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NONORGANIC FAILURE TO THRIVE INFANTS: A PILOT STUDY OF MOTHERS' PERSONALITIES, EARLY PERCEPTIONS AND LOSS EXPERIENCES

By

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ABSTRACT

NONORGANIC FAILURE TO THRIVE INFANTS: A PILOT STUDY OF MOTHERS' PERSONALITIES, EARLY PERCEPTIONS AND LOSS EXPERIENCES

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A subject of continuing professional and scholarly interest has been the relationship between mothers and their infants.

One phenomenon that is gaining increased attention is a complex syndrome characterized by growth failure called failure to thrive, (FTT). Failure to thrive (FTT) in infants is caused by a variety of organic and nonorganic factors. For the last ten years, FTT has gained increased attention from both public health and mental health professionals.

The need for examining in a systematic fashion the personality variables and other related characteristics of mothers of FTT infants has been an area demanding researchers attention. Notably lacking are studies which have empirically examined personality variables in mothers of FTT infants, however, there is a growing body of clinical literature in support of a rationale favoring psychiatric diagnosis of mothers of FTT infants.

The purpose of this research study was to: (1) explore personality characteristics of mothers of infants who fail to thrive; (2) investigate the effect of loss experience as they relate to mothers of infants

who fail to thrive; and (3) examine retrospective reports of early parental behavior of mothers of infants who fail to thrive.

Fifty mothers participated in this research study. Twenty-five mothers, identified by the pediatrician's diagnosis of nonorganic failure to thrive, were matched with a control group of mothers. Infants identified for inclusion in the study for both groups were between the ages of six months to 20 months of age. The sample population was taken from outpatient clinic populations in two cities in Michigan.

Discriminate analysis were used to statistically determine significant discrimination between mothers of infants who fail to thrive and the control group.

The results, concluded that four MMPI scales significantly discriminated between the two groups of mothers. Those scales were F, Paranoia, Social Introversion and Masculinity and Feminity. In addition, mothers of FTT infants exhibited significantly more character disturbances. The Children's Reports for Parental Behavior Inventory (CRPB) items significantly discriminated between the two groups. Further, there was a 98 percent correct classification of group membership on the CRPB items.

The Response to Loss Scale (RLS) results indicated significant discrimination of items and further revealed that mothers of infants who fail to thrive handle losses and uncomfortable feelings similarly to thier infants.

Dedicated to my Beloved Grandmothers

The Late Christine Inez Roberts

and

Eva Willis Graham

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CHAPTER I

INTRODUCTION

Statement of the Problem

A subject of expanding professional and scholarly interest has been the relationship between mothers and infants. Pediatricians, developmental psychologists, and child psychiatrists have maintained that the limited number of experimental studies relating to mother-infant interaction have failed to pinpoint causal relationships. Recent attention has focused on the emotional and environmental aspects of this interaction, and particularly the attachment of infants to their mothers in the early years of life (Bowlby, 1969; Ainsworth, 1969; Feldman and Ingham, 1975; Ainsworth, 1973).

One phenomenon that is gaining increased attention is a complex pediatric syndrome known as a growth failure, called Failure to Thrive (FTT). Failure to Thrive in infants is caused by a variety of organic and nonorganic factors. Diagnosis often requires the infant to be hospitalized to distinguish organic from nonorganic factors.

Rosenn, Loeb, and Jura (1980) conducted a study aimed at developing more precise methods for distinguishing hospitalized organic from nonorganic FTT in infants. The researchers administered a seven-point approach-withdrawal scale to monitor daily social interactions between examiner and infant. Their findings were that a behavioral pattern systematically and statistically distinguished nonorganic FTT infants from organic FTT infants and the control patients. Nonorganic FTT

infants preferred distant social encounters and inanimate objects, whereas organic FTT infants and medically ill control patients responded to close personal interaction. This may suggest that the interaction between the significant care giver, usually the mother, and the FTT infants has been impaired.

Theoretical tenets on the nonorganic FTT syndrome in infants recently have been developed from attachment and bonding theories, directing attention to the mothers of these infants. The early relationship between an infant and its mother has been reviewed with respect to object relations theory, social learning theories of dependency (and attachment), and an ethologically oriented theory of attachment (Ainsworth, 1969). These theories and others will be examined later in this chapter. Previous research has shown that the failure of the mother to form an attachment to her infant stems from many factors and affects both the physical and emotional development of the infant. Failure to thrive in infancy may be one effect of this lack of attachment on the physical development of infants.

Fraiberg, Adelson, and Shapiro (1980) have attributed the impaired mother-infant relationship to "ghosts in the nursery," that is, to the mother's past experiences and her parents' behavior. The researchers further explain how the lack of a nurturing and satisfying relationship in the mother's childhood leads to an inability to nurture her infant. Cupali, Hallock, and Barnes (1980) have characterized mothers of FTT infants as growing up in nonsupportive homes and nonnurturing environments. These mothers tended to be lonely, isolated, and unable to utilize family support. They often had immature and emotional lives, tended to be passive, and viewed life as a series of events acting upon them.

Although there appears to be some evidence of maternal causes, nonorganic factors in FTT have not been systematically explored or conclusively linked to specific maternal factors. The literature abounds with methodological difficulties which have led to equivocal results. Research has consisted mainly of case studies, and shotgun approaches have been used to find possible dependent variables to correlate FTT with maternal and other environmental factors. These dependent variables include personality disorders, social isolation, and low education in mothers of FTT infants. Koel (1969) and other physicians have long concluded that therapeutic success cannot be measured in terms of weight gain in FTT alone. They further assert that good pediatric care cannot supplant parental feelings of inadequacy.

Researchers such as Kotelchuck and Newberger (1983) have begun to move toward familial investigation of nonorganic FTT in infants. However, this type of research needs to extend beyond immediate experiences to past familial investigation, and to the personality of mothers of FTT infants. This is the direction in which this study will focus.

Need for the Study

While the issues of attachment and bonding include the psychological attributes of mothers and environmental factors independent of the infant, one cannot rule out the inherited, constitutional attributes of infants, independent of their mothers. One also must be aware of the nutritional factors associated with FTT (Whitten, Pettit, Fischoff, 1969; Talbot et al., 1947). The constitutional and nutritional aspects of FTT will not be directly examined in this study.

Kotelchuck and Newberger (1983) believe there is a need for systematic research into the personality variables of mothers of FTT infants. To date, few studies have directly examined these variables, although a growing body of anecdotal literature points to the psychiatric diagnosis of mothers of FTT infants (Fischoff, Whitten, and Pettit). However, specific personality variables have not been examined in a systematic and/or large-scale manner.

Furthermore, the basic theoretical framework has focused on the mother's interaction with her infant; we have little knowledge of the interaction between the mother of an FTT infant and her mother. This relationship may be critical, since one hypothesis is that FTT is related to inappropriate attachment through generations. A study by Rank and Rochlin (1948) has indicated that histories of the infants' mothers' childhood revealed developmental conflicts similar to those between the patients and their mothers. Case material was presented. The researchers concluded that similar defenses against anxiety may be used in several family generations.

Another hypothesis which often appears in the literature is that mothers of FTT infants are depressed and suffer from increased affective disturbances. Risk factors that are associated with increased affective disturbances in mothers of FTT infants are both innate and environmental. Reid and Morrison (1983) summarized the literature on risk factors in children of depressed parents. They suggest that both cognitive and emotional development of children of depressed parents are higher risk than normal if one considers their vulnerability to "mental impoverishment" -- for parents' social and emotional

problems stemming from earlier poverty of affectual experience and attachment difficulties. It is difficult to determine whether the mothers of FTT infants feel this way because of a sick infant or because of characterological depression. Kotelchuck and Newberger (1983) found that a distinguishing characteristic of families with FTT infants was the presence of a sickly child, and it is well known among psychologists and psychiatrists that physically sick children affect mother-infant interaction.

If the mother-infant relationship if viewed on a continuum, with attachment assumed at birth and separation-individuation and loss occurring throughout the growth process, it may be helpful to visualize the reverse. The opportunity for attachment at birth, due to a sick child, will affect separation-individuation and later attachments. This concept is important and useful with respect to mothers of FTT infants, and it is explored in this research.

Organic vs. Nonorganic Failure to Thrive

Failure to thrive traditionally is divided into organic and nonorganic categories (Hannaway, 1970). However, Homer and Ludwig (1981) suggest a third possible category, mixed (organic and nonorganic). In their study 26 percent of the FTT cases were considered mixed.

Failure to thrive is not considered a diagnosis in the true sense but rather a descriptive program of medical examinations to determine cause (English, 1978). Failure to thrive becomes the hospital criteria impression when the pediatrician finds a child (1) who has fallen two standard deviations below the normal weight and height, (2) who was born a full term baby, and (3) who exhibits developmental lags. These factors may be observed in organic and nonorganic FTT. Organic FTT infants exhibit organic etiology diagnosed by the time the infant is discharged from the hospital, making FTT secondary to any organic factors at the time of discharge. The organic factors include, but are not limited to, chronic diarrhea, chronic urinary tract infection, intrauterine growth retardation, cystic fibrosis, and liver disease. The literature also points to malnutrition as a product of retardation in physical growth seen in FTT infants (Bhat et al., 1973; Krieger and Whitten, 1969). Before we consider the characteristics of organic and nonorganic FTT it is important to understand the historical origins.

Historical Origins

The history of FTT began with a study by Frederick II in the thirteenth century. He was interested in human language and attempted to isolate some infants with a nurse on an island so that he might later examine the results. The nurse was instructed not to communicate with

the infants, and all of them died. Although the research regarding language failed, the experiment influenced other areas, such as attachment and language withheld.

In 1915 Chapin studied the high mortality of children less than twelve months old in hospitals. In discussing acutely ill children who were placed in asylums, Chapin stated that "unless the infant is quickly discharged after acute illness, there is a slow progressive loss of weight."

Emmett Holt first labelled nonorganic failure to thrive, but the association of emotional deprivation and inadequate stimulation with respect to growth was identified by Rene Spitz (1945) in his study on "hospitalism." More recent associations have been made by Wayne Dennis in Children of the Creche (1973). Both Spitz and Dennis emphasized the impact of institutions; the lack of sensory and social stimulation on the growth and development of these infants.

Bakwin (1949) studied emotional deprivation in hospitalized infants who were isolated for infection control. Bakwin described the clinical picture as follows:

> The outstanding features are listlessness, emaciation and pallor, relative immobility, quietness, unresponsiveness to stimulation like a smile or a coo, indifferent appetite, failure to gain weight properly despite the ingestion of diets which, in the home, are entirely adequate, frequent stools, poor sleep, and appearance of unhappiness, proneness to fatal episodes, absence of sucking habits.
>
> The hospital infant is pale...facial expression is unhappy...muscle tone is poor...there is no alternation in the deep reflexes...infant shows no interest in environment, lying quietly in bed, rarely crying and moving very little.

Brennemann (1932) stated that it was Czerny who found monotony, or staring at blank walls and ceiling, an important aspect in hospitalized infants. The absence of the mother ranked high as the primary cause. As suggested above, Chapin discharged infants as soon as possible, his rationale being that hospitals were "temporary holdups," and the children should be sent out to recuperate after their illness. It is interesting that FTT infants who are hospitalized do better in the hospital environment than at home.

Talbut (1947) applied the concept of FTT in hospitals to non-organic FTT occurring in homes. He described infants with short stature, but his insight was linked to their poor growth resulting from nutritional deprivation.

The first study describing developmental lags in children at home, secondary to FTT, was that of Coleman and Provence (1957), who attributed the failure to grow to emotional deprivation. However, they also attributed the developmental lags to the mother's state of depression, believed to stem from her withdrawal from her role as primary stimulator to the child.

Powell et al. (1967) described a group of children 3-11 years of age as suffering from "deprivation dwarfism," a combination of short stature, abnormal home situation, and bizarre dietary history. These FTT children, on admission to a hospital, did not exhibit hypothyroidism, but they did have abnormalities of cortisol secretion and growth hormones, that is, urinary 17-hydroxycorticosteroids were low. Following hospitalization, all of the children had growth periods characterized by normal hydroxycorticosteroids. The researchers speculate that "emotional disturbance in these children may have had

an adverse effect upon the release of growth hormones in the nervous systems." By the late 1960s, FTT research began to focus on environmental factors.

Organic Causes - Determinants of Growth

Growth retardation is often the primary indicator of both organic and nonorganic FTT. Growth is considered a dynamic process, and a number of accurate measures are used to assess it. In addition to the obvious, the proportion of height to weight to head circumference is often a reliable measure. Routinely plotting these measurements on a chart (Appendix A) helps to confirm that the child is receiving adequate nutrition and growing normally. Although birth weight depends on maternal size, some children are more similar to one parent than the other in adult size. Taking into account these inherent growth characteristics, organic FTT becomes complicated by such additional factors as deficient food or malabsorption, endocrine problems, and deficient growth potential of bones.

