Alcoholics entering Iowa's treatment centers were asked about alcoholism in their relatives and were scored for the severity of their alcoholism (Alcohol Stages Index). Return to one of the treatment centers over the following 3 years was recorded.

**Results**

Self-report studies have reported fewer alcoholic relatives than studies using professional diagnosis, but the difference was statistically significant only for alcoholism reported versus diagnosed in male alcoholics' fathers (15 percent versus 25 percent). In the population survey, alcoholics reported more alcoholism in their families (38.9 percent), than the rest of the population (30.3 percent), but the difference was not statistically significant. There was no relationship between the severity of alcoholism or return to treatment and the report of alcoholism in relatives.

**Comments**

Uncontrolled studies have reported high rates of alcoholism in the relatives of alcoholics and suggest strong genetic or environmental influences. This population survey demonstrates high rates of alcoholism in the relatives of nonalcoholics. Only the fathers of alcoholics had significantly higher rates.

**54. Garfinkel, B.D.; Froese, A.; and Hood, J. Suicide attempts in children and adolescents.** *American Journal of Psychiatry* **139:1257-1261, 1982.**

**Problem**

To determine the characteristics of children and adolescents who attempt suicide.

**Methodology**

*Case-control study.* All children and adolescents seen for suicide attempts in the emergency room of a large-city children's hospital over a 7-year period were the cases studied (N=505). Controls were chosen from patients of the same age and sex who were admitted through the emergency room around the same time as each case and who did not have a history of suicide attempt. Sociodemographic and clinical data were obtained from each chart and the seriousness of the suicide attempts was assessed.

**Results**

In terms of family data, the cases' families were significantly more likely than the controls to have a history of psychiatric illness (primarily alcoholism and drug abuse), a history of suicide, paternal unemployment, or parental absence.

**Comments**

Methodological problems with this study include potential bias in the data collection and failure to match for significant variables. Family history of psychiatric illness is often omitted or withheld during a medical examination and may not have been recorded for the controls. Lower social class is known to be associated with higher prevalence of psychiatric illness and suicide and may account for the association with family problems and disruptions. If these associations are valid, the direction of the effects (child affecting the family or vice versa) or the mechanism (genetic versus environmental) cannot be determined from this type of research design.

**55. Gillum, R.F.; Prineas, R.J.; Gomez-Marin, O.; Finn, S.; and Chang, P. Personality, behavior, family environment, family social status and hypertension risk factors in children: The Minneapolis children's blood pressure study.** *Journal of Chronic Diseases* **38:187-194, 1985.**

**Problem**

To assess the relationship between psychosocial variables and blood pressure in children.

**Methodology**

*Cross-sectional study.* A sample of 2,640 children was selected from among all of the first, second, and third graders in the Minneapolis Public School System. Of these children, 1,508 and their families were interviewed at home. The families were administered the following instruments: the Missouri Children's Picture Series (MCPS), which has eight scales of childhood personality; the Missouri Children's Behavior Checklist (MCBC), which includes six scales of childhood behavior; the Family Environment Scale (FES); and a recent life events questionnaire. The child's blood pressure, height, and weight were measured, and demographic information about the family was collected.

**Results**

There were no significant relationships between the child's blood pressure and any measures of the child's personality, behavior, or family environment, even when a high-risk subsample was examined. Children of mothers employed in unskilled labor had significantly higher blood pressure than those whose mothers had higher status work or were homemakers. The children's body mass index correlated with scores on the conformity scale of the MCPS and inversely correlated with the intellectual/cultural orientation scores on the FES and with social class. When social class was controlled for, the intellectual/cultural scores remained significant.

**Comments**

This study did not confirm the researchers' initial hypothesis that personality traits that are associated with hypertension in adults would also be correlated with blood pressure in children. It appears that social status, including mother's occupation, correlates better than personality or family factors with blood pressure in children.

**56. Goldstein, M.J. Family factors that antedate the onset of schizohrenia and related disorders: The results of a fifteen year prospective longitudinal study.** *Acta Psychiatrica Scandinavica* **71(Sup 319):7-18, 1985. (*See also* Doane et al. 1981.)**

**Problem**

To determine whether parental communication deviance (CD) and affective attitudes of the family (expressed emotion [EE] and affective style [AS]) predict the subsequent development of schizophrenia in a high-risk population.

**Methodology**

*Prospective cohort study.* Sixty-four disturbed, nonpsychotic adolescent outpatients and their families were assessed in detail and followed for 15 years. Parental CD was scored from the parents individual Thematic Apperceptions Tests (TAT) using a method derived and previously validated by Jones (1977). Affective attitudes of the family toward the adolescent were assessed by two methods. EE was measured from interviews with the parents in a manner similar to the Camberwell Family interview (Vaughn and Leff 1976). EE scores were based largely on criticisms made by the parents about the adolescent. AS was assessed from observed family interactions and constructed to resemble the concept of EE. Major categories included support, criticism, guilt induction, and intrusiveness. Of the original cohort, 54 were reassessed 5 years (Doane et al. 1981) and 15 years (Goldstein 1985) after the original family assessment, using standardized psychiatric interviews. This subset of adolescents was not significantly different from the original cohort in any of the family variables. Four different categories of diagnoses were used: narrow schizophrenia spectrum (including schizophrenia, schizotypal, and paranoid personality), extended schizophrenia spectrum (included narrow spectrum plus schizoid and borderline personalities), other major psychiatric illness, and no psychiatric illness.

**Results**

At the 15-year followup, both high CD and negative AS independently predicted the development of extended schizophrenia spectrum disorders but not other psychiatric illnesses. EE was not significantly predictive when AS was controlled for. The association of AS and CD with narrow-spectrum disorders reached borderline statistical significance. The adolescents' initial behavior problems were not predictive of their psychiatric outcome and, when controlled for, did not change the predic-

tive power of AS and CD. Parental CD was also associated with the development of a spectrum disorder in the siblings of the adolescents.

### Comments

This is the best prospective study of family factors in the development of schizophrenia, and the results are very impressive. CD and AS appear to measure different aspects of family relationships and each are associated with the development of schizophrenia. The direct observation of a family's affect (AS) predicts better than an indirect assessment (EE). Controlling for the type of initial behavior problems makes it less likely that CD or AS are a response to preschizophrenic behavior.

## 57. Gore, S. The effect of social support in moderating the health consequences of unemployment. *Journal of Health and Social Behavior* 19:157-165, 1978.

### Problem

To examine the effect of social supports on the physical and mental health consequences of involuntary job loss.

### Methodology

*Prospective cohort study.* One hundred stably employed, married men were followed over a 2-year period during which they became unemployed due to plant shutdowns (one rural, one urban). This group was compared to a control group of employed men in comparable jobs. Independent variables measured included weeks unemployed, economic deprivation due to unemployment, and social supports (perception of support by family and relatives and satisfying social activities outside the home). The outcome variables were depression and self-blame, illness symptoms (number of complaints over 2 weeks), and level of serum cholesterol. Both groups were assessed at five separate times, 6 weeks before the anticipated shutdown of the plant, 1 month, 6 months, 1 year, and 2 years after the shutdown.

### Results

The control group had more health problems and concerns than the cases so the groups were not compared on that basis. There was no relationship between length of unemployment and social supports. The rural unemployed had more social supports than the urban unemployed. There was a significant drop in serum cholesterol during the study period for all

men except those who remained unemployed and had low social supports. There was no significant change in the number of illness symptoms during the 2-year period.

**Comments**

It is difficult to interpret changes in cholesterol levels and illness symptoms without adequate controls or baseline values. Cholesterol level is not a very good physiological measure of stress.

**58. Graeven, D.B., and Schaef, R.D. Family life and levels of involvement in an adolescent heroin epidemic.** *International Journal of the Addictions* **13:747-771, 1978.**

**Problem**

The relationship between different measures of family life and the levels of involvement in a heroin epidemic was examined.

**Methodology**

*Cross-sectional study.* Seventy-six adolescent heroin addicts, 44 experimenters with heroin, 36 exposed persons (physically present when heroin was being used), and 47 controls underwent semistructured, indepth interviews concerning their family lives. Family variables measured included intact or broken home, emotional cohesion, behavorial integration with the family, supportive interaction, conflict interaction, external control, and evaluation of parents.

**Results**

Family variables significantly correlated with heroin use by males were less intimacy with both parents, high conflict between parents and with children, and broken homes. Female involvement with heroin was associated with less closeness with both parents, less intimacy with and lower evaluation of the father, less participation in family activities, more family rules, and more conflict between parents and children. Using a stepwise regression analysis, male heroin use was explained most by poor relationship with the mother and conflict at home, while female heroin use was explained more by the relationship with the father. These same variables explained the use of other drugs (psychedelics, amphetamines, barbiturates) but not marijuana or alcohol.

**Comments**

This study contradicts studies showing that male addicts are more closely attached to their mothers. Two explanations offered for this discrepancy are that this study focused on a total population (versus those in treatment) and involved white middle-class users (versus minority lower class users).

**59. Grey M.J.; Genel, M.; and Tamborlane, W.V. Psychosocial adjustment of latency-age diabetics: Determinants and relationship to control.** *Pediatrics* **65:69-73, 1980.**

**Problem**

To examine the relationship between psychosocial adjustment, family functioning, self-esteem, and diabetic control.

**Methodology**

*Cross-sectional study.* Twenty diabetic children between ages 6 and 13 and their families were studied during a home visit. Psychosocial adjustment of the child was evaluated using the Rodgers' Parent Interview which measures nine categories of adjustment. Parental (principle caretaker) and child's self-esteem were measured with the Coopersmith Objective Self Report. The Pless and Satterwhite's Family Functioning Index (FFI) measured the following aspects of the family: intrafamily communication, cohesiveness, decisionmaking, marital satisfaction, and level of happiness and closeness of the family unit. Each of these psychosocial instruments have been previously validated and found to be reliable. Diabetic control was assessed with a single 24-hour measure of urinary glucose.

**Results**

Of the children, 55 percent showed moderate-to-severe psychosocial maladjustment that was significantly related to diabetic control. Psychosocial adjustment, parental and child self-esteem, and family functioning were all interrelated. However, when each of the other factors were controlled for, only parental self-esteem was correlated to family functioning and the child's psychosocial adjustment, suggesting that parental self-esteem accounts for much of the dysfunction seen in these families.

**Comments**

This well-designed study illustrates the complexities of the interrelationships between family and individual functioning and disease control. The Family Functioning Index was originally developed to measure the family consequences of chronic disease, but the authors speculate that because the parental self-esteem appears to be of primary importance for family functioning and psychosocial adjustment, it may account for some of the poor diabetic control.

**60. Haynes, S.G.; Eakes, E.D.; and Feinleib, M. Spouse behavior and coronary heart disease in men: Prospective results from the Framingham Heart Study. I. Concordance of risk factors and the relationship of psychosocial status to coronary incidence.** *American Journal of Epidemiology* **118:1-22, 1983.** (See also Eakes et al. 1983.)

**Problem**

These two reports from the same study examine the relationships between the incidence of coronary heart disease (CHD) in men and the social status (occupation and education) and behavior type (A versus B) of their wives.

**Methodology**

*Prospective cohort study.* Extensive psychosocial questionnaires were completed by 269 couples with no evidence of heart disease, and the couples were followed for 10 years for the development of CHD (angina or myocardial infarction). The incidence of CHD in the men was correlated to educational and occupational level and behavior type of their spouses, while controlling for potential confounders (traditional coronary risk factors).

**Results**

Men who were married to women who had more than a high school education and worked outside the home were 2.6 times more likely to develop CHD than men married to women with a grammar school education. Men married to women in white-collar jobs were more than three times more likely to develop CHD than men married to clerical workers, blue-collar workers, or housewives. These wives were also more likely to have a nonsupportive boss and fewer job promotions than wives of men who did not develop CHD.

The difference in CHD incidence between Type-A and Type-B men existed only for men married to women with more than a high school education (Relative Risk [RR]=2.5) or who were employed outside the home (RR=3.5). Type-A men were more likely to develop CHD if married to Type-B wives. All of these results were apparent regardless of the husbands' standard coronary risk factors.

**Comments**

Since much of the examination of psychosocial factors in the Framingham Study has focused on intrapersonal factors (Type-A personality, stress, somatic strain, and reaction to anger) and not interpersonal factors (social supports), it's not surprising that this study focused on individual characteristics of husband and wife rather than some aspect of their relationship. One interpretation of the results is that men, particularly Type-A men, are susceptible to the occupational stress of their spouse, especially if she does not tend to respond as he does (i.e., if she is Type B).

**61. Haynes, S.G.; Feinleib, M.; and Kannel, W.B. The relationship of psychosocial factors to coronary heart disease in the Framingham Study: III. Eight-year incidence of coronary heart disease.** *American Journal of Epidemiology* **111:37-58, 1980.**

**Problem**

To examine the relationship between a broad range of psychosocial factors and the development of coronary heart disease (CHD) (myocardial infarction or angina) over an 8-year period.

**Methodology**

*Prospective cohort study.* An extensive psychosocial questionnaire that measured behavior type (A versus B), reactions to anger, situational stress (including marital dissatisfaction and disagreement), sociocultural mobility, and somatic strain was completed by 1,674 participants in the Framingham Heart Study who had no evidence of heart disease. The participants were followed closely over the next 8 years for the development of CHD. The relationship between psychosocial factors, traditional risk factors, and the development of CHD was assessed with multivariate analysis.

**Results**

Type-A behavior and suppressed anger were associated with the development of CHD in men and women, when controlling for other factors. There was no relationship between marital dissatisfaction or disagreement and CHD.

**Comments**

Despite the extensive psychosocial questionnaire, there were only two questions regarding family factors (marital dissatisfaction and disagreement). This well-designed study contradicts the findings of the Israeli Ischemic Heart Disease Study (Medalie and Goldbourt 1976).

**62. Heinzelman, F., and Bagley, R.W. Response to physical activity programs and their effects on health behavior.** *Public Health Reports* **85:905-911, 1970.**

**Problem**

To examine the relationship between psychosocial factors, including wife's attitude, and adherence to a program in physical activity.

**Methodology**

*Cross-sectional study.* A sample of 239 sedentary men aged 45 to 59 with significant cardiac risk factors were enrolled in an exercise program. Before the start of the program and every 3 months during the program (18 months), the participants completed questionnaires on some aspect of the program.

**Results**

The participants did not think their decision to join the program was influenced by their wives, but 80 percent of the participants whose wives' attitudes were positive had excellent or good adherence to the program while only 40 percent of those whose wives' attitudes were neutral or negative adhered well.

**Comments**

Unfortunately, one cannot tell from this report whether the report of the wife's attitude came before, during, or after the program. Other problems with the study are obvious.

**63. Heisel, J.S.; Ream, S.; Raitz, R.; Rappaport, M.; and Coddington, R.D. The significance of life events as contributing factors in the diseases of children: III. A study of pediatric patients.** *Journal of Pediatrics* **83:119-123, 1973.**

**Problem**

To assess the relationship between preceding life events and a number of illnesses in children.

**Methodology**

*Cross-sectional study.* The parents of five distinct pediatric patient populations were questioned regarding significant life events (mostly family events) over the year prior to the onset of the child's illness using Coddington's modification of the Holmes and Rahe Scale. These values were compared to previously obtained values for healthy children (not age matched). The patients included 34 children with juvenile rheumatoid arthritis, 35 with hemophilia, 32 admitted to the general pediatric service, 31 admitted for appendectomies or herniorrhaphies, and 88 seen in the child psychiatric clinic.

**Results**

All the children except the hemophiliacs had three to four times the expected number of recent life event during the previous year.

**Comments**

This was the first study by Coddington and his colleagues using his modification of the Holmes and Rahe Scale in ill children. It suffers from all the problems of life event studies.

**64. Helsing, K.J., and Szklo, M. Mortality after bereavement.** *American Journal of Epidemiology* **114:41-52, 1981.**

65. **Helsing, K.J.; Szklo, M.; and Comstock, G.W. Factors associated with mortality after widowhood.** *American Journal of Public Health* **71:802-809, 1981.**

**Problem**

To examine the relative mortality rates after bereavement and the factors associated with increased mortality.

**Methodology**

*Prospective cohort (population-based) study.* A sample of 4,032 persons widowed in Washington County, Maryland, between 1963 and 1974 were matched with a married person by age, sex, year of birth, and geography of residence. Both groups were followed for subsequent mortality until 1975. Variables in which the two groups differed (potential confounders) and were controlled for included education, smoking, age at first marriage, frequency of church attendance, and number of bathrooms in domicile.

**Results**

When the potential confounding variables were controlled for in a multivariate analysis, widowers aged 55 to 64 and 65 to 74 had significantly increased mortality rates, compared to the married group. There were no higher mortality rates for the widowers in the first 6 or 12 months of bereavement when compared to subsequent years. There was no increased mortality amongst the widows. Mortality rates for the widowers who remarried were much lower than for those who did not remarry and were even lower than the married group. Living alone or moving into a chronic care facility was associated with higher mortality in the bereaved group, when other factors were controlled for.

**Comments**

This is the best study of the mortality of bereavement because it matches or controls for factors that might explain mortality differences between the married and widowed population. The lower mortality of the remarried widowers may be due to a selection of the healthiest for remarriage rather than a protective effect of marriage as the authors suggest.

66. **Heron, J.M., and Leheuf, R.F. Happy families?** *British Journal of Psychiatry* **145:136-138, 1984.**

**Problem**

To compare adolescent anorectic patients with other adolescents admitted to a psychiatric services.

**Methodology**

*Cross-sectional study.* The hospital records of 16 adolescent anorectics were compared to 40 nonanorectic psychiatric adolescent patients evaluated at approximately the same time. A series of sociodemographic, individual, and family characteristics were obtained from the patients' charts.

**Results**

For family variables, there was no difference in the percent of intact families in the two groups. The anorectic families were described as closer and more exclusive. The controls expressed more dissatisfaction with their families and described more external stress.

**Comments**

This study demonstrates the dangers of poorly designed research in perpetuating unsubstantiated beliefs. Beliefs about the families of anorectics are likely to influence what information is obtained and recorded in the chart. The chart reviewers are also influenced by these beliefs and the hypotheses of the study, which adds further bias to the results.

**67. Hoebel, F.C. Brief family-interactional therapy in the management of cardiac-related high-risk behaviors.** *Journal of Family Practice* **3:613-618, 1976.**

**Problem**

A report from the Brief Therapy Center at the Mental Research Institute, Palo Alto, California, on the use of strategic/interactional therapy in the treatment of high-risk cardiac behaviors.