Deficient food (malnutrition), as we know it, probably occurs most frequently in the lower socioeconomic classes. It is related to growth failure through the basal metabolic rate (BMR). Krieger and Whitten (1969) studied infants with growth problems and found that malnutrition increased post-prandial heat production during the growth phase. The significant increase showed a high correlation to the low rate of weight gain in food deficient infants.

Bhat et al. (1979) studied 45 children with varying degrees of growth failure due to severe protein calorie malnutrition (PCM). The nutritional assessment was evaluated by comparing heights and weights

in percentages. The study revealed a correlation between intelligence and height and weight, suggesting that growth failure which is predominently nutritional in children of low socioeconomic groups affects physical growth, brain growth, and mental development. The findings about nitrogen balance, weight gain, and post-prandial excess heat production, as reported in the Kohler and Good (1969) study, indicate that malnutrition is basic to the systematic management of FTT infants. The malnourished infant's weight is reduced out of proportion to its height reduction and normal head circumference. Compared with the malnourished infant, the short-stature infant will have a height reduction in proportion to or more than its weight reduction and a large head circumference.

In recent literature FTT is characterized as a separation disorder linked to food refusal by the infant (Chatoor and Edgan, 1983). Psychiatrists and psychologists often relate nutritional factors in FTT to feeding disorders (Pollitt and Eichler, 1976).

Cupoli, Hallock, and Barness (1980) report that placental factors influence the growth process in infants. They further assert that overgrowth of the infant in proportion to the placenta will cause starvation, or acute loss of fetal weight.

In addition, growth may be delayed in infants with hypothyroidism. The mechanism whereby infants with uraemia, chronic heart failure, and liver disease fail to grow well appears complex. Most of the children have a poor appetite, which is likely to decrease food intake.

Infants with bone disease such as achondioplasia experience abnormal growth as well as other systemic disorders. Girls with

Turner's syndrome, a form of gonadal dysgenes marked by short stature, may show no gross abnormalities on physical examination, and leucocyte chromosome studies are needed to assess it further.

Nonorganic Causes

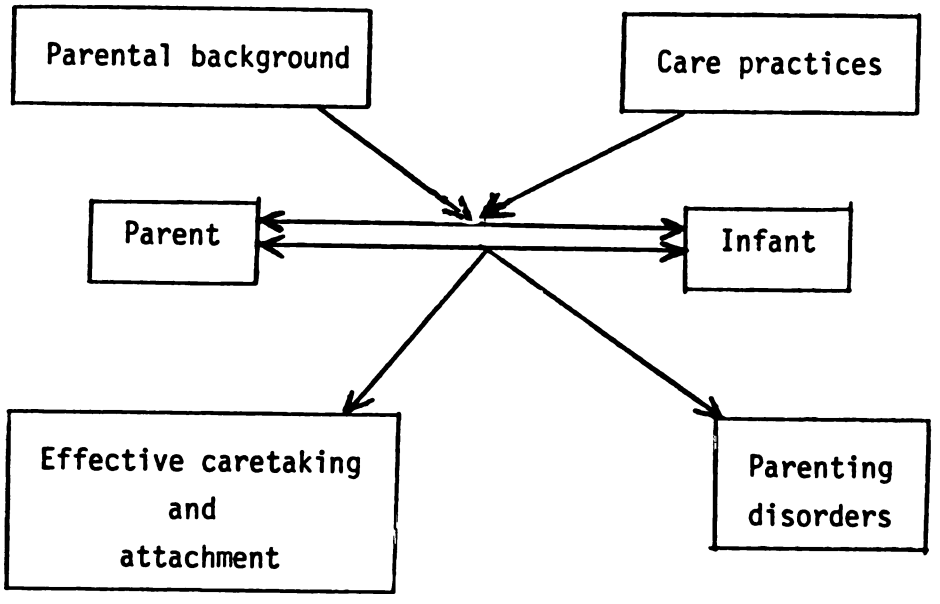
Nonorganic causes of FTT in infants have been found to be associated with maternal characteristics, family factors, and the nature of interactions between the parent and infant.

The Mother

Most frequently, the mothers of FTT infants grew up in nonsupportive, nonnurturing homes and continue to be isolated and unable to utilize family support. Research has found that these mothers are passive, depressed, and see life as a string of events acting on them. The mother's feelings of inadequacy and quietness make it difficult for her to support and nurture her child. The relationship between the mother and her FTT infant is poor, and she receives little enjoyment from the infant. The child's illness is perceived by the mother more as a burden on her than as a danger to the child.

Mothers of FTT infants also may have character disorders and psychiatric illnesses. Because the mother is assumed to be the primary care giver in the relationship, it is on her that the proposed project focuses. Klaus and Kennell (1982) have diagrammed the major factors relating to maternal behavior and their consequences (see Figure 1).

Figure 1. Diagram of the major influences on parent-infant attachment and the resulting outcomes.



Source: Klaus and Kennell, 1982 (second edition)

The Family

The families of FTT infants are overwhelmed by social, financial, and/or marital problems. Parental education tends to be low.

Evans, Reinhart, and Succop (1970) reviewed the social histories of families with FTT children due to nonorganic factors and classed them in three categories. The first group had the following characteristics: good living conditions, adequate physical care of the child, mother's affect was on depression with acute onset, mother-child relationship was impaired, mother perceived the child as retarded and feared its early death, and the mother had severe object loss within

four months of child's hospitalization. The follow-up for this group indicated a good prognosis.

The second group was characterized by a more chronic form of depression among all family members: deprived living conditions; poor physical care of the child; an extremely depressed mother; and a chronic sense of loss on the part of the mother. The prognosis for this group was guarded.

The third group had characteristics not unlike an abusive situation: good living conditions, neglected physical care of the infant, mother's affect angry and hostile, poor mother-infant relationship, and a mother with a chronic sense of loss. A poor prognosis was indicated.

Leonard et al. (1966) discussed FTT as "a family problem." Their investigation revealed multiple stresses in addition to the diminishing ability of the parents to meet increasing responsibilities. The mother was singled out as having no support from her husband or a significant other, lacking in self-esteem as a mother, and unable to assess her infant's needs.

In conclusion, although family characteristics appear to influence nonorganic FTT, many studies have focused on the mother. Research has not determined the importance of the FTT infant's sibling position. Further more, specific mechanisms that translate emotional deprivation, depression, poor maternal-child interaction, and family stressors into failure to thrive are not yet known. This dissertation will explore some of the factors contributing to FTT in infants, with the primary focus on the mother and her experiences.

Parent-Infant Interactions

Failure to thrive has been viewed by some researchers as an interactional disorder (Pollitt, 1975; Harper and Richmond, 1979; Frailberg, 1980; Frailberg et al., 1975). The infant's role,as well as the parent's, has contributed to this dyadic dysfunction in FTT. Factors that were identified included less verbalization, less positive affect, meeting the child's needs less often, and punishment demonstrated. The outcome of such interaction between the parent and infant is a relative impoverishment or neglect of the child's affective needs.

Recent studies have suggested that an interactional disorder is related to an attachment disorder in the FTT dyads (Gordon and Jameson, 1979; Rasenn et al., 1980).

The focus of this research, however, is not on the interactional aspect but on the mother's personality dynamic, which is one factor contributing to the nature of this interaction.

Theoretical Review of the Infant-Mother Relationship

This research is not based on one particular theory, but in an attempt to provide a theoretical framework, some existing concepts about the mother-infant relationship will be examined. Two terms frequently used are attachment and bonding. According to Ralston and O'Connor (1983), attachment is viewed as the infant's emotional tie to the mother and is maintained in behaviors initiated toward her. Bonding, in comparison, is the affectional relationship of the mother toward the infant. Bonding is initiated prenatally and strengthened throughout life. Some studies point to attachment as a process over time and bonding as a specific period following the

infant's birth. Definitions continue to remain unclear and often are used simultaneously.

Five theories concerning the psychological/social development of mother-infant relationships will be briefly described: biological/instinctual, psychoanalytic, social learning, ethological, and feminist. No one of these is adequate,but together they create a gestalt enabling a better understanding of the mother-infant relationship.

Biological/Instinctual Perspective

The theory underlying an instinctual basis for mother-infant attachment is that the basic characteristics are present at birth. In most animal species there is a natural instinct for the female who gives birth to the offspring to protect, feed, and guide him/her, and this is true of the human species. Svejda et al. (1980) have noted the theoretical tendency in the last ten years to regard the human mother/infant attachment as influenced by biological factors acquired during a limited time after the infant's birth. Most authors refer to this as "bonding" (Klaus and Kennell, 1976).

Through animal studies, it has been observed that species - specific maternal-infant bonds develop only if the infant is in contact with the mother immediately after birth. In nonhuman mammalian species, immediate separation after birth, even for brief periods, may lead to abnormal mothering behavior; the mother may neglect her infant, butt her own infant away, or indiscriminately feed her own with other infants. In this regard, Robson and Moss (1970) define maternal

attachment as the "extent to which a mother feels that her infant occupies an essential position in her life."

Biological/instinctual research is heavily oriented toward the study of animals, most especially the behavior of primates. Harlow's (1962) work with rhesus monkeys raised in isolation has often been cited as support for the critical nature of the mother-infant relationship. He concluded that infant monkeys raised without mothers exhibited abnormal behavior.

Lewis, McKinney, Young, and Kraemec (1976) studied nineteen rhesus monkeys between the ages of 5.9 and 8.5 months which were separated from their mothers. Of the five different studies, two revealed findings paralleling Bowlby's (1969) protest-despair response to maternal separation. Results across all five were sufficient to link maternal separation to predictable animal models for neurobiologic and rehabilitative studies. Aside from the methodological difficulties associated with animal studies, there are serious problems in generalizing from animal to human behavior, including the question of which animals, if any, should be used as a basis for the generalization.

In the case of goats, learning to recognize and accept infants has been called "maternal imprinting" (Klopfer et al., 1964; Klopfer and Gamble, 1966; Klopfer and Klopfer, 1968). Early studies with goats and sheep reveal that infants separated from their mothers after birth for long periods (45 minutes) were afterward rejected (butted away). Olfactory imprinting occurs in mother sheep and goats, and generalization in this area is weak because humans often rely on spoken rather than olfactory communication. Above all, it is clear that the biological factors in mother-infant attachment for any species need to be assessed empirically.

Bowlby (1969) reviewed attachment behavior in rhesus monkeys, baboons, chimpanzees, and gorillas. In brief, he concluded there is considerable variation between different animals of the same species, accounted for mostly by differences in habitat but sometimes the result of an innovation started by an animal in one group and passed down by social tradition. If this is the case, the instinctual perspective may be flawed.

Psychoanalytic Perspective (Object Relations)

Closely related to the instinctual perspective is the psychoanalytic view of object relations theory, "object" being the agent through which the instinctual aim is achieved, typically a person. Psychologists and psychiatrists regard the infant's first object as the mother.

Object relations theory originated in the Hungarian school, led by Ferenczi, which maintained that there are object relations, albeit primitive ones, from the beginning. Winnicott (1948, 1953, 1960) was not clear about the origin of the infant-mother tie but talked about the "good enough mother." He emphasized physical holding, which he considered a more basic form of loving than Freud's oral theory.

Object relations begin in the first year of life. Occasionally, the term dependency is used to characterize the preobjectal relation between the infant and its mother.

Freud (1953) stated that the child's first love object is the mother's breast and believed the oral behavior of infants influences later love relations. Freud (1914) characterized the object relation

as "anaclitic" because he viewed the sexual instinct as being satisfied through self-preservation. The implication is that anaclitic love depends on being fed, an issue which seems directly linked to failure to thrive, where the emphasis is on the feeding and behavioral consequence of "lack," such as loss of weight.

Later theorists such as Mahler (1965) and other ego psychologists began to view object relations as intertwined with ego development. While accepting Freud's view of psychosexual development, they emphasized object relations in the context of ego functions. The basic premise is that infants undifferentiated structurally, typographically, and dynamically cannot discriminate themselves from their environment.

In conclusion, while the psychoanalytic perspective of attachment appears relevant, it has some methodological flaws in application. Psychoanalysts have increasingly looked to behaviorism as a more solid basis for explaining attachment.

Social Learning Perspective of Attachment

Social learning theorists are concerned with "general laws of behavior" that include all learning. Their views of attachment originate in the fact that the infant is helplessly dependent on the mother for basic needs. Behaviors exhibited by the infant, such as crying, are reinforced through the mother's actions. The stimuli provided by the mother's face and physical presence are signals to the infant. In the process of learning, new behaviors are added to the existing cluster of dependency behaviors.

The infant acquires a drive to be close to the mother and to seek her attention, termed "dependency drive" by the social learning

theorists. Similar to the Freudians, Dollard and Miller (1950) postulate that derivative or secondary drives remain linked to their primary drive roots. They conclude:

> In the first year of its life the human infant has the cues from its mother associated with the primary reward of feeding on the more than 2,000 occasions. Meanwhile the mother and other people are ministering to many other needs. In general there is a correlation between the absence of people and the prolongation of suffering from hunger, cold, pain, and other drives; the appearance of a person is associated with a reinforcing reduction in the drive. Therefore, the proper conditions are present for the infant to learn to attach strong reinforcement value to a variety of cues from the nearness of the mother and other adults.....(It) seems reasonable to advance the hypothesis that the ... human motives of sociability, dependence, need to receive and show affection, and desire for approval from others are learned (Dollard and Miller, 1950, pp. 91-92).

According to social learning theorists, attachment is a generalized drive. If this is indeed the case, it may result in generalized personality traits which differ in strength among individuals. In research, guided by the dependency drive hypothesis, the correlations were not as high as expected; in particular, help-seeking and other dependency behaviors emerged with low correlations. If dependency is a drive, then it ought to be strengthened under conditions of deprivation and lessened under conditions of satiation. It was hoped by the behaviorist that psychoanalytic constructs, based on inner experiences and dynamics, could be translated into theoretical constructs more relevant to observable behavior than interpretive speculations. In the mother-infant relation one would expect to find that maternal deprivation is correlated with dependency needs, but this has not been proven conclusively, and criticisms of the dependency drive concept have increased.

Gewirtz (1961) is one critic of the drive theory, and he asserts that an organism may interact with its environment when not in a state of need; there may be reinforcing stimuli that are not relevant to organic needs. As research becomes oriented toward more detailed examination of behavioral systems, it becomes less useful to think of general drives.

Gewirtz (1969) further contends that it is an empirical question as to which stimuli in the infant's milieu emerge at growth points as positive reinforcers for behaviors and hence affect learning. He used similar concepts in his research on dependency and attachment, which he states are abstract terms for classes of functional relationships. Both involve positive stimulus control over a variety of individual responses to stimuli generated either by a class of persons (dependence) or by a specific person (attachment).

One great strength of the social learning theory is its insistence that, to be reinforcing, a stimulus must be contingent upon the behavior in question. Relating to both instinctual and behaviorist concepts is the ethological perspective postulated by John Bowlby.

An Ethological Perspective

The instinctual and social learning theories have converged to stimulate new approaches to a study of mother-infant relationships, best represented by the work of John Bowlby.

Bowlby's (1969) basic premise is that attachment behavior has biological underpinnings. This behavior in the young, together with reciprocal parental care behavior, tends to be among the most environmentally stable behavioral systems across all species.

Bowlby (1958) characterizes attachment behavior as instinctive but believes instinctive behavior is not inherited; what is inherited is a potential to develop behavioral systems. These can be organized not only as sequential chains of stimulus-response but also in hierarchical patterns. For example, before infants develop cognitive structures, their behavior is organized along the simpler lines of fixed-action systems.

Furthermore, affect and emotions have no importance in psychoanalytic or behavioral theories. Bowlby gives to both affect and emotions the term "feelings," which he states are appraising processes. Appraisal is a complex process, as is feeling. Emotional processes such as affective disorders are important in this respect.

For present purposes, it is in this way that affective disorders, such as depression in mothers, play a vital part in the FTT situation. The ethological perspective labels different primary reinforcers and suggests that they continue to be reinforced differentially by different sets of consequences. For example, while the mother's smile might reinforce the infant's watching, it is difficult to assume that it might reinforce his postural adjustment, clinging, or crying.

Feminist Perspective

The feminist perspective of mother-infant relationships focuses on a woman's role in marriage and motherhood. Almost all women marry, and the assumed roles of wife and mother accompany this change. Women are challenged in marriage by daily crises, never-ending attempts to create an orderly and attractive environment, and the search for

satisfaction in soothing hurt feelings and tempers. This nurturant responsibility is absorbing and takes vast amounts of energy, enthusiasm, and imagination. On the negative side, the intensity that fosters love also fosters hatred. Household chores are exhausting, and family interactions can be hostile. Because the husband's work dictates many things, such as relocation, women are often isolated from a support system through which they share news, advice, and feelings.

Women are often unappreciated in their roles as wives and mothers. They are caught up in endless rounds of "stroking," Jesse Bernard's (1972) word for attending to the emotional needs of others. Many sociologists agree with Bernard that marriage is difficult for women, whose primary role and identity are as wife and mother, and they often develop the housewife syndrome, a vague concept associated with loneliness and boredom.

Ferree (1976) interviewed women who did and did not work outside the home. Her conclusion was that a paycheck and contact outside the home bolstered self-esteem, but some of the housewives were happy and competent. They reported that family and friends regularly encouraged them and respected their homemaking responsibilities. These women were not socially isolated, as is the case with mothers of FTT infants. Ferree's study suggests that women are not unhappy because of their homemaker role but because of its context. If they have a warm supporting social network, it is likely they will feel valued.

Despite the increasing discussion about the role of fathers in rearing children, most people see women as primarily responsible. Kellerman and Katz (1978) asked thirty-one middle class parents to

indicate the percentage of responsibility mothers and fathers ideally should have for various home activities. The eighty-nine items covered five areas: educational guidance, physical care, emotional support, discipline, and recreation. The results showed that mothers were considered responsible for forty-seven of the items and fathers for eight; the others were shared. Both women and men agreed that the father was responsible for developing the child's skills in sports, mechanical tasks, and self-defense.

Psychologists, feminists, and others have become more and more interested in how women's roles as mothers and wives are linked to depression. Weissman (1980) discusses two hypotheses, the first called the "social-status" hypothesis, which states that social discrimination makes it difficult for women to achieve mastery by direct action and self-assertion. These inequities lead to helplessness, dependency on others, low self-esteem, low aspirations, and, ultimately, clinical depression. The second, derived from Seligman's work in 1974, Weissman calls the "learned helplessness hypothesis." "Femininity" values are redefined as a variant of the learned helplessness that characterizes depression. The most convincing evidence that social roles and feminine values play a part in the vulnerability of women to depression is the data which suggest that marriage and motherhood have a protective effect for men but detrimental effect for women (Radloff, 1975). Additional data on depression in women after childbirth have been cited.

Neurotic depression after childbirth is reported in approximately 10 percent of women, generally lasting weeks or months (Hamilton, 1962).

The postpartum period is inconsistent, and clinical symptoms vary among women. It should be noted that failure to thrive in infants occurs after birth and may last until the infant is approximately one year old. The correlations are worthy of future study.

Chesler (1978) states that depression in women has been conceived of as the response to or expression of loss, either of an ambivalently loved other, of the ideal self, or of "meaning" in one's life. She further asserts that women are in a continual state of mourning for what they never had or had too briefly. Pregnancy and the removal of infants from a woman's uterus could be perceived of as loss. Chesler (1972) has written that "mothers live in the treasured bits and pieces of past life." In a similar vein, Fraiberg (1980) attributed the impaired mother-infant relationship to "ghosts in the nursery."

Adrienne Rich (1976) summarized motherhood beautifully in her manuscript Of Woman Born:

> Most of the literature of infant care and psychology has assumed that the process toward individuation is essentially the child's drama, played out against and with a parent or parents who are, for better or worse, givens. Nothing could have prepared me for the realization that I was a mother, one of those givens, when I knew I was still in a state of uncreation myself. That calm, sure unambivalent woman who moved through the pages of the manuals I read seemed as unlike me as an astronaut. Nothing, to be sure, had prepared me for the intensity of relationship already existing between me and a creature I had carried in my body and now held in my arms and fed from my breasts. Throughout pregnancy and nursing, women are urged to relax, to mime the serenity of madonnas. No one mentions the psychic crisis of bearing a first child, the excitation of long-buried feelings about one's own mother, the sense of confused power and powerlessness, of being taken over on the one hand and of touching new physical and psychic potentialities on the other, a heightened sensibility which can be exhilarating, bewildering, and exhausting.

One theory that grew out of the psychoanalytic school but emphasizes the feminist perspective is the work of Karen Horney. In a recent study Feiring (1983) compares and contrasts the work of Horney and attachment theorists, stating that while they differ in theoretical perspective, population, methodology, and the phase of the life cycle on which they focus, both theories are remarkably similar in the description of three fundamental behavioral styles that define the quality of individual and interpersonal relationships and the ability to deal with stress.

Horney's work, based largely on clinical observations of adults, focuses on interpersonal relations. She speculates on how certain behavioral styles of adults evolved from early parent-child relationships. In developing interpersonally, the child must learn to utilize three fundamental forms of relating: (1) moving toward people, (2) moving against people, and (3) moving away from people. These three are complementary, and all are necessary for good human relationships.

It has been argued that certain maternal styles engender certain degrees of attachments and adult behavior. While the mother as the determinant of the child's adaptive behavior has been focused on, a theory employed by Horney and attachment researchers appears correlational.

The attachment concept of proximity seeking is related to Horney's moving toward mode, while the exploration concept is related to moving away. The child's ability to move toward, away, and against is implicit in the process of attachment of adaptive behavior. In the chapter of"Disorders of Bonding", Derivan (1982) discussed the two phases of the attachment process that tie into Horney's concepts.

There are two phases of cyclic interpersonal behavior exhibited by the infant. When interacting with the mother there is an "ebb and flow" of the infant's body, first outward toward the mother and then back in toward himself. At the peak of the attention phase the infant reaches out, may coo, his eyes dilate, arms jerk forward, and head moves back. In the nonattention phase of the cycle the child shifts away from the mother, and his upper extremities move back toward his own body. Such a cyclical response is also seen in the mother, demonstrating a similar ebb and flow attention. It could be speculated that the mother-infant attachment in FTT infants suffers from inappropriate uses of this moving away, against, or toward cycle. This, however, continues to be worthy of further investigation.

Summary

Object relations, dependency, and attachment are overlapping constructs. They focus on different sets of problems in different contexts, but their common ground is concern about the origins and development of the mother-infant relationship. All the perspectives discussed have made valuable contributions to the understanding of that relationship.

No one theory fully explains failure to thrive in infants, but when the theories are integrated, they offer a solid basis for understanding nonorganic FTT. It is, however, important to recognize that failure to thrive exists within the broader society and is maintained by both environmental and physiological factors.

Purpose of the Study

The purpose of the study is threefold.

1. Explore the personality characteristics of mothers of FTT infants using the Minnesota Multiphasic Personality Inventory (MMPI).
2. Measure retrospective reports of parental behavior of mothers of FTT infants using the revised Children's Report of Parental Behavior Inventory (CRPBI).
3. Investigate and analyze the effect of loss experiences as they relate to mothers of FTT infants through administration of the Response to Loss Scale (RLS).

General Hypotheses

Three general hypotheses are to be investigated. Statistical hypotheses are stated in Chapter III.

Hypothesis 1: Selected scales on the Minnesota Multiphasic Personality Inventory will not discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Hypothesis 2: The Revised Children's Reports of Parental Behavior Inventory will not discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Hypothesis 3: The Response to Loss Scale will not discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Overview

This study concerns the impact of the mother's personal ties on her infant diagnosed with failure to thrive syndrome. Variables contributing to the mother's personality will also include her

experiences with her mother and her perceptions of any loss which she has recently experienced.

This information will be organized in the following manner.

Chapter II

Presented in this chapter will be pertinent literature concerning the mother's personality, behaviors, and attitudes with respect to her FTT infant, a portrait of the family from which these infants come, the attachment process and content of FTT infants, and the closely related issue of abuse and neglect in families of infants who fail to thrive. Special attention will be given to studies with a focus similar to this research, namely, the mother's personality.

Chapter III

The research design, methodology, population, and a review of the literature which has used the measures adopted in this research will be discussed.

Chapter IV

The data collected from this research will be analyzed and discussed in depth in this chapter.

Chapter V

A summary of findings, conclusions, and recommendations for future research will be presented in this final chapter.

CHAPTER II

REVIEW OF THE LITERATURE

This literature review examines research into infant failure to thrive. The areas covered are: the mother's personality, behaviors, and attitudes; family characteristics; attachment process and content; and the familial characteristics of abuse and neglect. A summary section draws some conclusions.

The Mother's Personality, Behaviors, and Attitudes

Of the many significant factors contributing to FTT, the most critical may be the mother's behavior and attitudes toward the infant. Researchers have suggested that the mother's personality, including her psychosocial development, will affect the quality of her response to the child (Benedek, 1959; Choler, 1975).

In early studies Benedek (1949) concluded that emotional attitudes of the mother affect the child, who may demonstrate symptoms previously identified in the mother. She further asserts that during pregnancy, the maternal libido becomes transposed from heterosexual involvement to the self. A mother may have good feelings toward her pregnancy or she may use defenses against that process which may influence her caring for the infant. As far back as the 1950s research has linked medical illness to the mother-infant relationship.