**Methodology**

*Case reports.* The wives of "difficult cardiac patients" who would not change their high-risk behavior (smoking, diet, lack of exercise, and Type-A behavior) were seen in treatment for a maximum of five hourly ses-

sions. The author showed the women how their own behaviors were maintaining the high-risk behaviors of their husbands and taught them what they could do to modify their husbands' behaviors.

**Results**

In seven of the nine cases reported there was significant change in one or more of the husband's high-risk behaviors.

**Comments**

Although there were no controls, this report represents an innovative approach to risk behavior modification using the concept of feedback loops from systems theory.

**68. Horne, R.L., and Picard, R.S. Psychosocial risk factors for lung cancers.** ***Psychosomatic Medicine*** **41:503-514, 1979.**

**Problem**

To assess the relative risk of selective psychosocial factors in the development of lung cancer.

**Methodology**

*Prospective cohort study.* A semistructured interview that rated five psychosocial factors: childhood instability, job and marriage stability, plans for the future, and recent significant loss was given to 110 men with abnormal chest X-rays suspicious of malignancy. Patients were scored on a scale from one to five for each of the five factors, and these were summed for a total psychosocial risk factor score. Potential confounding variables measured were smoking history, carcinogen exposure, psychiatric diagnoses, duration of symptoms, and diagnostic impressions of the admitting physician. Final pathological diagnosis was made in a review of the chart 15 to 38 months later.

**Results**

The composite psychosocial scale correctly predicted 53 of 66 patient with benign disease (80 percent specificity) and 27 of 44 with malignant disease (61 percent sensitivity). Job stability, lack of plans for the future, and recent significant loss were all significantly correlated with a diagnosis of malignancy but childhood instability and marital stability were not.

There was no relationship between the admitting physician's diagnosis and plans for the future or the final diagnosis. In a multivariate analysis, smoking contributed equally with the psychosocial scale in predicting malignancy.

**Comments**

This study is one of the best attempts to look at the influence of psychosocial factors in cancer. However, it shows no correlations with family measures. It is perplexing that the authors predicted that marital stability would be associated with an increased risk of cancer.

**69. House, J.S.; Robbins, C.; and Metzner, H.L. The association of social relationships and activities with mortality: Prospective evidence from the Tecumseh Community Health Study.** *American Journal of Epidemiology* **116:123-40, 1982.**

**Problem**

To examine the association between social relationships and activities and mortality.

**Methodology**

*Retrospective cohort study.* By interviews and medical examinations, 2,754 adults in the Tecumseh Community Health Study were assessed and followed for 12 years. Measures of social relationships and activities included intimate social relationships (e.g., marital status, visits with friends and relatives, going on pleasure drives), formal organizational involvement outside work (e.g., church, voluntary associations), active social and leisure activities (e.g., attending spectator events, classes, or lectures), passive solitary activities (e.g., watching TV, reading), and satisfaction with each of the above. Other variables measured and controlled for were physical health (by extensive history, physical examination and laboratory tests), smoking and alcohol use, education, employment,and occupation. The factors associated with mortality in this cohort were included in a multivariate analysis of survival with the social variables.

**Results**

For men, social variables associated with lower mortality at 12 years included marital status (RR=1.93), attending meetings of voluntary associations (RR=2.8), and going out to spectator events or classes. The only significant social variable for women was attending church (RR=1.86). A

derived Index of Social Relationships and Activities was strongly correlated with survival in men but not women. The relationship between the index and survival in men was not linear. There was a threshold of social relationships above which there was no further protection. There was no relationship between satisfaction with any of the social variables and mortality, and the variables did not interact with previous health status.

**Comments**

This study's design is very similar to the Alameda County Study (Berkman and Syme 1979), except for slightly different measures of social support and the use of more objective measures of previous health status. However, it is unlikely that these differences account for weaker association between social supports and survival.

**70. Huygen, F.J.A. Family surveys. Ch. XI-XV. In: Huygen, F.J.A.** *Family Medicine: The Medical Life Histories of Families.* **New York: Brunner/Mazel, 1978*a*. Pp. 93-133.**

**Problem**

To examine the relationships between different family members' illness behaviors and physician's diagnoses and psychosocial factors.

**Methodology**

*Cross-sectional study.* These chapters in Huygen's book describe four separate but similar studies. In the first two, he studied 100 younger and 100 older families by chart review. Psychosocial characteristics were assessed subjectively and consensually by the health care team. In the third study, 100 three-generation families were chosen from the previously studied 200 families and were interviewed at home by trained medical students for psychosocial characteristics. Finally, an additional 200 families were randomly chosen from the author's practice and interviewed at home. No psychosocial instruments or structured questionnaires were used.

**Results**

In the younger and older families there was a significant correlation between the number of diagnoses but not the number of physician visits (consultations) for each parent and the children. The number of children's disorders was significantly correlated to neurotic instability of the parents and poor marital relationship. The relationship between chil-

dren's disorders and poor marital relationship was confirmed in the study of the three generation families from this sample who were assessed at home, while the relationship with parental neurotic instability was not confirmed. The final study found significant concordance among family members for a number of health-related variables, including number of symptoms experienced, readiness to seek medical help, medical knowledge, confrontation with serious illness, and number of contacts with family doctor.

**Comments**

Assessing psychosocial variables by physician consensus and recollection or with unstructured interviews by medical students is unlikely to be valid or reliable. The number of physician's diagnoses and visits to the physician has poor correlation with other measures of morbidity and measures illness behavior that is highly dependent on psychosocial factors.

**71. Huygen, F.J.A. Family therapy. In: Huygen, F.J.A.** *Family Medicine: The Medical Life Histories of Families.* **New York: Brunner/Mazel, 1978*b*. Pp. 134-142.**

**Problem**

To evaluate the impact of family therapy on illness behavior.

**Methodology**

*Retrospective cohort study.* Twenty-eight problem families who had received family therapy were randomly chosen and matched with control families for family composition, ages of family members, and social level. The number of visits to the physician and the number of prescriptions per month were recorded.

**Results**

The problem families had significantly more visits and prescriptions than the controls before and after referral to family therapy. There was a significant decline in the number of prescriptions and a nonsignificant decline in the number of physician visits after referral to family therapy.

**Comments**

It's not clear why the control group is included in this study except to show there was no secular decline in visits or prescriptions during that period. The decrease in prescriptions represents a change in physicians' behavior, which may have been affected by the referral. (Did the therapist request that psychotropic drugs be stopped?) Also, was there any decline in the total number of visits (physician and family therapy) after referral, or did the family therapy visits substitute for physician visits?

**72. Jacob, T.; Dunn. N.J.; and Leonard, K. Patterns of alcohol abuse and family stability.** *Alcoholism: Clinical and Experimental Research* **7:382-385, 1983.**

**Problem**

To assess the relationships between drinking patterns, psychiatric symptoms, and marital satisfaction.

**Methodology**

*Cross-sectional.* Twenty-seven male alcoholics and their spouses were administered the MMPI, Beck Depression Inventory (BDI), Locke-Wallacee Marital Adjustment Test and Dyadic Adjustment Scale, and the Quantity Frequency Index (which measures the amount of alcohol consumed in the past 30 days). In addition, subjects were categorized as steady or binge drinkers using the Marlatt Drinking Profile.

**Results**

Alcoholics who consumed large amounts of alcohol in the previous month were less symptomatic (on MMPI and BDI) and had less symptomatic wives and better marital relationships than those who drank less. This correlation persisted when only steady drinkers were analysed. No correlation between alcohol consumption and symptoms was found for the binge drinkers. Binge drinkers were involved in more sociopathic behavior, had greater psychopathology, and drank more of their alcohol outside the home than the steady drinkers.

**Comments**

These findings emphasize the importance of considering the pattern as well as the quantity of alcohol use. In the subgroup of steady drinkers, high alcohol consumption is associated with improved marital relation-

ship, but a causal relationship cannot be determined. This study offers some indirect evidence for Steinglass's hypothesis that alcohol serves an adaptive function in alcoholic families.

**73. Jacob, T.; Favorini, A.; Meisel, S.S.; and Anderson, C.M. The alcoholic's spouse, children and family interactions: Substantive findings and methodological issues.** *Journal of Studies on Alcohol* **39:1231-1251, 1978.**

**Problem/Methodology**

A review of empirical studies on the personality traits and characteristics of alcoholics' spouses, the psychological and social status of children of alcoholics, and the interaction between alcoholics and their families. (98 references)

**Results**

Early case studies and uncontrolled research on the wives of alcoholics suggested that these women had unconcious neurotic needs that led them to choose alcoholic husbands and reinforce their continued drinking. More recent and better designed studies have failed to support this hypothesis. Studies on husbands of alcoholics are limited but suggest that they have higher rates of problem drinking and alcoholism than the general population. This appears to be due to assortative mating.

Much of the research on children of alcoholics lacks appropriate control groups. Studies do suggest that children of alcoholics exhibit more difficulties in psychological, social, and family functioning than normal or psychiatrically disturbed control groups. Whether these problems are due to alcoholism in the family or overall family dysfunction cannot be determined. Few of these studies controlled for potentially confounding variables such as social class, family size, and religious status. Assessments of the families in these studies were based exclusively on self-reports.

Studies of alcoholic-spouse interactions during abstinence and intoxication suggest that drinking behavior may have adaptive consequences and stabilize marital relationships. In comparison to normal controls, alcoholic couples appear to be more competitive and rigid. Wives of alcoholics look at their husbands more when they are discussing alcohol.

The authors call for the integration of alcohol research with more general theories and research on marriage and families and for more systemic research on family interactions in alcoholism.

**74. Jacob, T.; Ritchey, D.; Cvitkovic, J.F.; and Blane, H.T. Communication styles of alcoholic and non alcoholic families when drinking and not drinking.** *Journal of Studies on Alcohol* **42:466-482, 1981.**

**Problem**

Congruence in communication, expression of affect, and problem solving were assessed in the family interactions of alcoholic and nonalcoholic families during drinking and nondrinking conditions.

**Methodology**

*Quasi-experimental study.* Eight healthy and intact alcoholic familes with two or more children were matched with nonalcoholic families for age of alcoholic, family size, religion, years married, education, and occupation. Subgroups of each family (father-mother, father-children, mother-children) were asked to discuss their individual responses to a previously administered questionnaire (Revealed Differences Questionnaire) and agree upon a joint opinion. The interactions were videotaped and scored by raters blinded to the purpose of the study for positive and negative affect; instrumental behavior and agreement using the Marital Interaction Coding System; and for communication congruence using nonverbal, verbal, and content measures. Each session was repeated, and during one of the sessions, alcoholic beverages were provided. Blood alcohol levels were obtained before and after each session.

**Results**

There was no significant difference in communication congruence between the alcoholic and nonalcoholic couples. Alcoholic couples expressed more negative and less positive affect than the controls, which increased when alcohol was introduced. The wives of the alcoholics were relatively more instrumental and contributed more task relevant communications than the control spouses. In the interactions with children, the alcoholic fathers exhibited relatively less instrumental and problem-solving behaviors, while their spouse used relatively more of such behaviors than the controls.

**Comments**

This study offers partial support for the hypothesis that spouses of alcoholics assume more of the executive functions within a family (e.g., leadership, assertiveness, and problem solving). The imbalance became

greater with more negative affect expressed when alcohol was introduced. This finding suggests that these changes in family functioning are at least in part due to the alcoholic behavior. However, without a psychiatrically impaired control group, one cannot tell whether these findings are specific to alcoholic versus disturbed families.

**75. Jacobs, S., and Ostfeld, A. An epidemiological review of the mortality of bereavement.** *Psychosomatic Medicine* **39:344-357, 1977.**

**Problem/Methodology**

Review of the studies of the mortality of bereavement; four major studies using vital statistics and four cohort studies are reviewed in detail and compared. Alternative explanations for the results are discussed. (37 references)

**Results**

The authors conclude that there is a sizeable increased risk of mortality after conjugal bereavement that cannot be explained entirely by homogamy or joint unfavorable environment. The effect appears to be greater in men and occurs during the first 2 years of bereavement.

**76. Janzen, C. Families in the treatment of alcoholism.** *Journal of Studies on Alcohol* **38:114-130, 1977.**

**Problem/Methodology**

Review of the literature on the family treatment of alcoholism. Twenty-four reports on the use of family therapy in the treatment of alcoholism were examined. Different methods of and rationales for family treatment are discussed. (52 references)

**Results**

Family treatment is best defined as treatment including one or more family members in addition to the alcoholic. There is no specific theory of family and alcoholism on which family treatment can be based. Systems theory suggests the need to intervene in family interaction patterns. There is strong indication that family treatment for alcoholism can be effective alone or in conjunction with additional treatment. Due to data

limitations, it is not possible to show that family treatment is as good or better than other forms of treatment for alcoholism.

**77. Johnson, S.B. Psychosocial factors in juvenile diabetes: A review.** *Journal of Behavioral Medicine* **3:95-116, 1980.**

**Problem/Methodology**

Review of studies on the influence of psychosocial factors on the onset and course of diabetes and the influence of diabetes on the psychosocial development of the child. Studies are reviewed in detail and methodologies are critically assessed. (71 references)

**Results**

The author concludes that there is no adequate research to support the hypothesis that emotional stress is a precipitating factor in the onset of diabetes or that a particular personality style is associated with diabetes. Studies do suggest that stress has direct metabolic effects that can influence diabetic control. Chronic stress and disruption in families of diabetics appears to be associated with poor diabetic control. Other aspects of families associated with poor control are high anxiety, overindulgence, excessive control, resentment and rejection, and disinterest and neglect.

**Comments**

This review is one of the best recent papers on psychosocial and family factors in diabetes. It examines the limitations of the research in this area and suggests directions for future research including improved methodologies.

**78. Kaufman, E. Family system variables in alcoholism.** *Alcoholism: Clinical and Experimental Research* **8:4-8, 1984.**

**Problem/Methodology**

A review of the relationship between family functioning and alcoholism. Research on four aspects of family alcoholism are reviewed: family reactivity patterns, ethnic family styles, gender of the alcoholic spouse, and stages of alcoholism. (24 references)

## Results

Four types of family alcoholic systems are discussed. The functional family system is relatively stable and uses denial to isolate the alcoholic behavior. Family education and cognitive approaches are most successful with these families. Neurotic, enmeshed family systems are characterized by poor communication, projection of blame, intergenerational coalitions and overinvolvement with the alcoholic. Helping to disengage the family from the alcoholic can be assisted by Alcoholics Anonymous, Al-Anon, and Ala-teen. The alcoholic in a disintegrated family system presents without any family members. Family interventions can only be made after abstinence and personal stability has been obtained. The absent family system is characterized by total loss of the family of origin early in the drinking career. Interventions in these systems are limited to significant social contacts and encouraging contacts with peer groups such as Alcoholics Anonymous.

Ethnic family styles must be considered in the family treatment of alcoholics. The family dynamics of Irish-American, Italian-American, and black families are contrasted. Research on female alcoholics suggests that they have different family dynamics and may require different intervention strategies. The stage of alcoholism is a critical variable in the treatment of alcoholic families and has been rarely addressed in the research on alcoholism and the family.

**79. Kellam, S.G.; Ensminger, M.E.; and Turner, R.J. Family structure and the mental health of children.** *Archives of General Psychiatry* **34:1012-1022, 1977.**

## Problem

To describe the different family structures in a poor urban community and their relationship with the mental health of the children in the families.

## Methodology

*Cross-sectional and prospective study.* Approximately 1,200 first graders and their families from a poor, predominately black, urban community were extensively evaluated initially and 2 years later. Family types were classified according to the adults present at home. Two dimensions of the mental health of the children were assessed. Psychological well-being was determined by bizarre behavior, flatness, hyperkinesis, and symptoms of anxiety and depression as rated by clinicians, the childrens' mothers, and the children themselves. Social Adaptational Status (SAS) was determined using a rating scale completed

by the teachers. The reliability and validity of each scale has been established.

**Results**

Eighty-six family types were described and merged into six major categories: mother alone, mother-father, mother-grandmother, mother-stepfather, mother-other, mother absent. Mother-alone and mother-stepfather families had significantly higher rates of social maladaptation in their first graders, which increased by third grade. Mother-father and mother-grandmother families had significantly lower rates of social maladaptation in their first graders, which decreased by third grade. Mother-alone families also had the lowest scores of psychological well-being in their children when they reached third grade. Family type was not correlated with psychological well-being in the first grade. Social maladaptation in the first grade predicted poor psychological well-being in the third grade but not vice versa.

**Comments**

This well-designed study demonstrates that certain family structures in urban poor families can predict the development of social maladaptation and psychological symptoms in the grade school children of these families. The authors conclude that the absence of the father is less important than the isolation of the mother. They further suggest that poor social adaptation may lead to poor mental health. The prospective design of this study greatly strengthens the authors' conclusions. The children have been followed through at least ninth grade, so more information on the relationship between family structure and mental health can be expected.

**80. Klerman, G.L., and Clayton, P. Epidemiologic perspectives on the health consequences of bereavement. In: Osterweis, M.; Solomon, F.; and Green, M., eds. *Bereavement: Reactions, Consequences, and Care.* Washington D.C.: National Academy Press, 1984. Pp. 15-46.**

**Problem/Methodology**

This report was written by the Committee on Health Consequences of the Stress of Bereavement of the Institute of Medicine. Chapter 2 is a review of the research on the health effects of bereavement. Ten major studies of the mortality associated with bereavement are assessed, as well as research on suicides during bereavement. Research on morbidity

includes studies on physical symptoms and specific medical illnesses, psychiatric symptoms, and hospitalizations and health care utilization. Risk factors shown to be correlated to poor outcomes during bereavement are also discussed. (77 references)

**Results**

The authors conclude that there is evidence of an increase in overall mortality and suicides for men under the age of 75 for the first 6 years of widowerhood, and this risk is greatest in the first year. Depressive symptoms during bereavement are very common, with 10 to 20 percent of the bereaved depressed at 1-year followup. Smoking, alcohol, and tranquilizer use are increased in the bereaved, mostly in those who are already using the substances. Risk factors for poor outcomes include poor physical or emotional health, alcoholism, and lack of social supports.

**81. Klus, J.; Habbick, B.F.; and Abernathy, T.J. Diabetes in children: Family responses and control.** *Psychosomatics* **24:367-372, 1983.**

**Problem/Methodology**

A review of recent studies of the impact of diabetes on the family, and family factors associated with poor control. Possible psychophysiologic mechanisms are discussed. (36 references)

**Results**

The authors conclude that the impact of diabetes on the family is a function of family coping abilities and that poor adjustment results in long-standing psychosocial difficulties. Poor overall family functioning and poor parental self-esteem appear to be associated with poor control of diabetes. Poor family functioning causes emotional stress, which may raise epinephrine levels and adversely affect control.

**Comments**

A rather superficial overview of the studies on the family and diabetes that accepts the conclusions of the studies without critical appraisal. The authors do not discuss the distinction between the effect of the family on diabetes and vice versa. The conclusions do not appear to be adequately supported by the studies cited.

**82. Koskevuo, M.; Kaprio, J.; Kesaniemi, A.; and Sarna, S. Differences in mortality from ischemic heart disease by marital status and social class.** *Journal of Chronic Diseases* **33:95-106, 1980.**

**Problem**

To examine the relationship of mortality from ischemic heart disease (IHD) with marital status and social class.

**Methodology**

*Cross-sectional study.* Standardized death rates were determined by examining the death certificates of all persons aged 25 to 84 dying from IHD in Finland from 1969 to 1971 (N=32,433). The accuracy of the IHD diagnoses was confirmed by studying autopsy results and IHD diagnostic criteria.

**Results**

Marital status and social class were independently correlated with IHD mortality, with the highest mortality among widowed and divorced unskilled workers. For men aged 25 to 54, there was a 3.3-fold range in IHD mortality. However, the proportion of total deaths due to IHD was inversely correlated with marital status and social class such that those with the highest overall and IHD mortality had the lowest proportion of total deaths due to IHD.

**Comments**

This study demonstrates that the correlation between mortality and marital status or social class is less for IHD than for other causes of mortality and that the correlation between marital status and IHD mortality is independent of social class. However, the presence of IHD may affect marital status by preventing or disrupting marriage. Some risk factors, such as smoking or lack of exercise, may also affect marital status and confound the relationship between marital status and IHD mortality.

**83. Koski, M.L., and Kumento, A. The interrelationship between diabetic control and family life.** *Pediatric and Adolescent Endocrinology* **3:41-45, 1977.**

## Problem

To examine the relationship between family characteristics and functioning and the control of diabetes.

## Methodology

*Prospective study.* Sixty families with diabetic children were followed for 5 years. Families were divided into six categories (healthy, symbiotic, externally oriented, cliques between family members, severe conflicts, chaotic) and four degrees of "nurturing" (normal, overnurturing, marginal, helpless). Diabetic children were divided into good or fair control and poor control. The methods of study, including how the family and diabetic control were assessed, are not described.

## Results

Good diabetic control was strongly associated with healthy, well-functioning family life. Only 23 of the 53 families studied were classified as healthy. All the "helpless families" had children with poor diabetic control. In 10 cases in which diabetic control deteriorated from good or fair to poor, there was association with disruptive family events (e.g., death, divorce, illness in other family members). Family events in the stable diabetics were not measured. Authors conclude that the best diabetic control is associated with a stable family life with intact intergenerational boundaries, a realistic and responsible attitude toward the diabetes, and if there has been a parental loss, an emotionally healthy and stable surviving parent.

## Comments

Because of the absence of a methods section describing how the families were assessed and divided into categories, evaluation of the study is difficult. The categories do not seem to fit any commonly used typology of families (though there is a reference in the Finnish literature). The population appears to be a highly select referral group, which might account for the relatively low number of healthy families (less than 50 percent) and thus limits the study's generalizability. The relationship of disruptive family events with worsening diabetic control must be considered anecdotal. Despite being prospective, this study does not examine the extent to which poorly controlled diabetes contributes to unstable families or vice versa.

**84. Kosten, T.R.; Novak, P.; and Kleber, H.D. Perceived marital and family environment of opiate addicts.** *American Journal of Drug and Alcohol Abuse* **10:491-501, 1984.**

**Problem**

To compare the perception of the marital and family environment of heroin addicts with other family members' perceptions, normative samples, and direct observation of the addicts' families.

**Methodology**

*Cross-sectional study.* Seventy-three addicts in an outpatient treatment program completed the Family Environment Scale (FES). Twenty-seven of the addicts were living with family members, and the wives of 18 addicts and the mothers of the other 9 addicts completed the FES. There were no significant diferences between the addicts whose family members completed the FES and those not living with family members. Sixteen of the married addicts and their wives were videotaped during a family interview and rated using the Beavers-Timberlawn Family Evaluation Scale (BTFES).

**Results**

The addicts scored higher than the previously established normative means on two of the FES subscales, achievement orientation and organization, and below the norms on conflict, intellectual-cultural orientation and recreational orientation. The addicts' mothers and spouses also scored below the norms on conflict and recreational orientation, but unlike their sons, their scores on the achievement orientation, organization, and intellectual-cultural orientation were not different from the norms. They scored lower than the norm for control. The conflict score on the BTFES was twice that reported for normal families.

**Comments**

This is one of the few studies that uses both direct observation and self-reports of the family.

**85. Kraus, A.S., and Lilienfeld, A.M. Some epidemiological aspects of the high mortality rate in the young widowed group.** *Journal of Chronic Diseases* **10:207-217, 1959.**

**Problem**

To compare the overall mortality rates of the married population to the nonmarried men and women (never married, divorced, widowed) in the entire U.S. population by age.

**Methodology**

*Cross-sectional study.* Death rates (overall and by specific causes) from 1949 to 1951 were obtained from U.S. Census data and reported by age, sex, race, and marital status.

**Results**

In all age, sex, and racial groups, the married population had lower mortality than each of the nonmarried groups. When death rates for both sexes and races are age adjusted, the relative risk of dying for single persons was 1.47, for widowed 1.46, and for divorced 1.84, when compared to married persons. The relative risk was greatest for young men and was between 5 and 10 for certain diseases (tuberculosis, heart disease, stroke). The authors examine alternative explanations for these results and conclude the association is genuine.

**Comments**

Most of the cross-sectional studies have found similar results, but the biases in a census study are significant. Cohort studies have all found smaller relative risks of bereavement.

**86. Lask, B., and Matthew, D. Childhood asthma: A controlled trial of family psychotherapy.** *Archives of Disease in Childhood* **54:116-119, 1979.**

**Problem**

To determine the efficacy of family psychotherapy as an adjunct to conventional therapy in the treatment of moderately to severely asthmatic children.

**Methodology**

*Randomized control trial.* Thirty-three families with 37 children with moderate-to-severe asthma were randomly assigned to experimental

(family therapy) and control groups. The groups were similar in age, severity of disease, socioeconomic status, and psychological health. Each child was seen every 3 weeks over a 4-month period. The experimental group received 1 hour of family psychotherapy after each medical checkup (total of 6 hours). The children were assessed with periodic pulmonary function tests, and they kept daily diaries of the amount of wheezing and limitations of activity due to asthma. The family therapy was based on an understanding of the interaction of the presenting symptom, wheezing, and the family system. Efforts were made to improve the coping skills of the family in dealing with an acute asthma attack and thereby reduce the overall stress and anxiety in the system.

**Results**

One year after the end of family therapy, the experimental group reported less daily wheezing and lower total gas volume, which is an index of lung overinflation and falls with improvement. There were no significant differences in the other measures of pulmonary function (peak expiratory flow rate [PEFR] and forced expiratory volume [FEV]) or in limitation of activity.

**Comments**

This is the only randomized control trial of family psychotherapy in a somatic illness. It is well designed, and the results are quite significant. Total gas volume is a measure of air trapping and lung overinflation and is a reasonably good measure of the severity of chronic asthma, while FEV or PEFR measures acute bronchoconstriction. One would expect more effect of family therapy on a chronic measure of the disease. Daily wheezing is a symptom report and may change without any underlying physiological changes. As there was no placebo or sham psychotherapy, this result may have been a nonspecific result of the extra attention that the experimental group received. Family therapy should be compared to individual therapy and family education.

**87. Leff, J.; Kuipers, L.; Berkowitz, R.; Everlein-Vries, R.; and Sturgeon, D. A controlled trial of social interventions in the families of schizophrenic patients.** *British Journal of Psychiatry* **141:121-134, 1982.**

**Problem**

To assess the effect on relapse of schizophrenia of social interventions designed to reduce the level of expressed emotion (EE) by relatives and the amount of face-to-face contact.

**Methodology**

*Randomized controlled trial.* Twenty-four schizophrenic patients and their families with high EE were randomly allocated to experimental and control groups. The only difference between the two groups was longer prior unemployment of the patients in the experimental group. The experimental group received a package of social interventions that included an educational program, a support group for relatives in which low-EE relatives could share their coping styles with high-EE relatives, and family psychotherapy (1 to 25 sessions: mean, 5.6) aimed at reducing EE and/or social contact. The control group received no special treatment. Families were followed for 9 months, and relapses of symptoms and changes in EE or face-to-face contact with the family were assessed.

**Results**

A significant reduction in EE occurred in five of the experimental families and none of the controls, and a reduction in face-to-face contact occurred in five experimental families and three of the controls. Overall there was a reduction in EE or social contact in 73 percent of the experimental group. The relapse rate in the control groups was 50 percent and only 9 percent in the experimental group ($p$=.04). None of the eight families in the experimental groups who reduced EE or face-to-face contact had a relapse.

**Comments**

This experimental trial was designed to determine the effect of the family's EE and face-to-face contact on the course of schizophrenia. Unfortunately the control group was not adequate to test this specific hypothesis. To assess whether it was the amount of therapy or the social support the patient received that accounted for the improvements, the control group should have received an equivalent amount of nonspecific treatment that was not designed to change EE or face-to-face contact.

**88. Leff, J., and Vaughn, C. The role of maintenance therapy and relatives' expressed emotion in relapse of schizophrenia: A two year follow up.** *British Journal of Psychiatry* **139:102-104, 1981.**

See Vaughn and Leff 1976 for annotation.

**89. Levine, D.M.; Green, L.W.; Deeds, S.G.; Chwalow, J.; Russell, R.P.; and Finlay, J. Health education for hypertensive patients.** *JAMA. Journal of the American Medical Association* **241:1700-1703, 1979.**

See Morisky et al. 1983 for annotation.

**90. Liebman, R.; Minuchin, S.; and Baker, L. The use of structural family therapy in the treatment of intractable asthma.** *American Journal of Psychiatry* **131:535-540, 1974.**

**Problem**

To describe the use of structural family therapy in the treatment of severe childhood asthma.

**Methodology**

*Case reports.* The use of structural family therapy in a series of seven cases of severe asthma is described. Weekly family therapy sessions were divided into three phases. Alleviation of the acute asthmatic symptoms to remove family focus from the identified patient was the first goal, and it was accomplished by teaching the family specific coping skills in aborting asthma attacks. The second goal was to change the patterns of behavior in the family that perpetuate the child's symptoms by identifying stressful "dysfunctional sets" and "pathogenic relationships" in the family. Finally interventions were made to change the structure of the family to allow continued disengagement of the asthmatic child from parental conflicts and to prevent the development of a new "symptom bearer."

**Results**

All seven cases treated had severe steriod dependent asthma with frequent emergency room visits and three to six hospitalizations in the prior year, and each had been in individual psychotherapy. After 5 to 10 months of family therapy, each patient's asthma went into remission with six of the seven not requiring further hospitalization (10- to 22-month followup) or the use of steriods and having normal school attendance and "more normal life styles."

**Comments**

Dramatic results in case reports must be viewed with skepticism. Unsuccessful cases are rarely reported, and the lack of control groups makes interpretation of the results hazardous. Whether the results are due to spontaneous improvement, nonspecific effect (placebo) of treatment, involvement of the family, specifics of structural family therapy, or the skill and enthusiasm of the therapist cannot be determined.

**91. Long, J.V.F., and Scherl, D.J. Developmental antecedents of compulsive drug abuse: A report on the literature.** *Journal of Psychoactive Drugs* **16:169-181, 1984.**

**Problem/Methodology**

Review of the research on the antecedents of compulsive drug use. Features of the present state of the literature and theories concerning drug abuse are discussed and research on genetic, family, behavioral, and personality factors are reviewed. Recommendations for future research are made. (110 references)

**Results**

The literature on the antecedents of drug abuse is characterized by a very limited amount of empirical data, lack of specificity of factors in drug abuse versus sociopathy and delinquency, lack of integration of social and individual factors, lack of integration of research with existing theories and lack of agreement of the definition of the problems under study (drug use versus abuse).

The research supports several family factors as being antecedent to drug abuse. Family relationships resulting from the parents being newcomers to an area or frequent uprootings seem to predispose the children to drug abuse. Drug addicts appear to have lost a parent during childhood more frequently than others, and disruption of the family is a predictor of subsequent drug abuse. Research suggests that mothers of addicts are perceived by the addicts as being more dominant and overprotective than the father. The quality of the parents' marriages is quite poor. Overall, the authors believe that there is evidence to support Vaillant's hypothesis that "in part narcotic addiction stems from a lack of adequate identification with the adult role."

**92. Lukoff, D.; Snyder, K.; Ventura, J.; and Nuechterlein, K.H. Life events, familial stress, and coping in the developmental course of schizophrenia.** *Schizophrenia Bulletin* **10:258-292, 1984.**

**Problem/Methodology**

This review uses a vulnerability/stress model to relate three areas of research in schizophrenia: stressful life events, family factors, and coping skills. The literature on expressed emotion and communication deviance (CD) is examined in detail. (170 references)

**Results**

The authors conclude that there is evidence to show that stressful life events precede the onset of schizophrenia in some patients and that schizophrenics contribute to the increase in life events. The research is consistent in demonstrating a relationship between high expressed emotion in families of schizophrenics and subsequent relapse of the illness. While cross-sectional studies show a relationship between parental CD and schizophrenia, there are published results from only one prospective study of CD. This study (UCLA Family Study—see Doane et al. 1981) appears to support the etiologic role of CD. The authors offer four interpretations of the CD research: (1) CD induces stress, which precipitates schizophrenia; (2) CD influences the cognitive development of schizophrenics; (3) CD represents subclinical schizophrenia and is genetically transmitted; and (4) CD is a response to the schizophrenic's illness.

**93. Madanes, C.; Dukes, J.; and Harbin, H. Family ties of heroin addicts.** *Archives of General Psychiatry* **37:889-894, 1980.**

**Problem**

To compare how black male heroin addicts, schizophrenics, and high-achieving normal controls represent their family relationships.

**Methodology**

*Cross-sectional study.* Eighteen heroin addicts from a methadone maintenance program, nine schizophrenics, and nine college or graduate students were given the Family Hierachy Test. There were no significant differences in sociodemographic variables between the three groups. Each subject was asked to chose one of eight schematic diagrams that best represents the hierarchical relationships within his or her family. Each figure in the chosen diagram was labeled and moved to indicate closeness and distance between family members. The subject was then asked to choose the diagram representing how he or she would like his family to be. The subject's parents and then the rest of the family were asked to agree on the best representation of the family and distances

between family members. Two judges scored each test for hierarchical reversal (in which the parents are not placed at the same level with the children or under them) and cross-generational attachments (in which a parent and child figure are touching or overlapping).

**Results**

Addict families scored higher overall (total number of hierarchical reversals and cross-generational attachments) than the schizophrenic families ($p<.025$) who scored higher than the high achievers ($p<.05$). These findings were unchanged when the number of parents in the family (one or two) was controlled for. While there was no single "characteristic" diagram for each group, the parents of the schizophrenics and addicts tended to arrange themselves above their marital partner who was placed on the same level as the children. Siblings of addicts were often represented as having a cross-generational attachment with the parent.

**Comments**

This study uses an ingenious method to try to assess the structure of addicts' families in a systematic manner. The validity of the measure is unclear, and the scores may be more global measures of family functioning. The inference from the study is that addicts tend to be involved in extreme cross-generational attachments that help to maintain the addiction.

**94. Marrero, D.G.; Lau, N.; Golden, M.P.; Kershnar, A.; and Myers, G.C. Family dynamics in adolescent diabetes mellitus: Parental behavior and metabolic control.** *Pediatric and Adolescent Endocrinology* **10:77-82, 1982.**

**Problem**

To assess the relationship between diabetic control and the perceptions of adolescent diabetics and of their parents' behavior toward them.

**Methodology**

*Cross-sectional study.* Forty diabetic adolescents (17 with histories of good diabetic control and 23 with previous poor control) completed the Cornell Parent Behavior Description Scale. This scale measures the adolescent's perceptions of how supportive, punishing, rejecting, indulgent, controlling, and encouraging of autonomy each of his or her parents are.

**Results**

Paternal behavior perceived as dominant and controlling was associated with poor metabolic control, while behavior perceived as supportive and encouraging of autonomy correlated with good control. There was a nonsignificant trend toward an association of poor control with maternal behavior perceived as rigid, critical, and more protective.

**Comments**

The conclusion of the study that parental overcontrol and rigidity leads to rebellion and poor control in diabetic children is not supported by the results. Adolescents in poor control may view their parents as more controlling regardless of actual parental behavior, and parents may be more controlling in response to the adolescent's poorly controlled diabetes.

**95. Medalie, J.H., and Goldbourt, U. Angina pectoris among 10,000 men: Psychosocial and other risk factors as evidenced by a multivariate analysis of a five year incidence study.** *American Journal of Medicine* **60:910-921, 1976.**

**96. Medalie, J.H.; Kahn, H.A.; Neufeld, H.N.; Riss, E.; and Goldbourt, U. Five-year myocardial infarction incidence—II. Association of single variables to age and birthplace.** *Journal of Chronic Diseases* **26:329-349, 1973*a*.**

**97. Medalie, J.H.; Snyder, M.; Groen, J.J.; Neufeld, H.N.; Goldbourt, U.; and Riss, E. Angina pectoris among 10,000 men: 5 year incidence and univariate analysis.** *American Journal of Medicine* **55:583-594, 1973*b*.**

**Problem**

To determine what factors (especially psychosocial) are associated with the development of coronary heart disease (angina or myocardial infarction [MI]).

**Methodology**

*Prospective cohort study.* A group of 10,000 male civil servants over the age of 40 and without evidence of coronary heart disease (by history and EKG) were enrolled in the Israel Ischemic Heart Disease Project, a

prospective cohort study very similar to the Framingham Study. Detailed demographic, clinical, behavioral, and psychosocial data were obtained from each man and a complete physical examination performed. The cohort was followed for 5 years for the development of angina or MI.

**Results**

The only psychosocial variables associated with subsequent MI were serious past problems with superiors at work and describing oneself as a "closed person." Those men who reported that their "wives did not love them or show their love" had a higher incidence of MI, which was not statistically significant (Medalie et al. 1973*a*). The psychosocial variables associated with the development of angina were anxiety and severe psychosocial problems especially involving family or work (Medalie et al. 1973*b*). In a subsequent multivariate analysis of all variables, anxiety and psychosocial problems remained significant, but family problems accounted for nearly all of the effect of psychosocial problems. Family problems was as powerful a predictor (logistic coefficient=0.22) as any physiological variable (raised systolic blood pressure=0.20, high cholesterol level=0.26, abnormal EKG=0.21). In men with high anxiety scores, "wife's love and support" protected against the development of angina. It had no effect in men with low anxiety, suggesting a "buffering" effect (Medalie and Goldbourt 1976).