Rumination, a psychosomatic syndrome in which the infant burps up food taken in for self-stimulation, has characteristics similar to FTT and is attributed to poor relationships between mothers and infants. Richmond, Eddy, and Green (1958) reported that maternal characteristics such as inability to fulfill a mature psychological role, cater to dependent needs, and provide adequate mothering may help cause the disorder. The researchers also concluded that preoccupation with death of the infant (indicating unconscious death wishes) may be a contributing factor.

The infant may exhibit rumination because of a lack of comfort and satisfaction during the feeding process, and by this behavior may be seeking substitutions for painful experiences. Any experience which deprives the infant of intimate stimulating relationships predisposes the infant to rumination disorders, according to the researchers.

Hollowell and Gardner (1965) studied rumination and growth failure in male fraternal twins. The results indicated a connection with serious emotional stresses in the family.

Little information is available on the personality structure of mothers of FTT infants, but psychiatric diagnosis has revealed some dynamics.

Fischoff, Whitten, and Pettit (1971) studied twelve mothers of infants with growth failure secondary to maternal deprivation. Each mother was seen for a psychiatric interview, supplemented by contacts with her during hospital visits to her infant. In addition, informal interviews were conducted with available fathers. Information was obtained by the psychiatric social worker and through observations by

the pediatrician and nurses. A genetic assessment of the mother's personality and a cross-sectional study were the goals of the psychiatric examination. The mother's development and her verbal and nonverbal relationship to her infant were assessed. The researchers were interested in identifying forces that allowed a mother to organize her personality in relation to her infant. The psychiatric interviews were not structured, but an attempt was made to explore as many facets of the mother's personality as possible. Information was summarized for each mother under the following headings: age, marital status, initial appearance, manners, affect and mood, past history, past memories, self-image and ego functions, present mode of behavior, object relationships, defenses and fantasies, hopes and daydreams.

Ten of the mothers warranted a diagnosis of character disorders: (1) disturbed early childhood, (2) poor performance in present day activities, (3) initial behavior indicative of severe psychopathology, (4) desire for an anaclitic relationship, (5) concrete thinking patterns, (6) use of denial, isolation, and projection as defenses, and (7) a predisposition toward acting out as opposed to thought. The term character disorder, according to the researchers, implied rigidity and inflexibility of mental mechanisms. The mothers so diagnosed frequently dealt with conflicts as if they were localized to the environment. They had a poor "sense of personal identity."

The personalities of two mothers were different. Daily activities were performed well, with the exception of handling the FTT infant. Appearance and behavior on initial contact did not indicate psychopathology. There was not a desire for others to take care of her. Defenses were minimal.

The researchers concluded that the number of cases of character disorders found in these mothers was akin to inadequate mothering. Although a majority of those studied had a character disorder, this finding cannot be generalized to all mothers of FTT infants with similar characteristics. The study's major drawbacks are the small sample size and lack of controls. However, other research has confirmed defective personality structures in mothers of FTT infants.

Barbero et al. (1963) state that mothers of FTT infants are depressed, exhibit anger and helplessness, and have problems with self-esteem. They further assert that these mothers live in disrupted environments, that is, where such conditions as alcoholism, childhood deprivation, and physical abuse by parents exist. One mother reported isolation in her early childhood and a poor relationship with her mother. Another was the victim of physical abuse.

Leonard et al. (1966) describe similar characteristics for 13 mothers of FTT infants. They reported that the mothers had poor self-esteem, lacked a support system, were lonely and isolated, and did not have adequate nurturing in their own childhood.

Elmer (1960), in a clinical paper, recognized the importance of the mother's role in FTT infants, speculating that the organic factors in the FTT syndrome may often mask the significant part played by the mother. In five cases, Elmer highlighted the mother's emotional state. One had "excessively strong needs to be taken care of." Another exhibited anxiety and depression. In another case, the mother reported being nervous since the age of 10. With the exception of one mother who did not conform to the pattern, it appears as though the mothers

Elmer studied experienced difficulties which grew out of the possible neurotic personalities of their parents.

The similar findings in clinical observations of all these studies increase the validity of a defective personality structure existing in mothers of FTT infants. Yet the researchers used interview techniques and extensive social history reports which are devoid of the controls necessary to make the findings generalizable to other samples. They also fail to present evidence of the reliability of statistical procedures. Recent studies have begun to fill a gap in the literature by correcting for most of these methodological flaws.

Pollitt, Eichler, and Chan (1975) studied the social development, emotional adaptation, and functioning of mothers of FTT infants and a group of matched controls. The objective was to determine whether mothers of FTT infants were likely to be psychologically ill-adapted and whether their behavior interfered with their infant's physical growth and psychological development.

The researchers studied thirty-eight natural mothers of thirty-eight children. The sample was selected from an outpatient pediatric clinic where many of the children were brought with upper respiratory and gastrointestinal infections. The 38 children were divided into an index and control group, matched for age, sex, and race. Data on the mother's emotional and social relations with her infant were gathered through observation during home visits or clinical interviews.

The interviews were open-ended, and the Mental Health Interview Schedule was used to evaluate current emotional status. In addition, a shortened version of the Inventory of Home Stimulation, including a

few items from the Childhood Level of Living Scale, was used to evaluate the mother-infant interaction.

Results indicated that 86 percent of the mothers in the index group experienced at least one stressful childhood event. There were no significant statistical relationships between presence or absence of parental mental illness. The scores on the Mental Health Interview for the two groups were not different. Most mothers showed no sign of severe anxiety or depression in handling daily routine, nor were most of them socially isolated; only in the area of marital relations was any difficulty identified. Differences were noted between the two groups in the expression of maternal affection, verbal interactions, and physical contacts with the infant.

The evidence from this study does not support the conclusion that overt psychopathology exists among the mothers of FTT children. However, their behavior was described as "inoperant" because it differed substantially from that of mothers of thriving children. The research further suggests that the behavior of the mothers of FTT infants may be triggered by the child's behavioral characteristics, and the mother's personality may be influenced by her own stressful childhood. Although Pollitt, Eichler, and Chan (1975) found no proof of overt psychopathology, their evidence points to an impaired mother-infant relationship. Other studies have confirmed this hypothesis with respect to the mother's behavior.

Kerr, Bogues, and Kerr (1978) studied the relationship between infant malnutrition and maternal psychosocial behavior by comparing the mothers of children who were and were not malnourished. The controls were matched for age and family income. The mothers were interviewed

and asked to describe their relationship with their children. The diagnosis of malnutrition was made on the basis of lack of evidence of other causes of growth failure.

The groups differed in that (1) all of the children of group one mothers were inpatients, (2) the families of group one were less affluent, and (3) the mothers in group two had been required to attend an antenatal clinic. The results showed that mothers of malnourished children had poor self-esteem and low energy levels. They lacked trust and stereotyped others according to their own needs. They were apathetic. Both the control group and index group reported early childhood deprivation. The control mothers were observed to have the strength and ability to generate support.

In a psychological exploration of the nonorganic failure to thrive syndrome, Togut, Allen, and Lelchuck (1969) evaluated the psychological tests of six mothers of FTT infants. The Wechsler Adult Intelligence Scale, Bender Motor Gestalt, Thematic Apperception test, and the Rorschach were used. Five of the mothers demonstrated average intellectual functioning, with Full Scale IQ's ranging from 96 to 107. The sixth mother had an IQ of 72, considered borderline. In her case the projective test indicated emotional disorder which reflected a functional problem rather than intellectual retardation.

The projection test for all the mothers revealed profound emotional and physical deprivation extending back through early childhood. The mothers demonstrated poor impulse control and had difficulties with sexual and aggressive impulses. There was a significant tendency toward acting out of impulses. Most of the mothers projected their feelings of hostility onto their husband and children. Rejection

by the male figure produced the most anxiety. The husbands were regarded as nonsupportive and as offering little emotional satisfaction. One mother had a more positive view of her husband and had a better relationship. Mothers expressed feelings of guilt about children born out of wedlock. Some of the women felt trapped by the motherhood role and were overwhelmed by concern about rearing children without emotional support.

In addition, these mothers experienced strong feelings of hostility and aggressive impulses which were suppressed because they feared retaliation from the environment for loss of control. Their self-esteem was that of persons damaged and deprived. They appeared to be seeking support from other adult figures, which may indicate concerns with their own parents as children. The authors concluded that a cycle of deprivation and dependency apparently is transmitted from generation to generation. This research seeks to reach stronger conclusions in this direction through the use of the proposed measures.

Newberger et al. (1977) also confirm through case reviews that maternal historical stress and lack of social support characterize mothers of FTT infants.

Bithoney and Newberger (1982) identified mothers of FTT infants by their social isolation and their sense of having no control or being overwhelmed with life's situations. Fathers in the same study were unavailable to the mother for emotional support or child care activities. In addition, marital dissatisfaction was a key factor in identification of FTT families in the study.

Evans, Reinhart, and Succop (1980) studied 45 FTT children and their families. The fourteen mothers in the first group exhibited the

following characteristics: (1) depression, (2) fear that their children would die, (3) inadequate interpersonal relationships with their children, (4) object loss within four months of the child's hospitalization (that is, the death of her own mother) and tracing the relationship of mothering back to the time of original loss. The second group of 15 mothers: (1) were depressed, (2) had strained interpersonal relationships with their infant while in the hospital, (3) perceived the child as ill or retarded, and (4) felt a chronic sense of loss. Histories revealed poor mothering in their own childhood. The third group of 18 mothers had problems with affect and interpersonal relationships. These mothers: (1) were angry and hostile, (2) perceived the child not in terms of physical illness but as being "bad" or "out to get her," (3) handled the child in an angry manner, and (4) gave histories of poor relationships. The authors used a case study approach in gathering the data.

In another study of medical charting on infants who were hospitalized because of failure to thrive, Drotar, Malone, Negray, and Dennstedt (1981) reported that mother-infant interaction was impaired. This was characterized by (1) misunderstanding of the infant's needs, (2) rough-tempered handling, (3) inconsistency and anxiety, and (4) a lack of responsiveness to the infant's cues.

Contradictory to many findings and using a slightly different approach is the work of Vietze et al. (1978). They conducted a prospective study of new born behavioral and interactional characteristics of nonorganic FTT infants selected from a sample of 498. Eighteen mother-infant pairs with male infants and 17 mother-infant pairs with female

infants were chosen. Four measures were used, one of them the Maternal History Interview scale, which is broken down into six areas assessing the mother's history, attitudes, and environmental conditions: (1) feelings about pregnancy, (2) support network, (3) her own nurturance as a child, (4) personality characteristics, (5) home life, and (6) parenting skills. A short version of the Maternal Attitude Scale also was administered. This provides information regarding the mother's attitudes toward child rearing in the following areas: (1) control of the child's aggression, (2) encouraging reciprocity with the child, (3) physical closeness, (4) acceptance of emotional complexity, and (5) feelings of competence in caring for the child. The other two measures were the Life Stress Inventory, which determines the number of recent stressful events, and the Knowledge of Developmental Norms Inventory, which measures the accuracy of expectations about child development in normal children.

Results indicated no significant differences between mothers of infants later diagnosed as suffering from nonorganic failure to thrive and mothers in control groups. The research thus contradicts previous findings that maternal attributes are related to nonorganic failure to thrive. The fact that the study was prospective may account for the exceptional findings.

In a different context, focusing on attitudes held by mothers identified as psychologically ill-adapted, Cohler, Grunebaum, Weiss, Hartman, and Gallant (1976) studied discharged psychiatric patients who were mothers of young children and compared them with a group of non-psychiatric mothers. The purpose was to assess child care attitudes

and adaptation to the maternal role. Of the group of 47 mothers selected from state and private hosptials, approximately two-thirds were diagnosed as schizophrenics or schizo-affective psychotics, and one-third showed manic-depressive psychoses. Forty-eight nonhospitalized women were recruited from the community. The women were matched according to husband's occupation, education, age, number of children, years married, and sex of the youngest child. The measures administered included the Maternal Attitude Scale, which is a 233-item Likert-type instrument, and the Social Role Adaptation Instrument, which consists of a number of nine-point scales.

The findings, which provided cross-validation of earlier studies conducted by the researchers, indicated that, compared with well mothers, mentally ill mothers believed less in the importance of establishing a relationship between mother and child. They relied on denial of ambivalent feelings regarding child care. Mentally ill mothers also were not concerned with fostering individuation of the child from the mother. The attitudes held by the mentally ill compared to the control mothers were associated with less successful social adaptive adult roles extending beyond the maternal role to role as wife, friend, and neighbor, and as daughter in one's own parental family.

In summary, studies on maternal personalities and behavior indicate that a significant number of maternal characteristics and behaviors when interacting with one's young children are due to the mother's early childhood experiences. Furthermore, the mother's view of her role as mother and wife influences her interaction with her child. Although some behavioral characteristics have been indicated, specific personality

patterns have been inconsistent and few. Hence, any conclusions regarding specific personalities based on behavioral characteristics would be premature.