**Comments**

The large number of subjects and 100 percent followup of this well-designed study make it a landmark study in the family medicine literature. However, the fact that family problems and spousal support were not significantly associated with MI suggests one of several possibilities: (1) a Type-II error—since there are many fewer MI than cases of angina, missing a true relationship is more likely; (2) angina and MI have different risk factors (there is some evidence for this); (3) the symptom of angina is merely an illness behavior, and anxious men without spouse support or with serious family problems report more chest pain without having more severe coronary heart disease.

**98. Merikangas, K.R. Divorce and assortative mating among depressed patients.** *American Journal of Psychiatry* **141:74-76, 1984.**

**Problem**

To determine the relationship between psychiatric illness in the spouses of depressed patients and subsequent divorce.

**Methodology**

*Prospective cohort study*. Fifty-six patients with affective disorders and their spouses were interviewed at the time of psychiatric hospitalization using the Schedule of Affective Disorders and Schizophrenia (SADS-L). From 12 to 36 months after discharge, each spouse was reassessed using SADS, Symptom Checklist 90 (SCL-90), and the Katz Adjustment Scale. Two groups of patients, those with and without psychiatrically ill spouses were compared. They did not differ on any social or demographic variables.

**Results**

Overall, nine (16 percent) of the couples had divorced over the followup period. Eight of these divorces occurred in patients with psychiatrically ill spouses. The divorce rate of this group (27 percent) of patients was eight times the expected state population divorce rate. The divorce rate of the patients with psychiatrically well spouses (4 percent) was equal to the population rate.

**Comments**

While this study suggests that psychiatric illness in both spouses led to divorce, the direction of the causal relationship cannot be determined, even in this prospective study. Marital conflict may have precipitated or worsened depression in either spouse. The relationship could be sorted out in a prospective study if marital adjustment and degree of psychiatric impairment in each spouse were measured initially and controlled for in the followup period.

**99. Mermelstein, R.; Lichtenstein, E.; and McIntyre, K. Partner support and relapse in smoking-cessation programs.** *Journal of Consulting and Clinical Psychology* **51:465-466, 1983.**

**Problem**

To determine the relationships between partner support and abstinance from smoking in a smoking-cessation program

**Methodology**

*Prospective cohort study.* Forty-six subjects (25 males, 21 females) were part of a smoking-cessation program and were married or living with a partner. During the fifth session of a self-management smoking-cessation program, the subjects completed a questionnaire that assessed the partner's behavior toward the subjects smoking cessation. An "experienced helpfulness" score was derived from frequency and perceived helpfulness of these behaviors. Smoking status (abstinent or smoking) was determined by self-reporting and interviews with "significant others" at the end of treatment and at 1-, 3-, and 6-month followups.

**Results**

At 1-month followup, those who never quit had a significantly lower "experienced helpfulness" score than those who were abstinent and those who quit and relapsed. At 3- and 6- months followup, only the abstinent subjects had significantly higher scores than the other two groups. A cluster analysis of the partners' behaviors revealed four patterns of behaviors, termed nagging/shunning, policing, cooperation, and reinforcement. The partners of the abstainers were significantly more likely to be reinforcing and cooperative than the partners of subjects who relapsed.

**Comments**

This is one of the few prospective studies of family support and compliance. One is able to determine that the partner behaviors preceded relapse and were not a consequence of it. In addition, particular patterns of partner behaviors were predictive of subsequent changes in smoking. Unfortunately, there were no controls for potential confounding variables that might explain the results. One-third of the partners were smokers, and their smoking may have resulted in higher relapse as well as less supportive behaviors.

**100. Meyer, R.J., and Haggerty, R.J. Streptococcal infections in families: Factors altering individual susceptibility.** *Pediatrics* **29:539-549, 1962.**

**Problem**

To examine the factors associated with the development of streptococcal pharyngitis within families.

**Methodology**

*Prospective cohort study.* Sixteen lower middle-class families comprising 100 individuals were followed for 12 months. The families kept diaries of illnesses and significant life events and were interviewed on a periodic basis. Everyone received throat cultures every 3 weeks and ASLO titers every 4 months. At the beginning of the study, the families were assessed for chronic stress.

**Results**

Thirty percent of the streptococcal infections were associated with an episode of acute family stress within the preceding 2 weeks. Families with a high degree of chronic stress had more strep throats, and if they had a strep throat, they were more likely to develop a rise in ASLO titer (which is thought to be related to the risk of development of rheumatic fever).

**Comments**

This landmark study was done before most of the literature on stress appeared, and it shares many of the problems of life events research. From the methods section, one cannot determine when the families recorded the stressful events (before or after the illness), who decided what was a stressful event, and whether the subjects and raters were blind to the hypothesis of the study. Potential confounding variables (especially age, socioeconomic status, and size of family) were not controlled for.

**101. Minuchin, S.; Baker, L.; Rosman, B.L.; Liebman, R.; Milman, L.; and Todd, T.C. A conceptual model of psychosomatic illness in children: Family organization and family therapy.** *Archives of General Psychiatry* **32:1031-1038, 1975.**

**Problem**

To describe a model for understanding the family's role in psychosomatic illness, and to report the results of structural family therapy in the treatment of these illnesses.

**Methodology**

*Case reports.* The results of the use of structural family therapy with 48 cases of "brittle" diabetes, psychosomatic asthma, and anorexia nervosa are reported. The conceptual model (family systems theory) on which therapy is based is described. Three conditions must exist for the

development and maintenance of severe psychosomatic illness in children: (1) The child must be physiologically vulnerable with specific organ dysfunction and involved in parental conflict. (2) The child's family organization must encourage somatization and must be characterized by enmeshment (family members overreact to stress on another member and demonstrate a lack of autonomy), overprotectiveness (family members are not allowed to handle their problems individually), rigidity (transactional patterns are repeated inflexibly and change is resisted), and conflict avoidance (open airing of disagreement is not permitted and problems are not resolved). (3) Children with psychosomatic illnesses are involved in parental conflict in one of three patterns: triangulation, parent-child coalition, or detouring.

The authors report their success in treating 13 superlabile diabetics, 10 intractible asthmatics, and 25 anorectics, by using strategies to change the psychosomatic elements of the family structure. Treatments lasted 4 to 12 months, and patterns of recurrent hospitalization, chronic ketonuria in the diabetics, and steriod dependence in the asthmatics virtually disappeared. Medication use in the asthmatics and insulin dosages of diabetics were markedly reduced. Virtually all of the anorectics recovered with weight gains of 5 to 30 kg and followup of 1 to 4 years.

**Comments**

Two different parts of this paper must be carefully distinguished. The conceptual model of the psychosomatic family, described in more detail in Minuchin's book (Minuchin et al. 1978) by the same name, has gained considerable popularity and acceptance despite scanty empirical evidence for supporting it. The results of the authors' family therapy are quite dramatic, but there were no comparison groups, which are essential for the evaluation of specific type of treatment. In addition, the successes may not be due to their specific family therapy approaches, but rather to the skill and charisma of the particular therapists. Replication of these findings by other family therapists using control groups is desparately needed.

**102. Minuchin, S.; Rosman, B.L.; and Baker, L.** *Psychosomatic Families.* **Cambridge, Mass.: Harvard University Press, 1978. Pp. 21-50.** (See also Baker et al. 1974, 1975.)

**Problem**

To compare the physiological responses of three different groups of diabetics (normal, behavioral, psychosomatic) to intravenous isoproterenol and participation in a stressful family interview.

## Methodology

*Quasi-experimental trial.* Seven "psychosomatic" diabetic children were compared to eight normal diabetic children and eight diabetic children with behavioral problems. Free fatty acid (FFA) levels were measured during a baseline period and during an infusion of isoproterenol to examine whether there were any inherent differences in "endogenous lability" of diabetic control. The families of the children then underwent a highly structured family interview during which FFA levels were measured in all family members. During the first part of the interview, the child observed from behind a one-way mirror while conflict was induced in the family. The child was then brought into the room and the argument. Finally a 90-minute period of recovery was observed. Based on the FFA responses of the diabetic children, the authors predicted which children would respond to long-term beta-adrenergic blockers. The details of the methodology and the results of these studies were to have been published separately but have not appeared.

## Results

There were no changes in FFA levels in any of the three groups during the baseline period, and each group responded similarly to the isoproterenol infusion. The normal and behavioral diabetics had no change in FFAs during the family interview. The psychosomatic diabetics had rises in FFAs before entering the room with their families (excessive turn-on), which continued to rise during the family conflict and did not return to normal during the recovery period (impaired turn-off). The parents of the psychosomatic diabetics had a rise in FFAs during the initial portion of the family conflict, but levels dropped as soon as the child entered the room. The authors suggest that this demonstrates how the child defuses the family conflict at the sacrifice of poor metabolic control and that the excessive turn-on and impaired turn-off of FFAs leads to diabetic ketoacidosis. Three of the four children whom the authors predicted would improve with the beta blocker did, but two children predicted not to respond also improved.

## Comments

It is unfortunate that the detailed results of this influential study have never been published as there are several serious problems with the study. The numbers are very small (seven to eight in each group), and there is no statistical analysis of the results. It is not clear that the rise in FFAs in response to a family conflict is clinically significant or related to the rise in FFAs that occurs or would lead to diabetic ketoacidosis.

**103. Moos, R.H.; Bromet, E.; Tsu, V.; and Moos, B. Family characteristics and the outcome of treatment for alcoholism.** *Journal of Studies on Alcohol* **40:78-88, 1979.**

**Problem**

To assess the relationships between family environment, family stress, and functioning and the outcome of treatment for alcoholism.

**Methodology**

*Cross-sectional study.* Six months after completion of an inpatient alcohol treatment program, 124 patients and their families were assessed. The Follow-up Information Form (FIF) completed by each patient measured alcohol consumption, subjective rating of drinking problem and physical and psychological impairment. The Family Environmental Scale (FES) completed by each family member assessed 10 dimensions of the family. The Family Life Questionnaire (FLQ) was completed by the spouse and assesses eight aspects of family stress and functioning: positive and negative life events, physical symptoms, medical conditions, social participation, disagreements over alcohol, total disagreements, and joint chores.

**Results**

Families of alcoholics who had better treatment outcome at followup (FIF) reported more family cohesion and active-recreational orientation (FES) and social participation (FLQ) and less family conflict and control. They experienced more positive and fewer negative life events, had fewer physical and emotional symptoms, and were less likely to disagree over the use of alcohol.

**Comments**

The differences between poor-outcome (wet) and good-outcome (dry) families may simply be to be due to the presence or absence of alcohol. For example, one would certainly expect less disagreement about alcohol in the families of abstainers.

**104. Moos, R.H., and Moos, B.S. The process of recovery from alcoholism: III. Comparing functioning in families of alcoholics and matched control families.** *Journal of Studies on Alcohol* **45:111-118, 1984.**

**Problem**

To compare the functioning of families of relapsed and recovered alcoholics and matched nonalcoholic families.

**Methodology**

*Cross-sectional study.* A sample of 105 alcoholic patients (54 recovered, 51 relapsed) and their spouses were matched with nonalcoholic families from the same census tract for family size, age of partners, ethnicity, education, and religion. Three aspects of family functioning were assessed for all families with self-administered questionnaires. Role functioning was measured by asking who performed each of 18 tasks in the home. The Family Environment Scale measured 10 dimensions of perceptions of the family. Husband-wife congruence was measured by the amount of agreement between the spouses regarding role functioning and family environment.

**Results**

Overall the recovered alcoholic couples resembled the normal control families on nearly all the measures of family functioning while the relapsed couples reported less cohesion, expressiveness, and congruence and more family arguments than both the controls and recovered families. The recovered alcoholics and their spouses did report fewer arguments, higher congruence, more task sharing, and less active recreation than the control families.

**Comments**

This study demonstrates that the families of recovered alcoholics are not significantly dysfunctional. Without prospective data, the extent to which normal family functioning assisted the alcoholic's recovery or recovery from alcoholism improved family functioning cannot be determined. Measures of family functioning prior to treatment would be useful to examine this. These findings do challenge the hypothesis that the alcoholic's drinking serves an adaptive function and that removal of that symptom will disrupt family functioning.

**105. Morisky, D.E.; Levine, D.M.; Green, L.W.; Shapiro, S.; Russell, R.P.; and Smith, C.R. Five year blood pressure control and mortality following health education for hypertensive patients.** *American Journal of Public Health* **73:153-162, 1983.** (See also Levine et al. 1979.)

## Problem

To assess the impact of three educational interventions on appointment keeping, weight control, blood pressure, and overall mortality in hypertensives. Family intervention was included after a previous survey indicated that 70 percent of hypertensive patients expressed a need for members of their family to learn more about hypertension.

## Methodology

*Randomized controlled trial.* A sample of 400 urban poor hypertensive patients were randomly assigned to a control group or one of seven experimental groups that received one or more of three educational interventions. The interventions were a 5- to 10-minute counseling session to adapt the medical regimen to the patient's daily schedule, a home visit with an instructional session for a significant family member (usually the spouse), and three 1-hour group sessions for patients designed to provide group support and improve self-confidence. Outcome measures at 2 and 5 years included appointment keeping behavior; weight loss; self-reported adherence to medication; systolic and diastolic blood pressure; and at 5 years, overall and hypertension related mortality.

## Results

At 2 years (Levine et al. 1979), all experimental groups had a significant improvement in each outcome measure including blood pressure. Family support, either alone or in combination with other interventions, appeared to be more effective than the counseling session and less effective than small groups. However, because of the small number of patients in each group (N=50), there were no statistically significant differences between any of the experimental groups.

At 5-year followup (Morisky et al. 1983), the experimental groups continued to have significant improvement for all outcomes. In addition, the overall mortality was 57 percent less for the experimental group compared to the controls and 53 percent less for hypertension-related mortality. Again, there were no significant differences between experimental groups. However, when each group was individually compared to the control group for blood pressure control, only those groups that had a family intervention were statistically improved at 5 years.

## Comments

This complicated but well-designed study shows a dramatic effect of three simple educational interventions on blood pressure control and overall mortality. The exit interview and family support groups have since

been incorporated routinely into the care of hypertensives at The Johns Hopkins Hospital. Because of the small number of patients in each group and the complicated design, it is difficult to make comparisons between interventions. However, the family intervention seemed to be the most effective intervention for blood pressure control and appointment keeping.

**106. Nasiry, R., and Piper, D.W. Social aspects of chronic duodenal ulcer: A case control study.** *Digestion* **27:196-202, 1983.**

**Problem**

To determine the association between certain social and environmental factors and duodenal ulcers.

**Methodology**

*Case-control study.* Eighty consecutive patients with endoscopically diagnosed duodenal ulcers were matched to a control group by age, sex, and social grade as measured by a status ranking of the suburb of residence. Other measures of socioeconomic status included occupation, father's occupation, and education. Additional social variables examined were marital status, country of birth, and measures of childhood happiness and family stability.

**Results**

Status incongruity (lower status occupation when matched by suburb and lower education when matched by occupation) was associated with duodenal ulcer, and being unmarried was a risk factor for women (relative risk of 4.37). Family stability and childhood happiness were not significant.

**Comments**

Case-control studies are a powerful method for looking for psychosocial risk factors as long as these factors are not self-reported (such as childhood happiness). The presence of a disease is likely to introduce reporting biases.

**107. Neser, W.B.; Tyroler, H.A.; and Cassel, J.C. Social disorganization and stroke mortality in the black population of North Carolina.** *American Journal of Epidemiology* **93:166-175, 1971.**

**Problem**

To examine the relationships between social and family disorganization and mortality from strokes.

**Methodology**

*Cross-sectional (ecological) study.* Death rates from strokes were obtained for each county in North Carolina (N=86) for a 9-year period. The level of social and family disorganization in each county was assessed using an index measuring family instability (percent of primary families with only one parent present), percent of illegitimate births, rate of males sentenced to prison road camps, percent of population separated or divorced, and percent of children under 18 not living with both parents. Counties were ranked and divided into five groups based on race-specific scores on the index. Stroke mortality in each level of social disorganization was compared by race, age, and sex. Stroke mortality was also compared by poverty levels in the counties.

**Results**

In all age groups of black men and women, the stroke mortality rate rose with increasing level of social disorganization. The largest rise in mortality was for the youngest group (35 to 44 years old) and was two to three times greater in counties with the highest level of social disorganization. There was no relationship between stroke mortality and counties grouped by a poverty index, or by their geographic location, and there was no relationship between stroke mortality and county level of social disorganization for whites.

**Comments**

Four of the five components of the scale of social disorganization measure the same variable, whether the family is intact. Whether this is a measure of social disorganization or cultural norms is unclear. The study raises the question why some counties have higher level of social disorganization, and whether the causes of social disorganization are likely to be the causes of the increase in stroke mortality. Likely confounders would include other measures of socioeconomic status since it is known to be associated with stroke mortality.

**108. Norbeck, J.S., and Tilden, V.P. Life stress, social supports, and emotional disequilibrium in complications of pregnancy: A prospective, multivariate study.** *Journal of Health and Social Behavior* **24:30-46, 1983.**

**Problem**

To assess the effects of life stress (pre- and intrapregnancy), social supports, and emotional equilibrium on the complications of pregnancy.

**Methodology**

*Prospective cohort study.* Between the 12th and 20th week of pregnancy, 117 women without significant past obstetric or medical history were assessed for life stress, social supports, and emotional state. Stress was measured with the Sarason Life Experiences Survey, which measures the desirability and impact of events in the past year. This was repeated 6 weeks prior to expected delivery for the preceding month. Emotional social support was measured with the Cohen and Lazarus Social Support Questionnaire, which assesses perceived support from family and friends. Tangible social support was assessed by asking about the availability of help in case of a problem. Anxiety, depression, and self-esteem were also measured by standardized questionnaires, and scores were found to be highly intercorrelated. Pregnancy complications were assessed by chart review post partum and were divided into gestational, labor and delivery, and infant related. Potential confounding factors including age, obstetrical risk factors, race, marital status, and eduation were controlled for.

**Results**

The only obstetrical factor that correlated with outcome was parity, which was controlled for in further analyses. Both life stress in the prior year and social support were correlated with emotional disequilibrium. Life stress, but not social supports, was significantly related to overall complications, but there was no interaction between social supports and stress. However, when types of complications were looked at there was a significant relationship between high stress during the end of pregnancy plus low tangible social supports and certain types of complications.

**Comments**

This study was quite well designed and eliminates many of the problems of an earlier study by Nuckolls et al. (1972). However, the results

are much less impressive. Very little of the variance in complications is explained by psychosocial factors.

**109. Nuckolls, K.B.; Cassel, J.;, and Kaplan, B.H. Psychosocial assets, life crisis and the prognosis of pregnancy.** *American Journal of Epidemiology* **95:431-441, 1972.**

**Problem**

To examine the relationship between stressful life events, psychosocial assets, and complications in pregnancy.

**Methodology**

*Prospective cohort study.* During their first prenatal visit, 340 primiparous women completed a questionnaire measuring "psychosocial assets." The Adaptive Potential of Pregnancy Score (TAPPS) measures five categories of assets including self (ego strength, self-esteem, perception of health), marriage (duration, happiness), extended family (relationships with parents, siblings, and in-laws), social resources (friendship patterns and support), and definition of pregnancy (extent pregnancy was planned, feelings about pregnancy, and confidence in outcome). At 32 weeks gestation, 271 of the cohort completed the Holmes and Rahe Scale of Recent Life Events for the pregnancy and the prior 2 years; 170 of these women delivered on the military base and were assessed for complications. Complications included threatened abortion, admission to the hospital for preeclampsia or hyperemesis, signs of preeclampsia, premature rupture of membranes (greater than 24 hours), prolonged labor (greater than 20 hours), Apgar score less than 7, or low birthweight (less than 2,500 gm). Forty-seven percent of the pregnancies were classified as complicated. Age and social class were not associated with outcomes.

**Results**

There was no significant relationship between life change scores (prepregnancy, during pregnancy, or total) or "psychosocial assets" (TAPPS) and complications of pregnancy. However, when the interaction between assets and life change was assessed, women with high prepregnancy and during pregnancy life-change scores had 3 times the chance of having a complicated pregnancy if they had low psychosocial assets as opposed to high (subsample of 26 subjects).

**Comments**

This study is one of the original and classic articles showing a buffering effect of social supports (TAPPS) on stress. However, there is no statistical analysis of the one correlation found. In addition, many of the complications occurred prior to 32 weeks gestation (threatened abortion, hyperemesis) and probably influenced the scores on the recent life events scale. Finally, there are numerous obstetrical risk factors that might effect stress or social support and should therefore be controlled for.

**110. Oakes, T.W.; Ward, J.R.; Gray, R.M.; Klauber, M.R.; and Moody, P.M. Family expectation and arthritis patient compliance to a hand resting splint regimen.** *Journal of Chronic Diseases* **22:757-764, 1970.**

**Problem**

To examine the relationship between rheumatoid arthritis patients' compliance with a hand splint and the patients' perceptions of their families' expectation that they wear the splint.

**Methodology**

*Cross sectional study.* Sixty-six patients with rheumatoid arthritis agreed to wear a static resting splint for the hand and wrist and were instructed to wear it every night. After 18 months of use, they were asked "Do your family members expect you to wear your splint?" and "What percent of time that you participated in the project did you wear the splint?" A family member was also asked about compliance.

**Results**

Perceived family expectations were strongly correlated to self-reported compliance for all patients when stratified by age, sex, and socioeconomic status. There was a 53 percent agreement between the patient's and family member's report of compliance.

**Comments**

Major weaknesses in this study include the use of self-reports of compliance and the patient's perception of a family attitude. Family expectation is likely to be influenced by compliance rate. If a patient has been using the splint most of the time, the family is likely to expect the patient to continue to use it.

**111. Parker, G. Parental characteristics in relation to depressive disorders.** *British Journal of Psychiatry* **134:138-147, 1979.**

**Problem**

To compare the reports of parental care and overprotection by two types of depressed patients (bipolar and neurotic) and nonpsychiatric patients.

**Methodology**

1. *Case-control study.* Fifty-two patients with neurotic depression were matched with general practice attendees for age, sex, and paternal social status. Each group completed the Parent Bonding Index (PBI), which measures the perceived parental care and psychological control.
2. *Case-control study.* Seventy patients with manic-depressive illness and a similarly matched control group completed the PBI.
3. *Cross-sectional study.* The PBI, the Costello-Comfrey scale (for trait depression), the Rosenberg's Self Esteem Scale and the Eysenck Personality Inventory for neuroticism was completed by 254 postgraduate students. The number and length of depressive episodes was also assessed.

**Results**

1. The neurotically depressed patients scored both parents as significantly less caring on the PBI than the controls and scored their mothers as more overprotective.
2. There was no significant difference between the PBI scores of the manic-depressive patients and the controls.
3. Among the students, overprotection by the "more important" parent was significantly associated with neuroticism, trait anxiety, longer duration of depressive episodes and lower self-esteem. Those students reporting high parental care and low overprotection had the lowest trait depression, trait anxiety, and alienation and the highest self-esteem.

**Comments**

This study suggests that overprotectiveness and/or low parental care makes one more susceptible to the latter development of reactive or neurotic depressions. Other explanations include the distortion of retrospective assessment by the patients' depression and the eliciting of parental overprotection or less care by a depressive temperament. These issues are addressed by a subsequent study (Parker 1981).

**112. Parker, G. Parental reports of depressives: An investigation of several explanations.** *Journal of Affective Disorders* **3:131-140, 1981.**

**Problem**

To assess the accuracy of offsprings' perceptions of parental characteristics and whether depression influences the perception of parental characteristics.

**Methodology**

1. *Prospective study.* Thirty-six neurotically depressed patients completed the PBI initially and after a significant improvement (by the Beck Depression Index) in their depression (average of 9 weeks later).

2. *Case-control study.* Twenty-five psychiatric patients (50 percent with depression), 25 healthy controls, and 1 of each of their siblings completed the PBI. The siblings also completed the PBI as if they were the index case.

3. *Cross-sectional study.* Seventy-five university students completed the PBI scales of trait and state depression and dependency. The students' mothers completed the PBI on themselves as they perceived themselves during the first 16 years of the students' life. They also rated each child for shyness and timidity.

**Results**

1. There was a high test-retest correlation between the preimprovement and postimprovement in depression scores, and the difference in the scores was not significantly different.

2. The PBI scores of the siblings for themselves and reporting as if they were the index case were similar enough to doubt the validity of the sibling as an independent observer of parental characteristics.

3. The mothers' PBI score significantly correlated with their child's score for care and overprotection. The mothers scored themselves as more caring and less overprotective than the students did. Higher trait and state depression scores correlated with increased parental control and decreased affection by both the parent's and child's assessment. Parent's perception of the child's "shyness and timidity" was correlated with depressive symptoms, but when controlled for, the relationship between "affectionless control" and depression persisted.

### Comments

These studies represent some ingenious methods of testing how well the PBI measures actual parental behavior. The lack of change in test scores after the treatment of depression does not necessarily mean that depression does not affect these perceptions. The respondents may have been influenced by the initial test taking and may have been trying to be "consistent." The correlation between the mothers' and students' PBI scores is unusual as children usually view family interactions quite differently from the parents. This finding deserves further investigation.

## 113. Parker, G. Parental "affectionless control" as an antecedent to adult depression: A risk factor delineated. *Archives of General Psychiatry* 40: 956-960, 1983.

### Problem

To assess whether depressed patients are more likely to perceive themselves as having been exposed to insufficient and overprotective parental care.

### Methodology

*Case-control study.* A sample of 125 outpatients (92 women, 33 men) diagnosed as having neurotic depression were matched for age, sex, and social class with a general practitioner's patients who had no history of depression. Each patient completed the PBI, a self-report measure of parents during the subject's first 16 years. The reliability and validity of the instrument has been previously tested and found to be "acceptable."

### Results

The depressed patients scored both parents as being significantly less caring and more controlling than the controls ($p<.002$). The same sex parent was scored as less caring and more controlling; 67 percent of the cases and 37 percent of the controls scored at least one parent as having "affectionless control" (low care/high protection). This represents a relative risk of 3.4 for depression with parental "affectionless control."

### Comments

Parker's hypothesis is that early family influences can be a risk factor for the development of nonbiological or neurotic depression. The validity of the study primarily lies in how well the PBI measures actual parent

behavior (see Parker 1981). It is not clear how the concepts of parental overprotection and affectionless control compare with the family therapy concepts of cohesion, enmeshment, and adaptability.

**114. Parkes, C.M.; Benjamin,B.; and Fitzgerald, R.G. Broken Heart: a statistical study of increased mortality among widowers.** *British Medical Journal* **1:740-743, 1969.** (See also Young et al. 1963.)

**Problem**

To determine any increased mortality among widowers.

**Methodology**

*Prospective cohort study.* This study identified 4,486 widowers over 55 years of age in London from their wives's death certificates and followed them for 9 years. The widowers' mortality rates were compared to married men of the same age (census data from the National Health Service) and social class.

**Results**

The initial 5-year followup (Young et al. 1963) reported overall mortality while the 9-year followup (Parkes 1969) reported mortality by specific causes. The widowers had a 40 percent increase in mortality over the age matched married population for the first 6 months of bereavement only. Mortality rates for the subsequent 8 years were the same. The greatest mortality risk (RR=1.6) for the widowers was heart disease. The concordance in the spouses' causes of death was 23 percent greater than predicted by chance.

**Comments**

The major flaw in this otherwise well-controlled study is the use of mortality rates from the general married population. This group is likely to differ from the widower group in factors that would affect mortality such as occupations, residence, health habit, and education, and these may confound the results. The greater than predicted concordance in causes of death among spouses gives some support for the alternative hypotheses of homogamy or shared environment.

**115. Pearce, J.W.; LeBow, M.D.; and Orchard, J. Role of spouse involvement in the behavioral treatment of overweight women.** *Journal of Consulting and Clinical Psychology* **49:236-244, 1981.**

**Problem**

To evaluate the effectiveness of different types of spousal involvement in the behavioral treatment of overweight women.

**Methodology**

*Randomized controlled trial.* A sample of 68 overweight women were randomly assigned to one of five experimental groups: (1) a behavioral treatment program to reduce weight (wife alone); (2) in addition to the behavioral program, the women's spouses were trained in modeling, monitoring, and reinforcement techniques (cooperative spouse); (3) spouses were told not to participate or interfere in wife's program (nonparticipating spouse); (4) alternative, nonbehavioral program (alternative); and (5) a delayed treatment group (control). Treatment lasted 10 weeks, and subjects were followed up at 3, 6, and 12 months.

**Results**

Those subjects in the cooperative spouse group lost significantly more weight than the alternative treatment group at the end of treatment and throughout the followup period. They had lost significantly more weight than the wives-alone group at the final 1-year followup. Only the cooperative spouse group and the nonparticipating spouse group maintained their weight losses during the followup period.

**Comments**

This study demonstrates the advantages of including the spouse in a weight reduction program, particularly for maintaining weight loss after treatment. It suggests, however, that much of the effect of spouse involvement can be obtained simply by instructing the spouse not to interfere in the treatment program.

**116. Prendergast, T.J. Parent-child relationships associated with health related behaviors. In: Kaplan, B.H., and Cassel, J.C., eds.** ***Family and Health: An Epidemiological Approach.*** **Chapel Hill: University of North Carolina Press, 1975. Pp. 5-22.**

**Problem**

To study the association between parent-child relationships and illness behaviors (e.g., symptom reporting, illness episodes, physician visits, and accidents) in adolescents.

**Methodology**

*Cross-sectional study.* Fifty-seven high school students were questioned regarding their own illness behavior and their parents' behavior toward them. Schaefer's Child's Report of Parent Behavior Inventory measures three dimensions of the parent-child relationship: firm-lax control, acceptance-rejection, and psychological control-tension (controlling child's behavior by guilt versus anxiety). Illness behaviors during the previous 9 months were assessed by self-report and included number of visits to a physician for an illness; number of illnesses resulting in school absences; number of accidents that restricted activities for a day or more; and number of symptoms, specific (dizziness, diarrhea, nausea) and nonspecific (excessive tiredness, cough). Variables controlled for included race, sex, and education level of mother and father.

**Results**

In multivariate analysis, the number of physician visits was correlated to firm maternal control and father's psychological tension. Nonspecific symptoms (cough and tiredness) were associated with firm maternal control, and accidents with maternal psychological tension. There were no relationships with the number of illnesses or total illnesses.

**Comments**

It is not clear in this study what some of the dimensions of parent-child behaviors are measuring, particularly "psychological control or tension." It is understandable that firm maternal control is associated with more physician visits without there being more illness episodes, as adolescents tend to avoid going to the physician. The significance of the other findings is not clear.

**117. Purcell, K.; Brady, K.; Chai, H.; Muser, J.; Molk, L.; Gordon, N.; and Means, J. The effects of asthma in children of experimental separation from the family.** *Psychosomatic Medicine* **31:144-163, 1969.**

**Problem**

To examine the effect of removal of the family ("familyectomy") on a child's asthma.

**Methodology**

*Quasi-experimental study.* Twenty-five asthmatic children and their families participated. The children were interviewed to assess whether emotional factors played a significant role in their asthma. Only in those children where emotions appeared to be important (N=13) was an improvement with the intervention predicted. For 2 weeks the rest of the family was "removed" from the home, and no contact with the family was allowed. The children were cared for in their own homes by surrogate parents. The child's asthma was assessed in four ways: (1) peak expiratory flow rates were taken four times daily; (2) daily examination for wheezing; (3) daily medication log; and (4) parent's (or surrogate parent's) diary of asthma activity.

**Results**

Seven of the 13 children who were predicted to improve during the separation from their families improved significantly in at least two of the four measures of asthma activity, while 3 of the 12 children not expected to improve had improvement in their asthma. The authors conclude that the diagnostic interview is useful in assessing the relevance of psychosocial variable in asthma.

**Comments**

This very unusual study was done prior to Human Studies Committees. While experimental studies usually apply the intervention to only half of the subjects, this study separated all of the children from their families but predicted which would improve. The implication is that the ones not predicted to improve act as a control group, which they are not. One must consider this a series of case reports of an unusual method of treating asthma.

**118. Reed, D.; McGee, D.; and Yano, K. Psychosocial processes and general susceptibility to chronic disease.** *American Journal of Epidemiology* **119:356-370, 1984.**

**Problem**

To examine the relationship between chronic stressors, social networks, and mortality.

**Methodology**

*Prospective cohort study.* A sample of 4,251 males of Japanese ancestry living in Hawaii who had no evidence of heart disease completed an extensive psychosocial questionnaire as part of the Honolulu Heart Project and were followed for 7 years. Chronic stressors assessed included geographical and generational (occupation and education compared to father) mobility, sociocultural (change in diet, religion, occupational or educational level), and spousal (difference from wife in age, education, religion, or use of Japanese language) inconsistencies. Measures of social networks included marital status, number of living children, number of persons in household, and geographical proximity with parents. The only variables controlled for were smoking and blood pressure.

**Results**

No association was found between any psychosocial processes and mortality at 7-year followup, even when high stress (mobility and inconsistency) and low social supports were examined.

**Comments**

This negative finding in a well-designed study is difficult to explain. Perhaps different measures of social supports are needed for other cultures, or social supports are not as important in other populations.

**119. Reed, D.; McGee, D.; Yano, K.; and Feinleib, M. Social networks and coronary heart disease among Japanese men in Hawaii.** *American Journal of Epidemiology* **117:384-396, 1983.**

**Problem**

To examine the relationships between social networks and the incidence and prevalence of coronary heart disease (CHD) among Japanese men in Hawaii.

**Methodology**

*Cross-sectional and prospective cohort study.* As part of the Honolulu Heart Program, 4,653 men of Japanese ancestry living in Hawaii were studied. The men completed psychosocial questionnaires and underwent extensive physical examinations to assess the prevalence of CHD. They were followed closely for 6 years for the development of CHD (incidence). The two methods used to obtain a social network scale were a conceptual scale consisting of nine questions covering connections with relatives, coworkers, religious, and social organizations and an empirically derived score from factor analysis, choosing those questions that correlated best with each other.

**Results**

Using multivariate analysis controlling for known cardiac risk factors, there was no significant relationship between either the conceptual or factor-derived social network score and any measure of CHD incidence (fatal and nonfatal myocardial infarction, angina, or total CHD). There was a significant relationship between total CHD prevalence and both scales of social networks.

**Comments**

One explanation for the discrepancy between the prevalence and incidence results is that poor social supports may be a consequence of CHD. Another explanation is that since prevalence rates are higher than incidence rates, the effect of social supports on the latter might have been missed (Type-II error). This study, like its companion dealing with overall health and social supports in the same population (Reed et al. 1984), fails to demonstrate any effect of social supports on health.

**120. Rees, W.D., and Lutkins, S.G. Mortality of bereavement.** *British Medical Journal* **4:13-16, 1967.**

**Problem**

To assess whether mortality increases after the death of a relative.

**Methodology**

*Retrospective cohort study.* A population-based survey of mortality was conducted in a small Welsh town (N=5184) over a 6-year period (1960 to 1966). Of the residents, 488 died during that period, and the 371 who

had close relatives (spouse, parents, siblings, or children) constituted the survey group (the cases). The mortality of their relatives (bereaved) was determined from the same data. Each case (a resident with a close relative who died) was matched by age, sex, and marital status with a living resident (controls) who had close relatives. The mortality of these relatives (nonbereaved) was compared to the bereaved relatives.

**Results**

The mortality rates for the bereaved relatives was significantly greater than for the nonbereaved relatives for the first 4 years of bereavement. The effect was greatest for the spouses during the first year: 12.2 percent of the bereaved spouses died, while only 1.2 percent of the nonbereaved spouses died. The close relatives excluding spouses also had a significantly increased risk of mortality from bereavement in the first year.

**Comments**

The relative risk of dying during the first year of bereavement for a spouse in this study was approximately 10, far greater than any that has been found in any other cohort study of bereavement. This is primarily due to the very low mortality rate of the nonbereaved (control) spouses. A closer examination of the methodology suggests the reason. The deaths during the 6-year period (488) appear to have been used both for the index cases and to assess mortality of relatives. Thus, when a relative (bereaved or nonbereaved) died, he became a case as well as mortal relative, and if any of his relatives died, they might be counted twice, being related to both the original case or control and the dead relative. Since all the deaths in the region were used for the survey group (cases) and for the outcome (relative deaths), many of the deaths were both dependent and independent variables. This unusual design makes interpretation of the results difficult.