Failure to Thrive: Family Characteristics

It is assumed that the consequences to the FTT infant flow mainly from the mother, who is regarded as the primary care giver, yet the mother's interaction not only with the infant but also with other family members appears to be relevant. As is the case with studies done on mothers, there are limitations to the research done on families, and findings and results must be interpreted with prudence. A clear picture of the effect of demographic and ecological factors on FTT infants and their families has yet to be established.

In a recent controlled study, Kotelchuck and Newberger (1983) examined the familial characteristics of FTT infants. Standardized, precoded interviews were administered to mothers of 42 FTT infants and mothers of 42 matched controls during the infant's hospitalization. The interviews focused on historical and comtemporaneous stress relating to the family, specifically: (1) family structure and residence, (2) socioeconomic status, (3) characteristics of the mother's pregnancy, (4) parent-child separation, (5) maternal stresses, (6) family support and isolation, and (7) infant behavioral characteristics.

The reseachers used a discriminant function analysis to assess the maximum differentiation between the failure to thrive group and the controls. The results showed that three variables significantly accounted for variances. Failure to thrive families have children who are ill; they reside in unfriendly neighborhoods; and compared to non-

FTT families there is a larger discrepancy in the parent's education. The most pre-eminent discriminator between the two groups was the presence of an ill child; familial and maternal factors were not strong discriminators. The researchers state that "perhaps, it is the characteristics of the child which cause the mother's perceptions and not vice-versa."

One limitation of the Kotelchuck and Newberger study is that social class was not fully explored for both groups to determine its effect on the etiology of failure to thrive in infancy. Other literature suggests that FTT children are predominantly white and middle class relative to children with pediatric illnesses in general (Newberger et al., 1977). Another limitation is that the degree of sickness of the child was not assessed.

Rosenn et al. (1980) state that when parents hear the word failure in the medical diagnosis they interpret it as their failure. This may cause anxiety and depression in parents, a withdrawal response on their part perhaps owing to society's reaction to having a sick child. The researchers conclude that attention needs to be paid to the "sick child" as contributing to maternal distress. (To this end, the present study will administer the proposed measures after the child's hospitalization.) One may speculate that the hospitalization contributes to the state versus trait factors of the mother. Similar to Kotelchuck and Newberger, Rosenn et al. suggest that maternal behavior may be the consequence, not the cause.

As mentioned earlier, Evans, Reinhart, and Succop (1980) studied 45 FTT families. In addition to maternal factors, the research investigated family characteristics using the Hollingshead Two Factor Index of

Social Position. Recall that the FTT families were separated into three groups. Overall, the living conditions of the families in the first group were not considered deprived. Housing was good, and budgets were tight but not excessively so. Families were small, the average sibling number being two. Half of the 14 families in the first group had only one child. Food was reported as always being available.

In the second group of 15 families, 14 lived in deprived conditions; housing was crowded, and food was scarce. Five families had more than five children. Ten of the infants were the youngest children in the family.

In the third group of 18 families, living conditions were good, housing and food were adequate. Eight mothers were married, three unmarried.

In sum, the family structure profile varied. The parents, both the mothers and some fathers, expressed no sense of fulfillment in the parental role. The parents in group two had a lower threshold of strength in their ability to cope. The researchers state that under these conditions the FTT child is not so much the product of a disturbed mother-child relationship as of severe socioeconomic deprivation. These results are indeed contradictory to the Newberger et al. (1977) findings.

Leonard et al. (1966) studied failure to thrive in the context of a family problem. Thirteen babies and their families were evaluated. Multiple problems were found in every family, including such stresses as overcrowded housing, poverty, lack of heat, disorganization, unemployment, disturbed marital relationships, illegitimacy, and chaotic home life. Particularly worthy of note is that in every family there

was a quick succession of children; all but one had older siblings. The fathers were absent, uninvolved in family life, and nonsupportive. Two of the couples were not married, and the father was in and out of the home. The mothers exhibited feelings of inadequacy. The researchers concluded that feelings of motherhood do not always accompany the biological fact but are influenced by such factors as environmental and psychological conditions. They suggest that most important of all is the mother's nurturing in her own infancy and a satisfying relationship with her husband. They further concluded that "the fathers of many of these infants could be considered to have failed to thrive."

At a symposium on failure to thrive sponsored by the Cleveland Regional Perinatal Network (1981), a psychologist examined failure to thrive in the family context. Measures used were clinical and home-based observations. Information obtained about families of FTT infants suggests that the way the family copes with stressors influences the mother-child relationship. Compared to other families, theparents of FTT infants had more childhood histories of conflict with and neglect by their own parents. There was an array of family structures and coping styles, ranging from middle class to poverty level, and racial backgrounds varied. A common subgroup among family units with FTT infants was a mother and father living in a common law marriage. In all of the families, strain on the family relationship was apparent. The research states that failure to thrive can be viewed as a signal of such strain, which contributes to poor family coping and other stresses.

Although this study was not empirically based, the descriptive information it provides confirms previous assertions regarding family structure and relationships.

Barbero and Shaheen (1967) also maintain that families of FTT infants have multiple problems, although economic deprivation is not always present.

Maginnis, Pivchik, and Smith (1967) investigated the family structures and relationships of 50 mothers and families. Thirty mothers spoke of being depressed after the infant was born. Sixteen mothers who had boys wanted girls. The psychosocial stressors in these families included: (1) marital discord, (2) unemployment, (3) mothers working or attending school, (4) financial problems, (5) marital separation, (6) illness of mother's mother. The findings did not confirm those of other research which points to a young mother as being part of the problem. The parents in this study were older, with an average age of 26 for mothers and 29 for fathers. Forty-two families were intact but alluded to marital problems. Approximately half of both the mothers and the fathers were reared in intact families, although many mothers expressed negative attitudes toward their mothers. The fathers had jobs requiring a high degree of skill. In sum, the study contradicts previously cited research which states that failure to thrive is prevalent in lower socioeconomic groups.

Few studies have used organic failure to thrive as a control group or comparison group in examining social factors of nonorganic issues. However, in a recent exploratory study comparing nonorganic and organic FTT infants and families, Gagan, Cupoli, and Watkins (1984)

recommend replacing "maternal deprivation" with a new concept of parental deprivation as a more accurate model. Their preliminary results suggest that mothers of FTT infants do not have good social support networks. Age and socio-economic status appear to be important but not necessarily determinant. They further revealed a rather unexpected finding of few differences in the social deficiencies of families of nonorganic compared to organic FTT infants.

Two additional findings of the study are worth discussing. The first was that organic FTT infants were significantly smaller at birth, independent of pregnancy complications or prematurity. The second was that nonorganic FTT infants were more prevalent during the period of "infant-care giver" role development than in the later toddler stage.

The weakness of this study appears to be that it points to social indicators which lend further insight but which have no empirical justification. The results need to be interpreted cautiously. No control group was used to give comparative data for the observed indicators.

The family characteristics of FTT infants vary, and specific conclusions as to a typical profile cannot be drawn. Further assessment and more comprehensive studies are needed. Although few consistent main effects have been pinpointed, many interactions have been observed, but findings should be interpreted with caution. Few studies have examined family characteristics or maternal behavior outside the hospital environment. A recent controlled study conducted by Casey, Bradley, and Worthan (1984) focused on the social and nonsocial home environments of nonorganic FTT infants compared with matched infants who were thriving. The instruments used were the Home Observation for Measurements of the Environment (HOME), the Coddington Life Events

Record, and the Index of Parent Attitude Scales. The findings suggest that the HOME and its subscales entitled Maternal Acceptance of the Child, Organization of the Physical Environment, and Emotional Regressivity were significantly less favorable for the nonorganic FTT group. There were no differences on the other measures.

The Casey, Bradley, and Wortham study indicates some factors influencing the mother's ability to provide a supportive environment. The authors suggest that future research should attempt to quantify systematically the cumulative influences of multiple factors affecting that ability, and the present is a step in that direction. The process of attachment and separation for the FTT infants is one aspect that requires some attention.

Attachment Process and Content

Few studies address the attachment process in FTT infants and their mothers. Gordon and Jameson (1978) looked at patterns of attachment in a group of 12 infants diagnosed as suffering from nonorganic failure to thrive. These infants and a group of matched controls were observed using the Ainsworth Strange Situation. The study was conducted after hospitalization to control for any effects this might have, and the control group was selected from the same inpatient population. The subjects were 12 to 19 months of age, which conforms to the ages for attachment and separation established in developmental studies (Ainsworth, 1969).

Mothers and children were brought to the play area in the laboratory, where mothers were asked to respond naturally to the children and allow them to play on their own. After several minutes a stranger

entered, and the mother later left the room. All of the observations were videotaped for analysis. The nature of the attachment was assessed using the Ainsworth classificatory system, a 7-point scale used to evaluate proximity seeking, proximity avoidance, contact seeking, contact resistance, and crying behaviors. Six of the 12 nonorganic FTT infants were rated as insecurely attached; all those in the matched group were rated securely attached. Despite the study's limitation of small sample size, it is notable that half of the FTT children showed behavioral impairment in the mother-child relationship. In addition, the two groups could be distinguished based on their affective behavior. The researchers concluded that the FTT infants were at a greater risk for insecure attachment. They noted, however, that variance within the group was not uniform.

A recent study by Chatoor and Egan (1983) refers to nonorganic failure to thrive as a separation disorder. Their work differs from other nonorganic FTT studies because of its emphasis on the disturbance in attachment between mother and child, particularly food refusal by the infant. The researchers state that the infant refused to eat in an attempt to achieve a degree of autonomy and control with regard to the mother. The results of nine case studies indicated that physical symptoms were the same as for other FTT children, for example, lack of weight gain, depression of linear growth, and delayed bone structures. However, behavior and cognitive development were different. The nonorganic FTT infants were alert, willful, and motivated. They were attached to their mothers and exhibited some clinging behavior. The mothers were from middle class backgrounds and were concerned about

nutrition and adequate care of the child. The father was absent in the life of most of the infants.

Clinically, food refusal by the infants was seen as a way of separating, as a maneuver to gain autonomy from the mother. The child refused food by pushing it away or spitting it out. While this study has methodological limitations, namely, control group and sample size, the importance of the content and process relating to attachment in feeding appears significant, and the subject needs further attention. Other content issues relevant to the attachment process have been explored, such as visual contact, touching, and verbal communications, though only indirectly among mothers with FTT infants. This research will not focus on process and content of interactions of mothers and infants.

Abuse and Neglect: Family Characteristics

An area closely linked to failure to thrive is abuse and neglect. In much of the literature, similar characteristics have been noted with respect to parents of nonorganic FTT infants and abused and neglected infants. Steele and Pollack (1974) maintain that in parents of abused children there is a disruption of the "mothering function." By this they mean the process by which an adult takes care of an infant; that is, a theoretically mature, capable, self-sufficient person caring for a helpless, needy, dependent, immature individual. "Mothering" was used because the task is performed by the mother, although it can be done by others.

Sandgrund, Gaines, and Green (1974) state that three important factors contribute to child abuse: (1) environmental stress, (2)

personality characteristics of the parents, and (3) characteristics of the child.

Very little research has considered maternal personalities and behaviors directly. A few studies indicate the importance of poor caretaking skills and less positive affect expressed with the child.

Wasserman, Green, and Allen (1983) compared interactional behaviors of twelve abusing mothers and twelve controls. Standardized coding from videotapes of free play between mothers and infants revealed differences in the quality of maternal stimulation. Compared to the control group, abusing mothers ignored more, initiated less, and did less verbal teaching; they also differed emotionally. While there was no specific clarity of emotional differences in this study, in another conducted by Weissman and Paykel (1974), the clinical judgment of depression in abusing mothers was supported.

Green (1983) described various traumatic components of the child abuse syndrome in clinical cases. He examined their effect on the psychopathology and cognitive development of abused children. Long-term traumatic factors included chronic pathological practices such as harsh and punitive child rearing, scapegoating, and maternal deprivation. In terms of the latter, the children were separated from primary objects during the early years. Although we cannot generalize to the nonorganic failure to thrive mothers, we can observe the similarities. However, in Green's study the children were not infants, ranging from four to twelve years of age.

Kaplan, Pelcovitz, Salzinger, and Ganeles (1983) compared 76 parents of abused and neglected children to 38 control parents. The measure used was the Schedule for Affective Disorders and Schizophrenia--

Lifetime Version (SADS-L), based on Research Diagnostic Criteria. The results revealed a significant amount of diagnosed psychopathology in abusive and neglectful parents, who were found to have antisocial and labile personalities. Mothers in abusive and neglectful families showed more depressive disorders and alcoholism than did mothers in the control group. The findings may be compared to the Fischoff et al. (1979) study of mothers of FTT infants. However, it is not surprising that many of the failure to thrive cases end up classified by protective service agencies as neglect cases because physical abuse is not apparent.

Other investigators have postulated a typology for child abuse parents similar to that for failure to thrive parents. Merril (1962) described such types as chronically hostile, compulsive and detached, and passive-dependent. Bryant et al. (1963) reported similar personality clusters in their investigations of abusive parents.