**121. Reiss, D. The family and schizophrenia.** *American Journal of Psychiatry* **133:181-185, 1976.**

**Problem/Methodology**

This review provides an overview of the research on the role of the family in the etiology of schizophrenia. The author suggests that to demonstrate a causal relationship between family factors and schizophrenia, the family variables must be clearly defined and reliably measured. In addition, they should be specific to schizophrenia, have an impact before

the appearance of the disorder and not be confounded by other factors. (30 references)

**Results**

Reiss concludes that the research on parental communication deviance (CD) comes closest to fulfilling his criteria and is the most productive area of research. CD appears to be fairly specific to schizophrenia, and its measurement is well standardized and reliable. Studies to assess whether CD precedes the development of schizophrenia have involved experimental models, retrospective studies (followback) and prospective studies of high-risk families. The author concludes that these studies suggest that CD is not merely an epiphenomenon to schizophrenia. The major confounding variable to be accounted for is genetic factors, and studies of adoptive schizophrenics demonstrate that the relationship between CD and schizophrenia persists when genetic influences are controlled for. The author concludes that CD may play a causal role in schizophrenia and that since the development of communication has biological roots, this area of research might be a meeting ground for the biological and familial theorists.

**122. Rosenberg, C.M. The young addict and his family.** *British Journal of Psychiatry* **118:469-470, 1971.**

**Problem**

To compare drug addicts to their siblings with regard to their relationships with their parents, physical and psychiatric illnesses, and childhood traits and behaviors.

**Methodology**

*Cross-sectional study.* One or both parents of 35 drug addicts were interviewed regarding their addict child and one or more siblings over the age 13.

**Results**

As recalled by the parents, addicts were significantly more likely to have had a physical illness during childhood, to have had more antisocial traits, and to be described as "shy." They were less likely than their female sibs to have had a good relationship with their father.

**Comments**

This study should really be considered a descriptive study of how parents perceive their addicted children. Comparisons with other siblings are not very meaningful without more objective measures of the variables and control for confounders such as age and sex.

**123. Rosenberg, C.M. Young drug addicts: Background and personality. *Journal of Nervous and Mental Disease* 148:65-73, 1969.**

**Problem**

To investigate the background and personality of young drug addicts.

**Methodology**

*Cross-sectional study.* Fifty drug addicts underwent a detailed psychiatric evaluation and completed the Eynsenck Personality Inventory (measures neuroticism), IPAT Anxiety Scale, and Raven's Progressive Matrices (measures intelligence). School records were obtained on 20 of the subjects. A comparison group of young alcoholics was similarly evaluated.

**Results**

The only significant difference between the alcoholics and drug addicts was that the addicts came from smaller families with fewer alcoholic fathers and were less likely to be Catholic. The majority of the drug abusers came from working-class families disrupted by alcoholism, divorce, or mental illness. Over half of the fathers of the addicts were absent from the home for long periods of time.

**Comments**

The most striking finding of this study is the similarity of the family backgrounds of drug addicts and alcoholics. Without a control group matched for social class, the description of these families is difficult to interpret.

**124. Rosenthal, T.L.; Akiskal, H.S.; Scott-Strauss, A.; Rosenthal, R.H.; and David, M. Familial and developmental factors in characterological depressions. *Journal of Affective Disorders* 3:183-192, 1981.**

**Problem**

To compare the developmental and family histories of two subgroups of patients with chronic low-grade depression (subaffective dysthymic and character-spectrum).

**Methodology**

*Case-control study.* Fifty patients with chronic low-grade "characterological" depression were divided into two groups (dysthymic and character-spectrum) based on their response to tricyclic antidepressants. (Previous research had distinguished these groups on pharmacological, phenomenological, sleep EEG, social and followup data, with the dysthymic patients sharing many of the features of unipolar depression.) Forty patients with unipolar depression were chosen as controls. Developmental and family histories were obtained by semistructured interviews.

**Results**

The character-spectrum patients were much more likely to have lost a parent and have been in a foster home or orphanage than either the dysthymics or unipolar patients. A family history of alcoholism was more common in the character-spectrum patients, while a family history of depression was more common in the dysthymic and unipolar patients. There was no difference among the three groups in the family history of suicides. The character-spectrum patients were more likely to have parents who both had psychiatric illness (assortative mating) than either of the other two groups.

**Comments**

It is not known whether the two groups of chronic depressives differed in other variables such as social class, which may account for some of the findings. Lower social class might explain the higher incidence of parental death and alcoholism in the character-spectrum patients. Furthermore, one's illness or social class may influence how one describes and labels parents' psychopathology (e.g., alcoholism versus depression).

**125. Rounsaville, B.J.; Weissman, M.M.; Prusoff, B.A.; and Herceg-Baron, R.L. Marital disputes and treatment outcome in depressed women.** *Comprehensive Psychiatry* **20:483-490, 1979.**

**Problem**

To determine the effect of marital disputes on the treatment outcome of depressed women.

**Methodology**

*Prospective cohort study.* Seventy-six moderately depressed patients were part of a randomized control trial of antidepressant medication and psychotherapy. Depressive symptoms were assessed using the Raskin Depression Scale and the Hopkins Symptom Checklist initially, at 4 to 6 weeks (the beginning of maintenance treatment) and at 8 months (end of treatment). Neuroticism was rated using the Maudsley Personality Inventory. The presence of significant marital disputes was determined from interview transcripts at the beginning and end of treatment by a blind rater. The women were divided into three marital groups (no marital disputes, marital improvement, and no marital improvement). There was no difference in the severity of depression between the three groups.

**Results**

Fifty-four percent of the women were judged to have marital disputes before treatment, and only 24 percent of these had marital improvement during treatment. A low neuroticism score was highly predictive of marital improvement. At the end of treatment, those patient with no marital improvement were significantly more symptomatic than the other two groups.

**Comments**

The authors admit that a causal relationship between marital disputes and symptomatic improvement cannot be established since both were changing over time. They argue that marital improvement was unlikely to be due to alleviation of depression since all of the women had at least a 50 percent improvement in symptoms during the initial 4 to 6 weeks (part of the inclusion criteria) with concomitant marital improvement. More studies are necessary to look at the nature of this relationship.

**126. Ruberman, W.; Weinblatt, E.; Goldberg, J.D.; and Chaudhary, B.S. Psychosocial influences on mortality after myocardial infarction.** *New England Journal of Medicine* **311:552-557, 1984.**

**Problem**

To examine the interrelationships between educational level, stress, social isolation and survival after myocardial infarction (MI).

**Methodology**

*Prospective cohort study* (ancillary study to the Beta-blocker Heart Attack Trial, a randomized control trial of propanolol after MIs). Between 6 weeks and 6 months after their MI, 2,320 male participants in the BHAT study were interviewed. Each completed a 20-item questionnaire constructed to measure four psychosocial variables: life stress, social isolation, depression, and Type-A personality. Of the six questions measuring stress, one asked about divorce or breakup in the family, another about violent events involving patient or family, and the rest involved occupation or finances. Social isolation was measured by whether the patient "visited friends and relatives," was a member of a voluntary association or church, and whether he reported "talking to medical personnel about any possible life changes." Numerous clinical and personal characteristics were measured and those that correlated with survival were entered with the psychosocial variables into a Cox multivariate regression analysis for survival. These confounding variables included age, cardiac risk factors, ventricular arrhythmias, angina, smoking, congestive heart failure, and an overall myocardial summary index. Patients were followed for 2 to 4 years.

**Results**

When confounding variables were controlled for, both stress and social isolation were independently and strongly associated with mortality (overall and sudden death). For patients with high stress and social isolation, the relative risk of dying after MI was 4.56. This compares with a relative risk of 3.05 for patients with poor myocardial function, 3.82 for patients with ventricular arrhythmias, and 1.75 for patiented who smoked. There was no relationship between depression or Type-A personality and mortality.

**Comments**

This well-designed study shows that psychosocial factors have a greater impact on survival after a heart attack than any measured physiological variable. Precisely what psychosocial variables were being measured is not clear. The questionnaire's reliability and validity are uncertain. For instance, the stress questions seem to measure socioeconomic status and are unlike any instruments used in the stress literature. The social

supports questions did not include family relationships, which have been the most powerful predictors in the social supports literature, but include "talking with medical personnel." This very important study should be used as a model for future research on family and health, with better measures of family and social supports.

**127. Saccone, A.J., and Israel, A.C. Effects of experimental versus significant other-controlled reinforcement and choice of target behavior on weight loss.** *Behavior Therapy* **9:271-278, 1978.**

**Problem**

To compare reinforcing weight loss with reinforcing a change in eating behavior, and reinforcement by the therapist with reinforcement by the spouse (or significant other), for their effectiveness in weight loss.

**Methodology**

*Randomized controlled trial.* Forty-nine subjects were randomly allocated to six groups, which included a control group, a group that received the basic stimulus control program without specific reinforcement, and four groups that differed by who provided the reinforcement (spouse or therapist) and what was reinforced (weight loss or change in eating behavior). The outcome was the weight loss over the 9-week treatment period.

**Results**

All treatment groups had significantly greater weight loss than the controls. The group that received reinforcement by the spouse for change in eating behavior had the best results. The groups that were reinforced for behavior change had significantly greater weight loss than the groups reinforced for weight loss. The difference in weight loss between the groups that received reinforcement by the spouse versus the therapist approached significance ($p$=0.6).

**Comments**

This was the first study that suggested that the spouse's active involvement in a treatment program could improve the results. Other studies in the treatment of obesity have confirmed this.

**128. Schleifer, S.J.; Keller, S.E.; Camerino, M.; Thornton, J.C.; and Stein, M. Suppression of lymphocyte stimulation following bereavement.** *JAMA. Journal of the Americal Medical Association* **250:374-377, 1983.**

**Problem**

To assess the changes in lymphocyte responsiveness during bereavement.

**Methodology**

*Prospective cohort study.* Twenty spouses of women with advanced breast cancer were followed prospectively with lymphocyte stimulation responses to phytohemagglutinin, concanavalin A, and pokeweed mitogens measured every 6 weeks for a 3-year period.

**Results**

In 15 men whose spouse died during the study period, there was a significant drop in lymphocyte responsiveness during the first 2 months of bereavement, which rose to an intermediate level at 2 to 12 months later. There was no change in the number of T- or B-lymphocytes.

**Comments**

The finding of significant decline in lymphocyte functioning in a prospective study with a few subjects is strong evidence for a decline in immunity during bereavement.

**129. Seldin, N.E. The family of the addict: A review of the literature.** *International Journal of the Addictions* **7:97-107, 1972.**

**Problem/Methodology**

This review covers the early articles and research on the families of addicts. The literature from sociology, psychology, psychiatry, and social work are covered. (35 references)

**Results**

Most of the literature covered is theoretical or uncontrolled observations of addict families. There are very few empirical studies. The studies

from sociology describe the family breakdown leading to an inability to socialize the addict. The work in the other fields are influenced by psychoanalytic theory that emphasizes the immature personality development of the addict, resulting from a dominant, overinvolved mother and a distant father.

**130. Shouval, R.; Ber, R.; and Galatzer, A. Family social climate and the health status and social adaptation of diabetic youth.** *Pediatric and Adolescent Endocrinology* **10:89-93, 1982.**

**Problem**

To assess how family behaviors or "climate" relates to adherence to diabetic regimen.

**Methodology**

*Cross-sectional study.* Ninety-seven diabetic children aged 10 to 20 and their families were studied. The family environment was assessed with two different instruments. Moos's Family Environment Scale measures family support, encouragement for individuation, and the order and structure of the family. The Bronfenbrenner Scale measures family support and discipline. Adherence to the diabetic regimen was assessed subjectively by the medical staff who had prolonged contact with the children.

**Results**

Adequate diabetic control in the adolescents was associated with clear order and organization within the family and support by the father. It was negatively associated with moralizing in the family.

**131. Stanton, M.D. Family treatment approaches to drug abuse problems: A review.** *Family Process* **18:251-280, 1979*a*.**

**Problem/Methodology**

This indepth review examines 68 different studies or programs reporting the use of family treatments for drug abuse. Studies are categorized by the modalities used (marital, parent groups, concurrent parent and identified patient, individual family, sibling oriented, and multifamily groups). Outcomes and implications for treatment activities are discussed. (59 references)

**Results**

Fourteen of the studies reported outcomes of their family treatments, but only six of these used control or comparison groups. Nearly all of the uncontrolled studies of outcome reported good results from treatment. Two of the controlled studies used adequate control groups, and one reported improved outcome with family treatment. The other studies used self-selected or nondrug-abuser control groups or compared types of family treatments.

Based on the studies that report outcome, the author concludes that marital therapy appears to be the least effective and strategic/structural therapy the most effective modality of family treatment. The research on the effectiveness of family therapy for drug abuse is promising but inconclusive.

**132. Stanton, M.D. Drugs and the family: A review of the recent literature.** *Marriage and Family Review* **2:1-10, 1979*b*.**

**Problem/Methodology**

This review covers the most recent studies of the role of the family in illicit drug abuse. Drugs considered are narcotics (primarily heroin), depressants, stimulants, hallucinogens, and cannabis. The majority of research has been done on heroin addiction and polydrug use. The literature on family treatment of drug abuse is briefly reviewed. A family systems paradigm for understanding the development and maintenance of drug abuse is presented. Finally recommendations are made for future drug policy, research, treatment, and prevention. (80 references)

**Results**

Studies of heroin addicts demonstrate that they maintain close contacts with one or both parents. Mothers are described as indulgent and overprotective, while fathers are seen as weak and distant. There is a high incidence of alcoholism in the parents of addicts. Addicts have poor marital relationships, which resemble their parents' marriages. Few studies have been done on abusers of depressants, stimulants, and hallucinogens. Most of these studies suggest that these families are similar to families of heroin addicts. Studies of cannabis and polydrug abuse suggest that drug or alcohol use by the parents of these families is common. Only three controlled studies of the family treatment of drug abuse have been published, two of which demonstrated improved outcome with family treatment.

**133. Stanton, M.D, and Todd, T.C.** ***The Family Therapy of Drug Abuse and Addiction.*** **New York: Guilford Press, 1982. Pp. 403-421, 437-443.**

**134. Stanton, M.D.; Todd, T.C.; Steier F.; Van Deusen, J.M.; Marder, L.R.; Rosoff, R.J.; Seaman, S.F.; and Skibinski, E.** ***Family Characteristics and Family Therapy of Heroin Addicts: Final Report 1974-1978.*** **Prepared for the Psychosocial Branch of the National Institute of Drug Abuse, 1979.**

**Problems**

1. To compare the family characteristics of drug addicts and normal controls.

2. To compare the effectiveness of family therapy to traditional individual approaches in the treatment of drug addiction, and to measure changes in family characteristics after structural family therapy.

**Methodology**

1. *Cross-sectional study.* Sixty-one families of addicts enrolled in a trial of family treatment of drug addiction were matched with 25 families of nonaddicted veterans for 10 different variables, including age, race, family size, and contact with family. During the initial family evaluation session, the families were videotaped while performing four structured tasks (Wiltwyck Battery), which involved decisionmaking and conflict resolution. Family interactions were rated for 17 process and content variables. The amount of time each family member spoke and the communication sequences (who spoke after whom) were recorded electronically. Each family member also completed an intrafamily perception test (The Animal Concepts Picture Series). The task was to chose from a deck of cards displaying different animals the pictures that reminded the subject of other members of the family (Actual), and the animals that best represented how the subject would like other family members to be (Ideal). Cards were scored on three semantic dimensions: weak-strong, fast-slow, and good-bad.

At the end of treatment (see study 2), the families returned for a second family evaluation session in which the same assessment was completed.

2. *Randomized controlled trial.* Over a 30-month period, 118 young male drug addicts who lived with their parents and who had a chronic history of addiction (greater than 2 years) with more than two attempts at detoxification were entered into the trial. If there was a family therapist available at the time of intake, the addict was assigned to "family treatment" (N=65). The remaining 53 addicts served as controls and received

routine treatment consisting of methadone maintenance, individual counseling and "other services." After an initial family evaluation session, the family treatment group was randomized into three groups. The paid family therapy group (N=21) was paid to attend approximately 10 family therapy sessions. Family members were paid more if all family members attended and if the addict's urine was free of drugs. The unpaid family therapy group (N=25) received the same treatment without payment. The family movie treatment group (N=19) was paid (in the same manner as the first group) to attend weekly noncontroversial anthropology movies.

Two measures of outcome were assessed 1 year after the end of treatment. Drug-free days were determined for five different drug categories (legal and illegal opiates, illegal nonopiates, marijuana, and alcohol) and derived from multiple sources including clinic records, urine testing, and reports from drug counselors, family members, and the addict. Because drug-free days did not adequately deal with addicts who died or were incarcerated, level of success was derived for an alternative outcome. Those addicts with greater than 80 percent drug-free days were classified as "good," those between 20 and 80 percent as "fair," and those with less than 20 percent drug-free days or who died during followup were classified as "poor."

Thirty percent (N=39) of the addicts initially assigned to family treatment, and 37 percent (N=31) of those assigned to nonfamily treatment dropped out shortly after entering the program. In addition, 27 "family" cases refused to participate in family treatment. None of these cases was included in the outcome data.

**Results**

1. Overall, the addict families exhibited more rigid and stereotypic interactions than the normal families. Addict families displayed more conflict, especially between the mother and addict. During problem solving, the mothers of addicts were more dominant and task oriented, while the fathers interrupted more. Using the electronically collected data, the addict families had more individual talking time than the controls. On the perceptual test, the mothers of addicts perceived their husbands as weaker and their sons as less ideal. The addicts viewed themselves and their fathers as "worse" and stronger than the veterans in the normal families.

2. At the end of treatment, the addict families that received family treatment exhibited fewer successful interruptions and more unsuccessful interruptions, than those that did not. Fathers were more involved in family tasks, and there was more agreement among family members.

One year after the end of treatment, there was a significant difference between groups for illegal nonopiate drug-free days only, using an analysis for variance (ANOVA). When covariates were controlled for (ANACOVA), there was also a significant difference for legal and illegal

opiates and marijuana. In each case, the order of effectiveness of treatment groups was the same. Paid family therapy did better than unpaid, which surpassed the family movie group. The nonfamily treatment group had the least success. Using the level of success as an outcome, the combined family therapies were significantly better than the combined nonfamily and family movie groups for the same four-out-of-five drug categories. There was no significant difference in alcohol consumption (days free or total consumption) between any of the groups.

The addicts who refused family treatment were compared to the other addicts using 27 demographic variables. They did not differ significantly with the nonfamily treatment addicts, and were better educated and started drug use at an older age than the other family treatment addicts. These two variables have been associated with a better prognosis in the addiction literature.

**Comments**

This study documents the effectiveness of family therapy for a group of patients who have traditionally been thought to be resistant to any type of psychotherapy. The book describes the conceptual and therapeutic approach in detail and includes several case examples. The research design is quite elegant and the most sophisticated in the family therapy outcome literature. It is the only study that uses direct observation of addict families to compare them to control families and to measure changes in family interaction with family therapy. The results support clinical reports of addict families as being dominated by the mother, with a distant and uninvolved father. The study also demonstrates changes in family interactions that occurred with treatment. Some of the changes (e.g., interruptions) are explicit goals of structural family therapy.

While this study should serve as a model for future studies of family interactions in other disorders, there are two significant problems with it. The addicts were not randomly allocated to family versus nonfamily treatment. They entered the family treatment group if there was a therapist of the same race available. Because of the high dropout and "refuser" rate, the outcome data are based on approximately half of the addicts initially randomized to the family group. While comparisons of the "refusers" to the other addicts did not suggest they were otherwise different, their exclusion weakens the results of the trial.

**135. Steidl, J.H.; Finkelstein, F.O.; Wexler, J.P.; Feigenbaum, H.; Kitsen, J.; Kliger, A.S.; and Quinlan, D.M. Medical condition, adherence to treatment regimens, and family functioning: Their interaction in patients receiving long-term dialysis treatment.** *Archives of General Psychiatry* **37:1025-1027, 1980.**

**Problem**

To assess the relationship between medical condition, adherence to treatment, and family functioning.

**Methodology**

*Cross-sectional study.* Twenty-three medically stable patients on long-term dialysis and their families were studied. The medical condition of each patient was assessed by three physicians, and objective tests measured symptom reporting, mental impairments, and overall level of function. Adherence to diet, dialysis schedule, and medication were assessed subjectively by three physicians, a nurse, a social worker, and a dietitian. Serum chemistries were used in adherence assessment. Family functioning was assessed by rating a 30-minute videotape of the family completing a series of highly structured and often stressful family tasks (planning a menu, discussing a recent disagreement, giving other family members feedback). Families were rated using the Beavers Timberlawn Family Evaluation Scale (BTFES), which measures nine components of family functioning and includes a global score.

**Results**

Overall family functioning was correlated significantly the medical assessment and approached significance with adherence ($p$=.054). Specific areas of family functioning that correlated with medical and adherence assessment were a strong coalition between parents, close family relationships that respect individuality (neither enmeshed nor disengaged), and a warm affectionate mood of the family.

**Comments**

This is one of the few studies of physical illness that assess the family by direct observation using a standardized scale. On the other hand, the assessments of each subject's medical condition and adherence were largely subjective. The psychosocial context of the patient, including family functioning might influence these assessments.

**136. Steinglass, P. Experimenting with family treatment approaches to alcoholism, 1950-1975: A review.** *Family Process* **15:97-123, 1976*a*.**

**Problem/Methodology**

A review of the experimental and clinical literature on family treatment approaches to alcoholism. Potential explanations for the reluctance of family therapists to become more involved in this problem are discussed. (46 references)

**Results**

The earliest studies of alcohol and the family examined the alcoholic marriage. Psychiatrists proposed that women married alcoholics and encouraged alcoholic behavior to satisfy intrapsychic needs. Sociologists viewed the women as victims and their behaviors the result of living with alcoholics. The earliest family treatments began with concurrent group therapies for alcoholics and their spouses, and results were encouraging. A major development was the adaptation of family systems theory to alcoholism. An interactional model proposed that the alcoholic's behavior has an adaptive and stabilizing function within the family and that the family helps to maintain it. Studies on the use of conjoint family therapy for alcoholism are encouraging but inconclusive. Studies of families during intoxication lend support to the adaptive function of alcoholism. Family therapists have shifted from an individual approach with abstinence as the primary goal of treatment to viewing the family as the patient and improved family functioning as the primary goal of treatment. Possible explanations for family therapists' disinterest in alcoholism include the difficulty and controversy about what distinguishes pathological and social drinking, the presence of the symptom in the parental rather than the childhood generation, and the discomfort associated with dealing with intoxicated patients.

**137. Steinglass, P. Family therapy in alcoholism. In: Kissen, B., and Begleiter, H., eds.** *The Biology of Alcoholism.* **Vol. 5.** *Treatment and Rehabilitation of the Chronic Alcoholic.* **New York: Plenum Press, 1976*b*. Pp. 259-299.**

**Problem/Methodology**

The development of family therapy for the treatment of alcoholism is reviewed from a historical perspective. The author discusses the role of family systems theory. (80 references)

## Results

The author identifies and discusses six basic concepts of family systems theory that distinguish family therapy from other treatment modalities: the family as a system; homeostasis; identified patient/scapegoat; communication patterns; behavioral context; and boundaries. The development of a family approach to alcoholism is divided into six phases: (1) Early interest in family issues and alcoholism, derived primarily from a psychoanalytic approach. (2) Alcoholic marriage: the study of marital interactions focused on the role of the spouse in promoting alcoholism. (3) Concurrent therapy for alcoholics and spouses: a series of studies in the 1960s demonstrated the effectiveness of involving alcoholic spouses in group therapy. (4) The adaptation of family theory to alcoholism treatment: a systems approach to alcoholism was primarily developed by Steinglass and his colleagues from observations of alcoholic families. The adaptive consequences of alcoholism for the family are stressed. (5) Conjoint therapy with the alcoholic family: a series of uncontrolled studies of conjoint family therapy report good results, but no controlled studies exist. (6) Multiple-couple and multiple-family group therapy approaches: two controlled trials have demonstrated the effectiveness of multicouple group therapy. Al-Anon family groups are the most commonly used family approach to alcoholism, but no studies of their effectiveness exist. The author compares the approach of Al-Anon with that of family systems theory.

### 138. Steinglass, P. An experimental treatment program for alcoholic couples. *Journal of Studies on Alcohol* 40:159-182, 1979.

## Problem

To observe the marital interactions of alcoholic couples and assess the effectiveness of conjoint hospitalization.

## Methodology

*Prospective cohort study.* Ten couples with an alcoholic member who had failed previous treatment were enrolled in the study and split into three groups. Treatment was divided into three phases: 2 weeks of outpatient multicouple groups; a 10-day conjoint hospitalization; and 3 weeks of additional outpatient multicouple groups. Couples were assessed before treatment and 6 months after treatment with the following instruments: (1) Chronological Drinking Record (CDR), which measures individual drinking behavior; (2) SCL-90, which measures individual psychiatric symptomatology; (3) Structured and Scaled Interview to Assess Maladjustment (SSIAM), which measures individual psychosocial func-

tioning; (4) Inventory of Marital Conflicts (IMC), which assesses marital interactions; and (5) Subject is Marriage (SiM), which measures eight areas of marital relationships. Couples were hospitalized on a ward designed to be as much like home as possible with alcohol freely available. The couples participated in daily couples groups, which focused on the role of alcohol in the marriage. Marital interactions were videotaped.

**Results**

The marital interactions observed during sobriety and intoxication are described in detail and two case studies are presented (Steinglass et al. 1977). Each couple had recognizable patterns of interaction during sober and intoxicated states and predictably cycled from one to the other. Intoxicated states were associated with more structured, predictable, and exaggerated interactional behaviors. These behaviors appeared to have an adaptive role for each couple.

Eight of the 10 couples completed treatment. Six months after treatment ended (Steinglass 1979), five of the alcoholics reported drinking less (CDR), with three abstinent. There was no significant change in the psychiatric symptomatology (SCL-90) in the husbands. A reduction in drinking was associated with improvement in the spouses' symptoms. There was a nonsignificant improvement in psychosocial functioning (SSIAM). While seven couples changed their patterns of marital behavior (IMC), there was no discernible pattern of change. Couples reported improved communication, but decreased satisfaction with other areas of the marriage (SiM).

**Comments**

These case studies generate hypotheses about the role of family interactions in alcoholism. Without a control group, these hypotheses cannot be tested. The observations of patterns of interactions and the adaptive consequences of intoxicated behavior is subject to the observers' biases and theoretical orientation. This study demonstrates the difficulty of demonstrating empirically the role of alcoholism in the family.

**139. Steinglass, P.; Davis, D.I.; and Berenson, D. Observations of conjointly hospitalized "alcoholic couples" during sobriety and intoxication: Implication for theory and therapy.** *Family Process* **16:1-16, 1977.**

**140. Steinglass, P. Assessing families in their own homes.** *American Journal of Psychiatry* **137:1523-1529, 1980.**

**141. Steinglass, P. The alcoholic family at home: Patterns of interaction of dry, wet, and transitional stages of alcoholism.** *Archives of General Psychiatry* **38:578-584, 1981*a*.**

**Problem**

To assess alcoholic family behavior in the home over a 6-month period, and to determine its relationship to the severity and phase of alcoholism and to individual psychiatric symptomatology.

**Methodology**

*Prospective cohort study.* Thirty-one families with an alcoholic spouse were observed at home during nine sessions, lasting 4 hours each, using the Home Observation Assessment Method (HOAM). Two observers in the home recorded basic family interactions in detail. A factor analysis of 25 behavioral indices yielded 5 factors: intrafamily engagement, distance regulation, extrafamily engagement, structural variability, and content variability. Measures of individual behavior included: (1) SCL-90, which measures psychiatric symptomatology; (2) Self-Administered Alcoholism Screening Test (SAAST), which assesses the physical and psychosocial consequences of alcoholism; (3) an observer rating scale of perceived comfort in the family's home; and (4) Chronological Drinking Record (CDR), a measure of the quantity and frequency of drinking. The families completed a CDR each week during the 6 months and based on their scores were divided into three alcoholic phases: stable wet (SW), stable dry (SD), and transitional (TR). Demographic family variables were controlled for and included ages and education of spouses, socioeconomic status, years of marriage, and size of family.

**Results**

Each family had consistent patterns of interactions, but there was a wide variability in patterns of interactions between families. There were significant correlations between two of the five HOAM dimensions of family behavior and individual measures of behavior (Steinglass 1980). Intrafamily engagement and content variability were negatively correlated with the alcoholic's overall psychiatric symptomatology (SCL-90), especially depression and anxiety. There was no correlation between the HOAM variables and the nonalcoholic spouse's symptoms. Distance regulation was negatively associated with the severity of alcoholism (SAAST). Extrafamily engagement was positively associated with the observers' comfort in the family.

When the families were divided by phase of alcoholism (Steinglass 1981*b*), distance regulation and content variability were significantly

different between groups. The SW phase families had high distance regulation, with family members dispersed throughout the house, and low content variability. Families in which the alcoholic switched from wet to dry or vice versa (TR) scored low on distance regulation, tending to huddle together, and content variability. SD families displayed midrange distance regulation and high content variability. A discriminate analysis of all five HOAM factors demonstrates different patterns of interactions among the three groups and suggests that SD and SW families display opposite or polar patterns.

**Comments**

This study demonstrates the value of direct observations of families within their own homes and the importance of considering the phase of alcoholism. Intrafamily engagement and distance regulation appear to measure two aspects of Minuchin's concept of enmeshment, while content variability is one aspect of rigidity or adaptability. The lack of association of any HOAM variable with the spouse's psychiatric symptoms is surprising and hard to account for. TR families (who experience a shift from a wet to dry phase) appear to have the most dysfunction, appearing the most rigid and enmeshed.

**142. Steinglass, P. The impact of alcoholism on the family: Relationship between degree of alcoholism and psychiatric symptomatology.** *Journal of Studies on Alcohol* **42:288-303, 1981*b*.**

**Problem**

To assess the relationships between degree and current phase (wet or dry) of alcoholism and psychiatric symptomatology of the alcoholic's spouse.

**Methodology**

*Cross-sectional study.* Thirty-one families with alcoholic husbands (23) or wives (8) either presently drinking (13) or abstinent (13) were assessed. Each family member completed the Self-Administered Alcoholism Screening Test, which measures physical, behavioral-social, and treatment consequences of alcoholism, and the SCL-90, a measure of psychiatric symptomatology. Current level of drinking was also assessed.

**Results**

Scores on the SCL-90 for either spouse were higher (more psychiatric symptoms) than the normal population but lower than psychiatric outpatients. The degree of psychiatric symptomatology of the nonalcoholic spouse was significantly correlated with his or her perception of the social-behavioral consequences of the alcoholism but not with the other measures of alcoholism (physical and treatment consequences or amount of alcohol consumed). There was no correlation between the alcoholic's symptomatology and any measure of alcoholism.

**Comments**

The critical finding in this study is that the psychiatric symptoms of the spouse were not correlated either to the present drinking status of the alcoholic (wet or dry) or to the amount of drinking being done. It suggests that the problems of alcoholic spouses are not simply due to the "stress" of their partners' drinking.

**143. Steinglass, P., and Robertson, A. The alcoholic family. In: Kissen, B., and Begleiter, H., eds.** *The Biology of Alcoholism.* **Vol. 6.** *Psychosocial Factors.* **New York: Plenum Press, 1983. Pp. 243-307.**

**Problem/Methodology**

A review of family factors in the development and course of alcoholism. Family assessment techniques are discussed. (100 references)

**Results**

Four approaches for assessing families and their contributions to alcoholism research are discussed: (1) projective tests to measure individual attributes or personalities within the family; (2) self-reports of family roles and structure; (3) direct observation of family interaction; and (4) assessment of the problem-solving behavior of families. Family structure studies have examined the role of structural characteristics, such as birth order, in the etiology of alcoholism. Numerous studies have shown that last born children have a higher incidence of alcoholism than other children, but these studies have all been methodologically flawed. Controlled studies have demonstrated that alcoholics have a higher incidence of early parental loss than the normal population. Whether this loss is specific to alcoholism or a risk factor for other psychiatric illnesses is not known. One study on the cross-generational transmission of alcoholism has

shown that alcoholic families who do not change their rituals to adapt to the alcoholic are less likely to have alcoholism develop in their children.

A series of studies by Steinglass have examined alcoholic family interactions in several "naturalistic settings." From observations of hospitalized alcoholic couples, the adaptive consequences of intoxicated behavior is described. A "life-history" model of alcoholic families was derived from long-term studies of alcoholic families in their homes. Different patterns of family interactions were observed during different phases of alcoholism. Due to a lack of attention to the phase of alcoholism the family is in, laboratory studies of alcoholic families have yielded mixed results. Several studies of family factors in treatment have suggested that the quality of the marital interaction, particularly high cohesion and low conflict, are correlated with good treatment outcome. The impact of family violence on the family is also discussed.

The author criticizes the studies of the family and alcoholism for taking an unsophisticated view of alcoholism, using low scientific standards and atheoretical approaches, and being too individually focused. He suggests using family research in schizophrenia as a model for future research.

**144. Susser, M. Widowhood: A situational life stress or a stressful life event.** *American Journal of Public Health* **71:793-795, 1981.**

**Problem/Methodology**

This editorial on the mortality of bereavement discusses the methodological limitations of many of the studies in the area. (23 references)

**Results**

The author concludes that there is evidence for increased mortality after widowhood but that there is conflicting evidence as to whether this is limited to the first few years of widowhood, and is due to the acute stress of the spouse's death, or whether there is a long-lasting effect from the loss of social support.

**145. Tennant, F.S.; Detels, R.; and Clark, V. Some childhood antecedents of drug and alcohol abuse.** *American Journal of Epidemiology* **102:377-384, 1975.**

**Problem**

To compare the reported occurrences of various childhood activities, events, and behaviors among drug and alcohol abusers and nonusers.

**Methodology**

*Cross-sectional study.* A questionnaire on childhood antecedents and drug and alcohol use was completed anonymously by 5,044 U.S. Army soldiers. Race and marital status of parents (married or separated/divorced) were controlled for in the analysis. Because of the large size of the sample, only a 20 percent difference between groups for any variable was considered clinically significant.

**Results**

There were no childhood antecedents that showed a 20 percent difference between the alcohol nonusers and abusers. However, 30 percent of the sample did not complete the alcohol question. The illegal drug nonusers were more likely to report (20 percent difference) childhood spanking, church attendance, first alcoholic drink after 15, and "happy" parental marriages. These differences remained clinically significant when race and marital status of parents were controlled for.

**Comments**

The major strength of this study is the use of a large nonpatient population. Most similar studies are biased by the use of drug abusers already in treatment. Weaknesses of the study include retrospective recall biases; noninclusion of females; poor response rates to some of the questions, especially about alcohol use; and failure to control for social class. The characteristics of perceived family life are quite crude, so that it is difficult to determine whether these results support any of the hypotheses regarding family interactions in drug abuse.

**146. Vaillant, G.E. A 12 year follow-up of New York narcotic addicts.** *Archives of General Psychiatry* **15:599-609, 1966*a*.**

**Problem**

To describe the social and psychiatric characteristics of narcotic addicts and their relationship to the course of their illness.

**Methodology**

*Prospective cohort study.* Fifty black and fifty white men admitted to a public health hospital for drug addiction during a 3-month period were evaluated initially and followed for 12 years. Sociodemographic data, past

and family history, and medical assessment were obtained initially; 94 percent of the patients were followed up for at least 10 years.

**Results**

The majority of the addicts were first generation New Yorkers, more than twice what would be predicted from census data. There was a significant preponderance of youngest children in the sample, and 34 percent of the charts made mention of maternal overprotection. Of the addicts, 72 percent lived with their mothers on admission (average age=22) and 47 percent lived with a female relative after the age of 30; 52 percent of the addicts came from homes broken by death or by permanent separation.

**Comments**

This study primarily describes the characteristics of 100 addicts at the time they entered the hospital. Without a control group, the findings can only generate hypotheses about addiction. Unfortunately, no attempt was made to correlate initial psychosocial data (except ethnic background) with outcome. Such an analysis of this cohort would have offered some insight into the effect of psychosocial factors on the course of the disorder.

**147. Vaillant, G.E. Parent-child cultural disparity and drug addiction.** *Journal of Nervous and Mental Disease* **142:534-539, 1966*b*.**

**Problem**

To compare the country of birth of hospitalized New York addicts with nonaddict New Yorkers of similar age, sex, and ethnic origins.

**Methodology**

*Cross-sectional study.* This study grouped 187 non-Puerto-Rican whites, 130 Puerto Rican, and 171 black addicts according to the birthplaces of themselves and their parents. They were classified as immigrant, first generation, or second or more generation. The movement of blacks from the southern United States to New York City was considered an "immigration" for analysis. The percent of the New York population in each of these categories was determined directly or estimated.

**Results**

The percentage of immigrants among the addicts was significantly less than among the New York City population. The percentage of first generation immigrants among the black and Puerto Rican addicts was significantly greater than the New York City population for blacks and Puerto Ricans. White addicts born in New York were significantly more likely to have a foreign-born parent than were the census controls.