Smith et al. (1973) examined 214 parents of battered babies and matched controls of 53 parents. Subjects were given psychiatric interviews and diagnosed according to the International Classification of Disease, the Eysenck Personality Inventory, and the General Health Questionnaire. The results indicated that 64 percent of the abusive fathers had abnormal personalities, and one-third were diagnosed as psychopaths. Less severe disorders were found among mothers, 76 percent of whom had abnormal personalities; 58 percent were nonpsychotically disturbed, and 48 percent were diagnosed with depression, anxiety, or both. The limitation to generalizing from this study is that the subjects were from low socioeconomic backgrounds. Furthermore, twenty of the 134 children died, which suggests an extreme group. The ages of the children ranged up to 12 years, which may involve a different parent-child interaction than among parents and infants.

Newberger et al. (1977) studied 560 controlled cases of child abuse and neglect, failure to thrive, accidents, and poisoning. All children were under 4 years of age. Information was gathered from the child's medical records and from extensive interviews with the mother, conducted at the hospital. The structured interviews focused on child development issues, family relationships, health, finances, employment, and housing as well as life experiences of the mother. The interview material was organized into a series of a priori scales based on the sum positive responses in a particular category, such as stress in mother's childhood, family mobility, and broken home.

The results indicated that both failure to thrive and abused children had mothers with a high degree of historical stress and lack of social support. The children diagnosed as abused had high scores in all of the stress categories. Compared to the control group, families of the children in question were significantly different. They received less routine health care and made frequent moves. There were many child-rearing problems and a history of broken homes in the mother's childhood. No similarities were found across the groups. Furthermore, the abused child's familial etiologies appeared prominent compared with failure to thrive. This suggests that further studies are needed to discriminate specific characteristics between abused and FTT children.

Other studies have viewed FTT and abuse on a continuum. However, no clear relationships have been determined.

Sameroff and Chandler (1975) reported a lack of demarcation between neglect and abuse in children. They suggested evidence of several interrelated maltreatment practices such as neglect and rejection. Although the researchers attributed some of the cause to the

child's temperamental characteristics, mothers of FTT children were reported to be anxious and tense. Some of the mothers were depressed and failed to initiate action provoking stimuli with their children.

Klein and Stern (1971) studied low birth weight and battered child syndrome by examining records of 51 infants from Montreal Children's Hospital. Variables included sex, birth weight, gestational age, maternal age, and whether new born problems were recorded. The results indicated that several factors may be involved in battering of low birth weight infants, including mental retardation of the mother, maternal deprivation, and maternal separation from infants during the neonatal period.

Summary

Research in the area of failure to thrive is broad. Many aspects of the FTT infant have been studied, including the mother's personality and behavior, family characteristics, attachment content, and abuse and neglect. Nevertheless, a critical review of the literature has failed to confirm causal evidence of maternal characteristics in relationship to FTT infants. Research has consisted primarily of descriptive case studies, producing "unsystematic" anecdotal results. Furthermore, many studies have been conducted at the time of hospitalization, which influences the psychological state of parents and affects family relationships.

In a review of the literature, Kotelchuck and Newberger (1980) state there is little direct evidence supporting the hypothesized association of infant growth failure and maternal characteristics. There does appear to be evidence that mothers of FTT infants are

psychopathologically burdened, that they are depressed, and that they have high anxiety and character disorders.

The value of previous studies is limited by small sample size and because few used control groups. Psychiatric diagnosis has failed to yield definitive personality profiles of mothers of infants who fail to thrive.

Definitive demographic and ecological characteristics of FTT infants and their families also have yet to be established, although many conclusions have been drawn from hospital records. It is clear, however, that failure to thrive is not a syndrome limited to poor infants and their families. The danger of relying on hospital records, which is done in most studies, is that these fail to examine such critical topics as family network, parent-child separation, maternal upbringing, and stressors related to loss in the mother. The infant's characteristics and their effect on his or her growth failure also remain to be explored.

Control studies have increased in the last five years. The strongest of these, conducted by Pollitt et al. (1975), found no distinguishing psychopathological differences between the mothers of FTT children and control mothers. The role of maternal as opposed to social environmental factors in the etiology of failure to thrive still remains moot.

The Newberger et al. (1977) study on social pediatric illnesses indicates that those resulting from the child's physical and social relationships with his or her environment include child abuse, neglect, failure to thrive, accidental injuries, and ingestion of dangerous substances.

The present study attempts to continue investigation in the area of failure to thrive by avoiding some of the methodological problems of earlier research: weak design, uncontrolled samples, case studies based on extensive interviews, and limited measures.

Several conclusions can be drawn from the review of the literature.

1. In terms of the mother's personality as it relates to infants who fail to thrive, there is no specific pattern.
   A. Psychiatric studies have yielded diagnoses of character disorders with no specific evidence of personality patterns.
   B. Depression and anxiety among FTT mothers appear to be secondary symptoms of some type of loss, but whether object or identity loss, or both, is not clear. Whether the depression is a major affective disturbance or is due to external stressors is not clear.
   C. The mother's personality traits have often been confounded by situational experiences surrounding hospitalization of the infant, emphasizing state rather than trait factors.
2. In the area of family characteristics, several factors may be significant.
   A. Absence of father (psychological or physical) has an important effect on the mother's relationship with the child who fails to thrive.
   B. The mother's relationship to her own mother appears to affect her relationship with her infant.
   C. Little connection is found between sibling position and failure to thrive.

D. Differences between male and female FTT infants have not been extensively explored, nor any effect of gender on mother-infant interaction.

E. Socioeconomic factors do not seem essential in failure to thrive etiology.

F. Lack of social support and isolation seem to be variables associated with mothers of infants who have failed to thrive.

3. In the area of abuse and neglect, few clear distinctions have been made with respect to parental behavior toward abused as compared to FTT children. Neglect, a vague term, has not been explored to assess intent on the part of the mother.

Controversy and inconclusiveness continue to plague the literature. Some view the results as satisfactory; others regard them with skepticism. Although the subject of failure to thrive has recently gained attention, there are many unanswered questions. It is essential that this area continue to be investigated and that adequate methodologies be used to address the issues. The complexities and subtleties involved warrant sensitive, yet objective, research.

CHAPTER III

DESIGN OF THE STUDY

The purpose of this chapter is to present the plan of operation. This investigation will explore variables which might influence the mother's personality with respect to FTT infants. Her personality, as well as other factors, could affect the mother-infant relationship, especially the pediatric impression known as nonorganic failure to thrive in infancy. Personality profiles as shown on the MMPI were compared for a sample of mothers of infants diagnosed as nonorganic failure to thrive and mothers of infants with other pediatric illnesses, but who were thriving. In addition, these mothers were compared on their perceived losses and retrospective reports of what their mothers were like when they were children. The sections below cover the following topics: selection and description of the sample, measures, operational definition, procedures for collecting data, statistical hypotheses, design, analysis, and potential limitations.

Selection and Description of the Sample

The population studied consists of natural mothers of infants who fail to thrive and natural mothers of infants who thrive. Failure to thrive is defined later in this chapter. Thriving refers to all infants who may have a pediatric illness but who meet the criteria for normal growth with respect to weight, height, and head circumference proportions. The women were selected from pediatric outpatient clinics and

hospital populations, identified through the diagnosis of their infants by the pediatrician or pediatric resident. The relevant diagnoses were nonorganic failure to thrive rather than failure to thrive secondary to an organic component. These mothers of FTT infants were found to be representative of the population at large in terms of their infant's problem or chief complaint being a substantial weight loss or poor food intake. The mother's age, educational level, and socioeconomic status were matched for the control group.

Mothers were asked to participate if their infant had been followed up through the pediatric clinics within the month. Hospitalized infants and mothers were not used. The rationale for this was to eliminate the stress factor of hospitalization. Mothers who had not received psychotherapeutic intervention were preferred. The rationale for this was the perception of the investigator, and other clinicians, that very often there is a progressive shift in feelings and perceptions of parents during and after the course of intervention. This shift could effect the outcome of the measures.

Due to the medical diagnosis which identified participants, random selection was not possible. The mothers were identified when they appeared for follow-up through the pediatric outpatient clinics. Recruitment took place in two stages. Mothers were identified by doctors, nurses, social service workers of infants diagnosied with FTT. Those who follow up in the clinic were contacted and given a brief statement about the purpose of the research and a post card for response. The mothers indicated by mail or telephone their willingness to participate in the study. Assistance in identifying these mothers was solicited from those who had frequent contact with mothers of infants.

The entire sample was recruited through clinic contact with the pediatrician or nurses. Those refusing to participate were not included. In the second stage of the process, the comparison group of mothers were recruited in the same manner and from the same pediatric populations. A total of 50-60 mothers were approached to participate, and 25 were recruited for each group.

Characteristics of Mothers

Mothers who participated were between the ages of 17 and 36, although only one was 17, she was matched with an 18-year-old in the control group. Most participants were between the ages of 24 and 30 (see Table 1.1).

Table 1.1. Age of Participating Mothers

Age (N=50)	Code	Absolute Frequency	Relative Freq.(Pct)	Adjusted Freq. (Pct)	Cum Freq.(Pct)
16-23 years	2	6	12.0	12.0	12.0
24-30 years	3	30	60.0	60.0	72.0
31-older	4	14	28.0	28.0	100.0
	TOTAL	50	100.0	100.0	

The mothers were matched as closely as possible on educational levels. Overall, 50 percent were high school graduates. Two in the FTT group had approximately two years of college (see Table 1.2).

Table 1.2. Education of Participating Mothers

(N=50) Education Level	Code	Absolute Frequency	Relative Freq.(Pct)	Adjusted Freq. (Pct)	Cum Freq.(Pct)
Completed High School	1	25	50.0	50.0	50.0
Didn't complete High School	2	10	20.0	20.0	70.0
College Graduate	3	15	30.0	30.0	100.0
	TOTAL	50	100.0	100.0	

Participants were matched on socioeconomic levels of the household. Many of the FTT mothers who reported incomes below $10,000 were on ADC or some form of state assistance. Overall, 50 percent had income levels of $10,000 or below (see Table 1.3).

Table 1.3 Income Level of Participating Mothers

Income Levels	Code	Absolute Frequency	Relative Freq.(Pct)	Adjusted Freq.(Pct)	Cum Freq.(Pct)
$10,000-below	1	25	50.0	50.0	50.0
10,000-15,000	2	6	12.0	12.0	62.0
16,000-25,000	3	10	20.0	20.0	82.0
26,000-above	4	9	18.0	18.0	100.0
	TOTAL	50	100.0	100.0	

Only four participants were identified with the ethnic status Black American. Two Black American FTT mothers were matched with two Black American control group mothers. The rest were identified with the ethnic status Caucasian.

Clinical Sites

Michigan State University Primary Care Pediatric Clinic

The Michigan State University Primary Care Pediatric Clinic is an outpatient clinic located on the campus. It serves individuals from the greater East Lansing-Lansing area. The clinic's population is representative of all socioeconomic levels, ranging from families of MSU professors to the working class families of Bath, Michigan. A varied sociocultural population also is served by the clinic. The MSU clinic is not hospital based but has affiliate relationships with most of the inpatient hospitals in the Lansing area. The Primary Care Clinic is staffed by pediatricians in the College of Osteopathic medicine. Other staff include a clinical nurse specialist, one registered nurse, two licensed practical nurses, and one psychologist. Pediatric residents are also rotated through the clinic.

The MSU outpatient clinic's primary purposes are the evaluation and treatment of acute short-term illness, diagnosis, and referrals to other specialists and agencies. The MSU Primary Care Pediatric Clinic treated approximately 50 failure to thrive cases during 1983.

Pontiac General Hospital Ambulatory Pediatric Clinic

Pontiac General Ambulatory Services is a hospital-based outpatient pediatric clinic in Pontiac, Michigan. It is an inner-city clinic-hospital that provides services to the surrounding areas of Detroit and Pontiac. Half the population serviced consists of Medicaid recipients and the other half is assessed on ability to pay. Initial evaluation, diagnosis, or short-term illness treatment is done in the clinics. The clinic population is approximately 40 percent black, 60

percent white. The clinic services a large number of middle-low income families.

The clinic staff consists of two clinical nurses, one registered nurse, 2 to 3 licensed practical nurses, and one social worker. The hospital pediatricians rotate as attendings along with pediatric residents.

St. Lawrence Hospital

St. Lawrence Hospital Outpatient Pediatric Clinic is a hospital-based clinic in downtown Lansing, Michigan. It serves the city and neighboring rural areas. Half the serviced population is Medicaid recipients, and the other half is assessed on ability to pay.

The clinic staff consists of one clinical nurse specialist, one registered nurse, and pediatric residents who rotate for training.