**Comments**

The use of census data for comparisons is very hazardous, as one is unable to control for potential confounding variables. For instance, lower socioeconomic class is often a result of immigrant or first generation status and may account for the increase in drug addiction.

**148. Vaillant, G.E.; Clark, W.; Cyrus, C.; Milofsky, E.S.; Kopp, J.; Wulsin, V.W.; and Mogielnicki, N.P. Prospective study of alcoholism: Eight year follow up.** *American Journal of Medicine* **75:455-463, 1983.**

**Problem**

To assess which psychosocial factors were correlated with sustained abstinence and good psychosocial outcome at 8-year followup.

**Methodology**

*Prospective cohort study.* A sample of 106 alcoholic patients were assessed at the time of their first admission to an inpatient alcohol treatment facility and were reassessed every 18 months for 8 years. Psychosocial adjustment over the 2 years prior to admission, physiological dependence, and sociodemographic variables were recorded initially. Drinking status and psychosocial adjustment were assessed by interview at the 8-year followup. Six patients were lost to followup.

**Results**

"Stable" premorbid psychosocial adjustment, employment, and lack of history of incarceration were all correlated with stable remission over the 8-year period. Living with spouse, lack of physiological dependence, education, and age were not associated with outcome.

**Comments**

In this study, living with spouse at the time of admission was not correlated with abstinence, but living with spouse at the time of followup was. This discrepancy suggests that abstinence led to more patients living with their spouses and demonstrates the hazards of interpreting cross-sectional data and the need for prospective studies to examine the influence of the family on the course of alcoholism.

**149. Vaughn, C.E., and Leff, J.P. The influence of family and social factors on the course of psychiatric illness: A comparison of schizophrenic and depressed neurotic patients.** *British Journal of Psychiatry* **129:125-137, 1976.** (See also Leff and Vaughn 1981.)

**Problem**

To replicate the study by Brown et al. (1972), showing the predictive ability of an index of expressed emotion (EE) by relatives on subsequent relapse of schizophrenic patients, and to compare them with depressed patients.

**Methodology**

*Prospective cohort study.* Thirty-seven schizophrenic and 30 depressed patients and their families were assessed at the time of hospital admission and followed for 9 months. Some of the schizophrenics were followed for 2 years (Leff and Vaughn 1981). The research design was nearly identical to Brown's (see Brown et al. 1972) with the same assessment scale of EE used.

**Results**

In the schizophrenic patients the relationships between EE, medication use, and contact with the family were very similar to the results of Brown et al.; 48 percent of the patients from high-EE homes relapsed, compared to 6 percent of the low-EE group. Medication use and fewer than 35 hours of contact with the family each week protected the patients from high-EE homes from relapse. These factors were independent of previous level of functioning or severity of illness. The patients who did not relapse were followed up at 2 years, and their EE scores continued to predict relapse. However, the protective effect of medication use was no longer evident for the high-EE group, but it emerged as being protective for the low-EE group.

In the depressed patients, only the number of critical comments by relatives was associated with relapse. The other components of EE (hostility and emotional overinvolvement) were not significant. These patients appeared to be much more susceptible to critical comments. Of patients with families who were scored for two or more critical comments, 67 percent relapsed, compared to 22 percent of those with criticism scores of less than two. (The threshold for critical comments for the schizophrenics was 7.) The relatives' criticism score remained significant when controlling for other factors.

**Comments**

This replication of Brown et al.'s study, which obtained very similar results for schizophrenics, strengthens the reliability of the findings. The addition of a group of depressed patients yielded unexpected findings. The study suggests that the effects of EE may not be specific to schizophrenia, while depressed patients are sensitive to critical comments only. These results for depressed patients need further investigation.

**150. Vaughn, C.E.; Snyder, K.S.; Jones, S.; Freeman, W.B.; and Falloon, I.R.H. Family factors in schizophrenia relapse: Replication in California of British research on expressed emotion.** *Archives of General Psychiatry* **41:1169-1177, 1984.**

**Problem**

To cross culturally replicate the British studies (Brown et al. 1972; Vaughn and Leff 1976) on the impact of families' expressed emotion (EE) on the course of schizophrenia.

**Methodology**

*Prospective cohort study.* Sixty-nine white schizophrenics living with relatives or a spouse were studied at the time of hospital admission and followed for 9 months after discharge. The research design was very similar to the British studies (see Brown et al. 1972) except for a few refinements. More detailed evaluations were made of the initial severity of disease and symptoms at the time of discharge and relapse.

**Results**

The California families scored much higher on the EE index, particularly on the number of critical remarks, than the British families. Of the patients, 56 percent with relatives with high-EE scores relapsed, com-

pared to 17 percent of the patients with relatives with low-EE scores. This difference was greater (60 percent versus 9 percent) in a subgroup of patients who lived at home. This association was independent of other factors. In particular, there was no correlation between the initial severity of symptoms and EE scores. Medication use was associated with fewer relapses only in the high-EE group with subjects who had less than 35 hours of contact with relatives each week.

**Comments**

This study not only replicated the findings from the British study cross culturally but used better measures of the independent and dependent variables. These studies show that the family environment is the most predictive variable for relapse and that antipsychotic medication may blunt the adverse effect of high EE. Medication may not be effective when the patients have extended contact with their high-EE relatives.

**151. Webb, N.L.; Pratt, T.C.; Linn, M.W.; and Carmichael, J.S. Focus on the family as a factor in differential treatment outcome.** *International Journal of the Addictions* **13:783-795, 1978.**

**Problem**

To assess the relationship between prehospital living arrangements and improvement in symptoms and functioning from an inpatient treatment program.

**Methodology**

*Prospective cohort study.* Nineteen male alcoholics and 17 drug abusers were interviewed on entry into an inpatient substance abuse unit. In addition to obtaining background social information, each subject was rated on the Social Dysfunction Rating Scale (SDRS) and the Hopkins Symptoms Distress Checklist (HSDC). (The reliability and validity of each scale have been documented.) Inpatient treatment lasted from 4 to 6 weeks, and each subject was reassessed in a similar manner within 3 days of discharge from the unit. Fifty-six percent of those admitted to the study (N=64) dropped out of the study and were excluded from analysis. Age, type of substance abuse, and length of treatment were controlled for in a multivariate analysis.

**Results**

Those patients who had been living alone or with nonrelatives were less symptomatic and dysfunctional than those living with wives or parents, but the difference was not significant. However, those who had lived alone or with nonrelatives had significantly greater improvement in symptoms and function than either of the other groups. The only difference between the groups on posttreatment analysis was for somatization (living with nonrelatives/alone and conjugal score lower than living with parents). There was no significant interaction between the prehospital setting and type of substance abuse.

**Comments**

The finding of this study, that those not living with family benefit more from inpatient treatment, had not been predicted, and its meaning is unclear. Since there was very little difference between the outcomes in the three groups, the simplest explanation is that those with more severe symptoms and dysfunction have more to benefit from the treatment.

**152. Weissman, M.M.; Prusoff, B.A.; Gammon, G.D.; Merikangas, K.R.; Leckman, J.F.; and Kidd, K.K. Psychopathology in the children (ages 6-18) of depressed and normal parents.** ***Journal of the American Academy of Child Psychiatry*** **23:78-84, 1984.**

**Problem**

To determine the prevalence of psychopathology in children of depressed compared with nondepressed parents.

**Methodology**

*Cross-sectional study.* A group of 194 children of parents with severe major depression requiring hospitalization (N=44), mild major depression (not requiring hospitalization) (N=89), and without psychiatric illness (community controls) (N=82) were assessed from interviews with the child's parent. A semistructured interview was used to determine symptoms of psychopathology, behavioral problems, and psychological treatment of all children 6 to 18 years old. These interviews were blindly reviewed by a psychiatrist who made a "best-estimate DSM-III diagnosis" of each child.

**Results**

The children of parents with depression had a higher prevalence of psychological symptoms, treatment of emotional problems, school problems, suicidal behavior, and DSM-III diagnoses (especially depression). The risk of depression increased if both parents had depression, with early onset of parent's depression, increased number of relatives with depression, or other psychiatric illness, and if the parents were no longer married.

**Comments**

The major limitation of this study, acknowledged by the authors, is the use of the depressed parent's report of his or her child, which is likely to be distorted by the depression. Direct interviews of the children are underway and should be more convincing. However, the relative impact of genetic factors and family environment cannot be ascertained in this study.

**153. White, K.; Kolman, M.L.; Wexler, P.; Polin, G.; and Winter, R.J. Unstable diabetes and unstable families: A psychosocial evaluation of diabetic children with recurrent ketoacidosis.** *Pediatrics* **73:749-755, 1984.**

**Problem**

To determine what psychosocial factors in the patient and family are associated with labile diabetic control.

**Methodology**

*Retrospective cohort study.* Psychosocial summaries in the charts of 30 children with poorly controlled diabetes (2 or more hospitalizations in the previous year) covering an 8-year period were examined. All subjects had been interviewed by a social worker or psychologist either because of a referral for suspected psychosocial problems or as part of a routine evaluation at the time of admission to the hospital. Psychosocial factors were abstracted from these evaluations and followup assessments.

**Results**

The majority of the families studied were found to have numerous "dysfunctional" psychosocial factors, including absent father, poor living conditions, inadequate parental functioning, chronic family conflict, and

lack of involvement with the diabetes. Most of the diabetic children were judged to have behavioral and personality problems. Psychosocial interventions were made with each family, often involving a home visit, and a subset (N=17) of the patients appeared to reduce their hospitalization rate.

**Comments**

Serious methodological limitations of this study include selection bias, reporting bias, and lack of comparison groups. Since a previous psychosocial evaluation was a prerequisite for inclusion in the study and a major reason for such an evaluation was suspected psychosocial problems, families with such problems were likely overrepresented in the group. It is not clear how representative of families of unstable diabetics this group is. The psychosocial evaluations were done to look for psychosocial factors that might contribute to poor diabetic control, and thus they are likely to be biased, especially when abstracted in a chart review. Most importantly, the absence of a comparison group, such as families with well-controlled diabetics or with other chronic diseases from the same socioeconomic background, make these findings difficult to interpret. One suspects that many of the findings may be due to the presumed low socioeconomic status of these families. This study must be considered a series of case reports of unstable diabetics and their families.

**154. Wilson, G.T., and Brownell, K. Behavior therapy for obesity: Including family members in the treatment process.** *Behavioral Therapy* **9:943-945, 1978.**

**Problem**

To determine the effect of including a close family member in a behavioral treatment program for obesity.

**Methodology**

*Randomized controlled trial.* Thirty-two obese women participating in an 8-week behavioral self-control group therapy program to reduce weight were randomly assigned to having a family member present or absent. In the experimental group, the same family member was required to attend, and in all but three cases, it was the husband who attended. The family members were instructed in the principles of the behavioral weight reduction program and encouraged to stop any negative reinforcements (e.g., criticism), while increasing positive reinforcements (e.g.,

encouragement and support). The family member's behavior was not assessed. Subjects were followed up at 3 and 6 months after treatment.

**Results**

There were no significant differences in weight loss between the family present and family absent groups at the end of treatment or at the 3- and 6-month followups.

**155. Wolcott, D.L.; Wellisch, D.K.; Robertson, C.R.; and Arthur, R.J. Serum gastrin and the family environment in duodenal ulcer disease.** *Psychosomatic Medicine* **43:501-507, 1981.**

**Problem**

To examine the relationship between psychosocial and physiological variables and the severity of duodenal ulcer disease (DUD).

**Methodology**

*Cross-sectional study.* Thirty-nine male patients with known DUD were assessed using five self-report instruments: a questionnaire about their ulcer symptoms, the Spielberger State/Trait Anxiety Inventory, the Zung Self-Rating Depression Scale (SDS), the Holmes and Rahe Schedule of Recent Events (SRE), and the Moos Family Environment Scale (FES). Physiological variables examined were serum pepsinogen, gastrin levels, and blood type. A DUD severity scale was derived from the frequency and severity of pain. Demographic variables were also examined.

**Results**

Gastrin levels correlated significantly with three subscales of the FES: independence, achievement orientation, and expressiveness. Together they accounted for 48 percent of the variance in gastrin levels. DUD severity score correlated only with the depression scale (SDS) and not with life events, anxiety, or family environment.

**Comments**

This study represents what is often called a "fishing expedition," in which multiple variables are examined without prior hypotheses about their relationships. When numerous correlations are measured, the probability that a significant relationship ($p<.05$) will be found by chance

increases, and most statisticians feel that a much lower *p*-value is required. In addition, the clinical significance of correlations or their relationship to DUD is unclear.

**156. Wolin, S.J.; Bennett, L.A.; and Noonan, D.L. Family rituals and the recurrence of alcoholism over generations.** *American Journal of Psychiatry* **136:589-593, 1979.**

**157. Wolin, S.J.; Bennett, L.A.; Noonan, D.L.; and Teitelbaum, M.A. Disruptive family rituals: A factor in the intergenerational transmission of alcoholism.** *Journal of Studies on Alcohol* **41:199-214, 1980.**

**Problem**

To determine the relationship between disruption of family rituals by a family member's drinking and the transmission of alcoholism into the next generation.

**Methodology**

*Cross-sectional study.* Twenty-five middle- and upper middle-class families with at least one alcoholic parent (Goodwin's criteria) were studied. Twelve of the families had no alcohol problems in their children (nontransmitters), seven had children who were heavy drinkers (intermediate transmitters), and six had children who were alcoholic or were married to alcoholics (transmitters). Structured interviews of the family members were conducted and focused on family rituals around dinner, holidays, evenings, weekends, vacations, and visitors. Transcripts of the interviews were coded for the presence of rituals and whether the rituals were altered by the parent's drinking. Each family was categorized as distinctive (no change in rituals), subsumptive (all rituals changed) or intermediate subsumptive (approximately half the rituals changed).

**Results**

Among the three categories of family transmission of alcoholism, there was no significant difference in socioeconomic status, age of parents or children, or characteristics of the parent's drinking. There was a non-significant ($p<.10$) correlation between alcohol transmission and disruption of family rituals. When the intermediate categories of families were eliminated, there was a significant ($p<.025$) relationship between alcoholism transmission and disruption of rituals. Five possible protective characteristics of the nontransmitter families were identified, the most

powerful of which appeared to be the direct confrontation of the alcoholic parent's drinking.

**Comments**

This report is the only study of family interactions affecting the development (versus the course) of alcoholism. The results suggest that how a family responds to an alcoholic member's behavior may influence whether the next generation develops alcoholism. However, with a cross-sectional study one cannot exclude the possibility that the presence of a second family member (in the next generation) with a drinking problem may have influenced the disruption of family rituals rather than vice versa. These findings need to be replicated in a prospective study.

**158. Wynne, L.C. Current concepts about schizophrenia and family relationships.** *Journal of Nervous and Mental Disease* **169:82-89, 1981.**

**Problem/Methodology**

The author reviews the concepts of communication deviance (CD) and expressed emotion (EE) and the studies that linked them to the etiology and course of schizophrenia. The most recent methods for directly measuring family communication patterns are discussed, as is the concept of causality. (58 references)

**Results**

CD is viewed as a dimension of interpersonal relationships, which is associated with schizophrenia, but not specific to it. Cross-sectional studies show a strong correlation between parental CD and schizophrenia. Preliminary results from the UCLA Family Project suggest that CD precedes the development of psychotic symptoms. The studies on EE demonstrate that the number of critical comments by relatives of schizophrenics and emotional overinvolvement are strongly associated with subsequent relapses. This higher rate of relapse is reduced when the patient is on medication or has less than 35 hours of contact with the relative each week. The extent to which the concepts of EE and CD overlap is not clear, and no study using both instruments with the same families is available.

**159. Yager, J. Family issues in the pathogenesis of anorexia nervosa.** *Psychosomatic Medicine* **44:43-59, 1982.**

**Problem/Methodology**

A review of the literature on the role of the family in the pathogenesis of anorexia nervosa (AN). The "typical" AN family is described and critiqued. Methodological problems in the family research on AN is discussed. Six areas of research are reviewed: (1) transmission of AN in families; (2) family stress response patterns; (3) characteristics of parents; (4) parent-child interactions; (5) family systems; and (6) relationship of family pathology to patient prognosis. (64 references)

**Results**

The typical AN family is described as being upper middle class, highly achievement oriented with excessive concern about external appearance especially slimness. Superficially, the parents appear to be healthy, but they have severe underlying conflict and depression and are overinvolved in their children's lives. The literature to support this profile is largely impressionistic and speculative. There is a wide spectrum of AN, and the symptoms appear to be multidetermined. AN appears to run in families, but studies have not yet begun to sort out genetic and family environmental influences. Some of the observed characteristics of AN families may be part of a stress response to having a starving child. Studies of parental characteristics have yielded inconsistent results, while research on parent-child interactions suggest overprotectiveness. Family systems theory offers a conceptual model for understanding AN, the most popular of which is Minuchin's model of psychosomatic families. However, these hypotheses have yet to be critically tested. Some studies suggest that more severe family pathology predicts poorer outcomes in AN. Adoption studies and prospective studies of children at risk are needed. More sophisticated, reliable, and valid family assessment techniques need to be developed and applied to AN.

**160. Young, M.A.; Benjamin, B.; and Wallis, C. The mortality of widowers.** *Lancet* **2:454-456, 1963**

See Parkes et al. 1969 for annotation.

**161. Zuckerman, D.M.; Kasl, S.V.; and Ostfeld, A.M. Psychosocial predictors of mortality among the elderly poor: The role of religion, well-being, and social contact.** *American Journal of Epidemiology* **119:410-423, 1984.**

**Problem**

To examine the relationships between religiousness, well-being, social supports, and subsequent mortality in the elderly poor.

**Methodology**

*Retrospective cohort study.* A sample of 400 elderly poor residents of New Haven, Connecticut, who were enrolled in a study on the health consequences of involuntary residential relocation were interviewed indepth and followed over 2 years. Psychosocial variables included religious beliefs, affective state (happiness, anger, anxiety, and life satisfaction), and social contacts (confidant, close friendship, and number of living children). Variables controlled for were age, sex, marital status, monthly income, educational attainment, and health status. A health status index was derived from responses to a detailed health history that correlated with subsequent mortality.

**Results**

Religiousness and happiness were associated with a reduced risk of mortality in elderly in poor health. The presence of living offspring was associated with survival in the entire cohort regardless of health status, with an odds ratio (approximates relative risk) of 1.72. There was no association between marital status and mortality in this population.

**Comments**

As in the Durham County Aging Study (Blazer 1982), having living children was protective against subsequent mortality, being married was not. These finding suggest that important components of social networks change with aging.

# Author Index to Annotations[1]



[1]By study number.

# Subject Index to Annotations[1]



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