Although the majority of the cases were from these three clinics, other agencies were instrumental in identifying nonorganic failure to thrive cases. Those included: Child Health Services of Lansing, Michigan, the Visiting Nurses Association of Metropolitan Detroit, and private pediatricians.

Measures

Minnesota Multiphasic Personality Inventory

As was clear from the review of the literature, the Minnesota Multiphasic Personality Inventory (MMPI) has not been administered to mothers of FTT infants. The MMPI is a self-administered test designed to provide objective assessment of major personality characteristics. The group form of the MMPI was used in this investigation. The subject is asked to mark as true or false the 550 items on the MMPI dealing

with psychiatric, psychological, neurological, and physical symptoms. A number of items appear innocuous. Thirteen scales make up the MMPI, plus four special clinical scales, three of which are referred to as validity scales. The major scales important in coding the personality profile are numbered to identify some of the salient profile characteristics, especially with respect to pattern and type. The interpretation of the pattern varies with respect to scale elevations.

Validity: The Validity Scales

The function of the validity scales is to indicate factors which permit one to accept the clinical profile with some confidence or which suggest caution in interpretation. The validity scales are L (lie), F (fake), and K, which is a correction scale for other clinical scales. The clinical scales are: Hs (Hypochondriasis), D (Depression), Hy (Hysteria), Pd (Psychopathic deviate), MF (Masculine-feminine), Pa (Paranoia), Pt (Psychotenia), Sc (Schizophrenia), Ma (Hypomania), So (Social), A (Anxiety), R (Repression), Es (Ego Strenth), and MAC (Substance Abuse). Research on the MMPI has indicated good face validity, content validity, and construct validity. Content validity is the degree to which the items represent the content they are designed to cover. Construct validity is the degree to which the inventory measures the construct of personality variables.

The group form also has good validity. In the booklet (group) form, the items are arranged in different order from the board form. One through 366 in the booklet are working items, which means they appear on one or more of the clinical or validity scales in the profile. Typically, with the booklet version, the subjects are only

asked to complete up to item 420 and stop, omitting two K scales and twenty items from scale 0.

The earlier group version of the booklet was administered to military personnel in 1944. Several changes have been made since that time. The current group forms appear in either booklet or tape recorded version. The most widely used is the standard booklet version, published in 1947 by the Psychological Corporation. Special booklet versions have been developed for use with Peace Corps trainees.

Research Using the Minnesota Multiphasic Personality Inventory

Research using the MMPI on parents of disturbed children has become more common in recent years. There have been few controlled psychodiagnostic studies of parents. In research on abused parents using the MMPI, Paulson et al. (1976) found that significant elevations on the Pd (Psychopathic deviate) and Ma (Hypomania) scales differentiated between abusive parents and a control group. Griswold and Billingsley (1969) found that female abusers obtained high scores on the subscale associated with psychosis on the MMPI.

Tabulation of the frequency of obtained significant differences across seven studies (Adrian, Vacchiano, and Gilbert, 1966; Goodstein and Rowley, 1961; L'Abute, 1960; Lauterbach, London, and Bryan, 1961; Liverant, 1959; Marks, 1961; Walking, Quast, and Lawton, 1966) revealed that mothers of behaviorally disturbed children were uniformly found to have higher mean scores on Scales D and Hy; five to six studies documented higher mean scores of Hs, Pd, and Pa; and four studies found higher mean scores for scale Pt and Sc.

Reciprocal two-point code types are frequently the basis for profile classification in MMPI interpretive systems (Lachar, 1974a). Both Markes (1961) and Waling (1966) found that the 3-4/4-3 code was among the most common profile type for both mothers and fathers whose children were disturbed. Other frequent code types reported included 1-3/3-1, 0-2/2-0, and 2-4/4-2 for mothers; and 0-2/2-9, 1-3/3-1, 5-9/9-5, and 3-5/5-3 for fathers whose children were disturbed.

Dean and Jacobson (1982) compared MMPI profiles for the parents of 90 preadolescents diagnosed as having conduct disorders, learning disability, or personality problems. Their findings revealed that mothers whose children were diagnosed with conduct disorder presented an introverted, depressed, and interpersonally sensitive picture. Mothers of children with diagnosed learning disability and other personality problems were seen as defensive with reports of physical complaints compared to mothers of children with conduct disorders. The results for fathers for all three groups were unremarkable, with the exception of the elevation in depression for fathers of children with conduct disorders.

Another study focused on parental loss using the MMPI clinical scales. Birtchness (1978) studied early parent death in association with MMPI personality profiles, comparing 29 early bereaved depressed subjects (age 0-9 years when parent died) with 58 depressed subjects whose parents were alive until a later age (subject was at least age 25 when parent died). The results indicate that hypochrondriasis, associated with early father death, and paranoia, associated with both mother and father death, were the most affected scales. Elevations on the F scale were also associated with mother death. By comparison,

these events had no effects on the MMPI scores of 22 nondepressed subjects.

In a replicated study conducted by Miller and Keirn (1978), examinations of MMPI profiles of parents of emotionally distrubed, behaviorally disturbed, mentally retarded, and nonclinic children were compared. There were 50 families in each group. The findings indicated that elevations on the MMPI reflected parents' stress as a result of having a disturbed or handicapped child. The parents of mentally retarded children did not differ from the parents of emotionally and behaviorally disturbed children.

The Response to Loss Scale

The Response to Loss Scale was developed based on the theoretical work of Freud (1917), Lindeman (1944), Eagel (1962), Mavis (1975), Parkes (1965), Bowlby (1969), and Schneider (1981). The scale was operationalized by Deutsch (1982). The original instrument, a 268-item scale, was judged by researchers as too long. A shorter form was developed based on the grieving phase of mourning and titled The Response to Loss Instrument.

The response to loss scale was developed to measure grief. The variables are organized along six dimensions of the mourning process: physical, emotional, cognitive, spiritual, behavioral, and imaginative. The revised instrument is a 46-item paper and pencil test. The behavioral component has been dropped.

Reliability

Reliability as measured by Cronbach's alpha was .95 for the total scale, between .88 and .73 for the subscales. Split-half reliability

was also .95 for the response to loss scale. Interscale correlation ranged from .80 to .55.

A level of internal consistency of .95 is high for a self-report instrument. In addition, subscale correlations ranged from an alpha of .88 for the cognitive scale to an alpha of .73 for the behavioral scale. Therefore, there appears to be reasonable consistency with the exception of the behavioral scale, which was dropped from further analysis due to its low reliability.

Validity

The validity as well as reliability of the response to loss instrument have enough support in terms of psychometric properties to recommend further use in clinical settings. The response to loss scale has construct validity. However, according to Deutsch (1982), the score may be sensitive to personality variables such as dependency and vulnerability to loss; although this has not been tested, the present research may lend support to this view. In addition, the instrument has shown valid in dealing with groups who have experienced severe depression, who defend against loss by separating emotionally and not cognitively, and who respond equally with both emotional and cognitive defenses.

Item Development

Items for the Response to Loss Instrument were developed from Schneider's (1980) work. He proposed five dimensions of the mourning process: physical, emotional, intellectural, spiritual, and behavioral. A sixth dimension, imaginative, was added by this researcher. The

instrument was developed to differentiate grief from depressive response to loss.

The dimensions used to organize the phases of the mourning process proposed by Schneider and others are as follows.

1. Cognitive dimension. Aspects of response to loss which involve information processing about any experiences associated with the loss are included in this dimension.

2. Physical dimenstion. The vegetative response of appetite for food and sex are included here, in addition to responses affecting sleep patterns and energy levels.

3. Imaginative dimensions. This aspect contains all responses involving the use of imagination, including the presence of the dead or image associated with loss.

4. Emotional dimension. All emotions associated with the loss are included in this dimension.

5. Spiritual dimension. This dimension includes beliefs in life after death experiences. It includes existential concerns of responsibility and human limitations. This dimension does not include experiences associated with participation in organized religion.

The Revised Children's Reports of Parental Behavior

The Revised Children's Reports of Parental Behavioral Inventory (CRPBI) is a 56-item paper and pencil test designed to investigate children's child-rearing behavior. The original inventory consisted of 26 ten-item scales that the child was asked to complete (Schaefer, 1965a). The revised version is shorter and easier to administer. It consists of one 16-item scale and five 8-item scales and has been found

to approximate the accuracy of the original instrument (Burgee and Armentrout, 1971a).

The child indicates whether the parent is "like," "somewhat like," or "not like" each of the items. In this investigation the mothers were referred to as "adult children." Separate but identical forms are used for the mother and father, but in this study the form was used for the mother only. Due to the identification in the literature of the mother as primary care giver, the CRPBI identifies three orthogonal factors that describe parental child-rearing behaviors: acceptance versus rejection, psychological autonomy versus psychological control, and firm control versus lax control.

Reliability

According to a study by Margolies and Weintraud (1977), the CRPBI is highly reliable. The revised form has consistently yielded high reliability over a wide range of populations: American college students (Armetrout and Berger, 1972a; Cross, 1969); American Children in grades four through eight (Armentrout, 1971b); Wallon high school students (Renson, Schaefer, Levy, 1968); Canadian college students (Schludermann and Schludermann, 1970); and Hutterite adolescents (Schludermann and Schludermann, 1971).

In an analysis of factor structures (Margolies and Weinstraub, 1977), Factor I (acceptance versus rejection) revealed that almost all items fell on the father form, but on the mother form the factors showed equal success with the original. Factor II (psychological autonomy versus psychological control) revealed that both forms were approximately as reliable as the original. Factor III (firm versus lax control) results were similar to those for Factor II.

Research on the CRPBI has continued in terms of factor analysis. Graybill and Gabel (1978) conducted such research with preadolescents. The analysis resulted in three factors: psychological autonomy versus psychological control, acceptance versus rejection, and inconsistent discipline.

In another factor analysis study, Kojima (1975) found that the interbattery structures were highly symmetric between children and their parents' behaviors as reported by the parents themselves. This suggested that the factor structures on the CRPBI and independent within battery structures for parents and children were similar. This further suggested that factor structures on the CRPBI were not merely the reflection of the describer's tendencies.

A more recent factor analysis study on the CRPBI conducted by Teleki, Powell, and Dodder (1982) revealed three factors for children's report of married mothers, married fathers, and divorced fathers. Two factors emerged for children's reports of divorced mothers. Furthermore, children of divorced parents did not differ on acceptance and lax discipline as much as other children.

In addition to research regarding factor analysis on the CRPBI, studies assessing personality variables also have increased. Graybill (1978) examined the relationship of maternal child-rearing behaviors to children's self-esteem. Fifty-two boys and girls, ages 7-15 years, rated their mother's child-rearing behaviors and completed a self-esteem inventory. The children who viewed their mothers as using psychological pressure techniques to discipline them had low self-esteem, and children who viewed their mothers as being accepting had high self-esteem.

In another study, Crook, Roskin, and Eliot (1981) examined parent-child relationships and adult depression using the CRPBI. The scores were compared for 714 hospitalized depressed patients 16 to 70 years old and 387 normal adults. The groups were also compared on other informants' ratings of parental behavior along the acceptance-rejection and autonomy-control dimensions. The results reported differences between the two groups. This suggests that depression in adult life may be related to parental rejection and control through techniques such as derision, negative evaluation, and withdrawal of affection during childhood. Maternal rejection was found to be closely associated with depression in females more than in males, and the effect was the same for black and white subjects. Among blacks, parental rejection was more closely associated with depression in males than in females, whereas among whites it was more related to depression in females than in males. In short, feelings of personal worthlessness and inferiority characteristic of depression may be significantly linked to the early parent-child relationship.

In summary, the CRPBI has been found reliable in terms of its clinical utility and research adaptability.

Validity

The revised CRPBI, as mentioned above, has construct validity. In terms of factor structure, the revised CRPBI has been found to correlate highly with the original factors developed by Schaefer (1965a).

Overview of Retrospective Parenting Scales

Goldin (1969) reviewed children's reports of parental behaviors and attitudes from 1931 to 1965. He compared two instruments.

Schaffer's Children's Reports of Parental Behavior Inventory (CRPBI) (Schaffer, 1965a, 1975b) and Seigelman's Parent-Child Relationship Questionnaire (PCR) (Roe and Seigelman: Seigelman, 1965). He concluded that the differences between the orthogonal factors of the two scales were "more apparent than real." He further concluded that Seigelman's factors better explained the results of the reviewed studies.

Goldin found that Schaffer's factors of acceptance versus rejection were almost identical to Seigelman's factor of love. Schaffer's factor of acceptance-rejection referred to praise, affection, sharing, support, and positive evaluation at one end of the continuum and detached, hostile treatment at the other end. Seigelman's love factor indicated support, affection, praise, and participation.

A similarity also existed between Seigelman's demanding factor and Schaffer's factor of psychological control versus psychological autonomy. The latter refers to behaviors that tend to facilitate or damage a child's individuation from his/her parent. Seigelman's demanding factor denoted parental behaviors that were intrusive, controlling, and protective.

Golden tested a number of hypotheses about retrospective parenting scales, using the reviewed studies as data. His hypotheses were:

(1) Children perceive both parents favorably;

(2) Girls perceive their parents as less controlling and more accepting than do boys;

(3) The amount of control and punishment demonstrated by the fathers compared to the mothers is differentially perceived during development;

(4) Parents from low socioeconomic backgrounds are perceived as less accepting and more controlling; and

(5) Maladjusted normals, mental health center patients, and delinquents perceive their mothers as more loving than their fathers.

Goldin suggests that if further research is done, the investigator should consider these points in examining the scales: (1) the relationship between perception of parental behavior and age of the child; (2) the interaction of sex by age on reports of parental behavior is confusing and demands further investigation; (3) further study of the relation between retrospective reports of parental behavior is needed, especially in concrete operational behavioral forms; (4) parental characteristics and behaviors such as education, age, and intellect should be related to the child's report; and (5) the conditions which elicit the various parental behavior measures should be compared.

While some of these suggestions are meaningful to the investigation, they also have relevance to other research.

Operational Definitions

Nonorganic failure to thrive infant

For the purposes of this study, a nonorganic failure to thrive infant is one who: (1) is full term at birth; (2) has not demonstrated physical cause for growth failure; and (3) falls progressively below the third percentile in weight and often height according to the normal standard curve.

Mothers

The mothers in this study are the natural mothers of nonorganic failure to thrive infants and the identified controls. The mothers in

the control group were matched according to age, education, and socio-economic backgrounds. The were identified as receiving no previous psychotherapeutic intervention prior to this study.

Loss

Loss refers to the absence of people, places, ideals, or objects assessed as meaningful or valuable, either by death or for other reasons.

Procedure for Collecting Data

To identify mothers as the focus of the research project, the diagnosis of the infant of nonorganic failure to thrive was used.

All mothers with children under three years of age who were followed up in the outpatient clinics with the diagnosis of nonorganic FTT were eligible for inclusion in this study. Infants in the control group were matched with FTT groups on race and age.

All cases of FTT were identified through plotted progressive failure in weight and height on the Boston Growth Standards over 3-4 visits to the outpatient clinic.

The controls were also mothers of pediatric patients with short-term medical illness diagnosis such as pneumonia, gastrointestinal problems and so forth. Mothers of children failing to thrive and control mothers were matched on a one-to-one basis in terms of race, age ranges, and range of socioeconomic status.

Data were collected over six months. The mothers were asked to complete three self-report measures. All mothers were voluntary participants, and informed consent was obtained. After the measures were completed, mothers were reimbursed $10.00 for their time in completing the measures.

Three mothers of nonorganic FTT infants did not agree to participate. One was involved in protective service and court issues surrounding her infant, and her attorney recommended she not take part. Approximately 20 mothers from the initial list were not eligible because they were foster mothers. Concerted efforts were made to recruit only those mothers who had their infant at home.

All of the mothers identified in the FTT group had one infant who carried this diagnosis, although one mother had two children diagnosed as FTT.

Data were collected from mothers of nonorganic FTT infants using the Minnesota Multiphasic Personality Inventory (MMPI), the Revised Children's Reports of Parental Behavior Inventory (CRPBI), and the Response to Loss Scale (RLS). Mothers were approached during the clinic visit, and the procedures and instruments were explained. They were asked to return the measures by mail.

Mothers were given a brief explanation of the study and reasons for completing many of the items on the inventories and scales. The total time required to complete the measures was approximately two hours. Mothers agreed to participate prior to data collection. Specific identifying information was not recorded on the answer sheets, only a code cross-referenced with names. The names were discarded, once a thank you note was sent. Age, education, and income levels were stated in ranges (for example, under 20, 20-25, 26-30) which the mothers were asked to check. The answer sheets were numbered for for coordination of the three measures given for an individual mother.

Statistical Hypotheses

The following hypotheses and subshypotheses were tested in this study.

General Hypothesis - Minnesota Multiphasic Personality Inventory

Null hypothesis: Selected scales of the Minnesota Multiphasic Personality Inventory will not discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Alternative hypothesis: Selected scales of the Minnesota Multiphasic Personality Inventory will discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Subhypotheses related to the MMPI

Null hypothesis: Mothers of infants who fail to thrive will not exhibit a character disorder personality profile on the Minnesota Multiphasic Personality Inventory compared to mothers of infants who thrive.

Alternative hypothesis: Mothers of infants who fail to thrive will exhibit a character disordered personality profile on the Minnesota Multiphasic Personality Inventory compared to mothers of infants who thrive.

Null hypothesis: Mothers of infants who fail to thrive will not exhibit a psychotic personality profile on the Minnesota Multiphasic Personality Inventory compared to mothers of infants who thrive.

Alternative hypothesis: Mothers of infants who fail to thrive will exhibit a psychotic personality profile on the Minnesota Multiphasic Personality Inventory compared to mothers of infants who thrive.

General Hypothesis - Children's Reports of Parental Behavior Inventory

Null hypothesis: The Revised Children's Reports of Parental Behavior Inventory items will not discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Alternative hypothesis: The Revised Children's Reports of Parental Behavior Inventory items will discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Subhypotheses related to the CRPBI

Null hypothesis: The Revised Children's Reports of Parental Behavior Inventory, Acceptance items will not discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Alternative hypothesis: The Revised Children's Reports of Parental Behavior Inventory, Acceptance items will discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Null hypothesis: The Revised Children's Reports of Parental Behavior Inventory, Childcenteredness items will not discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Alternative hypothesis: The Revised Children's Reports of Parental Behavior Inventory, Childcenteredness items will discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Null hypothesis: The Revised Children's Reports of Parental Behavior Inventory, Psychological Autonomy, Control through Guilt items, will not discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Alternative hypothesis: The Revised Children's Reports of Parental Behavior Inventory, Psychological Autonomy, Control through Guilt items, will discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Null hypothesis: The Revised Children's Reports of Parental Behavior Inventory, Psychological Autonomy, Control through Instilling Anxiety items, will not discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Alternative hypothesis: The Revised Children's Reports of Parental Behavior Inventory, Psychological Autonomy, Control through Instilling Anxiety items, will discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Null hypothesis: The Revised Children's Reports of Parental Behavior Inventory, Lax Discipline items will not discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Alternative hypothesis: The Revised Children's Reports of Parental Behavior Inventory, Lax Discipline items, will discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Null hypothesis: The Revised Children's Reports of Parental Behavior Inventory, Nonenforcement of Rules items, will not discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Alternative hypothesis: The Revised Children's Reports of Parental Behavior Inventory, Nonenforcement of Rules items, will discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

General Hypotheses - Response to Loss Scale

Null hypothesis: The Response to Loss Scale items will not discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Alternative hypothesis: The Response to Loss Scale items will discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Subhypotheses related to RLS

Null hypothesis: The Response to Loss Scale, Cognitive Dimension items, will not discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Alternative hypothesis: The Response to Loss Scale, Cognitive Dimension items, will discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Null hypothesis: The Response to Loss Scale, Physical Dimension items, will not discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Alternative hypothesis: The Response to Loss Scale, Phsycial Dimension items, will discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Null hypothesis: The Response to Loss Scale, Imaginative Dimension items, will not discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Alternative hypothesis: The Response to Loss Scale, Imaginative Dimension items, will discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Null hypothesis: The Response to Loss Scale, Emotional Dimension items, will not discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Alternative hypothesis: The Response to Loss Scale, Emotional Dimension items, will discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Null hypothesis: The Response to Loss Scale, Spiritual Dimension items, will not discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Alternative hypothesis: The Response to Loss Scale, Spiritual Dimension items, will discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Design

The general design of the study is descriptive. The purpose is to explore whether mothers of FTT infants differ on personality variables from mothers of infants who thrive as measured by the MMPI and their perceptions of their parents' behaviors. Furthermore, the degree of loss experienced by mothers of FTT infants compared to mothers of infants who thrive is explored.

It is apparent from the review of the literature that a sound theoretical framework is needed to determine the personality characteristicis of mothers of FTT infants. One may build upon existing theory through descriptive as well as predictive methodology. Descriptive research is appropriate to this investigation because of its flexibility and because it has heuristic value. It is hoped that this study will generate further questions, broaden our knowledge about personalities of mothers of FTT infants, and suggest new ways to investigate the problem. Rather than address cause-effect relationships, this study attempts to identify and describe predictive factors related to mothers of FTT infants.

Design I

The first design addresses the general hypotheses and is a discriminate analysis. The discriminating variables are identified by

each score on each of the scales of the MMPI (see Figure 2.1). The application of this statistical technique measures the success with which the variables actually discriminate when combined into the discriminant function. The best subset will be determined in predicting which scales discriminate between the two groups. Separate discriminate analyses will be done on the Revised Children's Reports of Parental Behavior Scale dimensions and the Response to Loss Scale subfactors (see Figures 2.2 and 2.3). Combined discriminant analysis was done on all measures for greater power.

Design II

The second design is used in addressing H_a to determine the character disorder profile for each group. The computational formula used by Gough (1965) will be employed to determine the character disorder profile (see Figure 2.4). This design may also be helpful in confirming Fischoff's assertion that mothers of FTT infants demonstrate character disorder symptoms. In addition, Goldberg's index for discriminating psychotic and neurotic MMPI profiles will be computed for each mother.

Goldberg (1965) derived a linear regression equation for discriminating psychotic and neurotic MMPI profiles. The Goldberg index is related to level of maladjustment, with higher values indicating greater maladjustment. The Goldberg Index is L + Pa + Sc - Hy - Pt.

A cut-off of 45 is the best discriminator between psychotic and neurotic.

Other sets of rules for classifying profiles diagnostically have been developed by Henricks (1964, 1966) Meehl and Dahlstrom (1960),

Peterson (1954), and Taulbee and Sisson (1957). Goldberg's single linear combination seems to work just as well as the others, which are more complicated and time consuming.

Following computation of the character disorder profile and the Goldberg Index for each mother, a t test will be used to determine differences between the two groups. The significant probability is computed at the .05 level (see Figure 2.5).

Design III

This design will be a regression equation on the MMPI selected scales, Response to Loss subscales, and the Children's Report of Parental Behavior Inventory dimensions. The intent is to explain further the discriminating scales on the three measures selected through the discriminate procedure in Design I (see Figure 2.3).

Design IV

This design will address the subhypotheses. It will be a correlation matrix on all of the subscales, factors, and dimensions of the three measures. This is done to explore the interrelationship of all the subscales that are candidates for further analysis.

Figure 2.1. Discriminant Analysis
MMPI Scales

Predictor Variables		
MMPI Scales		
?		
L		
F		
K		
Hs		
D		
Hy		
Pd		
Mf		
Pa		
Pt		
Sc		
Ma		
Si		
A		
R		
Es		
MAC		

Figure 2.2. Discriminant Analysis of CRPBI

Predictor Variables	Wilks Lambda	Significance
CRPBI		
Factor I		
1. Acceptance		
2. Childcenteredness		
Factor II		
3. Psychological Autonomy		
4. Psychological Control		
Factor III		
5. Firm Control		
6. Nonenforcement of rules		

Figure 2.3. Discriminant Analysis of RLS

Predictor Variables	Wilks Lambda	Significance
RTL		
Dimensions		
Physical		
Emotional		
Imaginative		
Spiritual		
Cognitive		

Figure 2.4. Character - Disorder Sign

$$CdS = Pd - \frac{Pa + Sc}{2}$$

Goldberg Index

L+Pa+Sc-Hy-Pt

Figure 3.5. T Test Comparing Character Disorder and Psychiatric vs Neurotic Profile Scores of Mothers of FTT Infants and Mothers of Infants who Thrive

Groups	N	Mean	SD	t-value	Two-tail Probability
Mothers FTT					
Mothers Thrive					

Analysis

For Design I, data are analyzed using discriminant analysis. The scores obtained from all scales, factors, and dimensions are used. T scores were used for the MMPI. Raw scores were used for the RLS and CRPBI. The criteria for controlling stepwise selection in the discriminate analysis are: minimum Wilks' lambda, minimum Mahalanobis distance between groups, largest minimum between-groups F, largest increase in average multiple correlation, and largest increase in Ruo 5 V.

The maximum number of functions which can be derived is either one less than the number of groups or equal to the number of discriminating variables. Once the discriminant functions have been derived, analysis and classifications are done.

The analysis provides several tools for interpreting the data. Among these are statistical tests for measuring the success with which the discriminatory variables actually discriminate.

The weighting coefficients can be interpreted as in multiple regression or factor analysis. This serves to identify the variables which contribute most to differentiating along dimensions.

The classification technique is used after the initial computation. Once the variables are found which discriminate group membership, a classification question is derived. If characteristics are found that predict well between groups of mothers, we can use these to predict the likelihood that mothers of FTT infants will have some disturbed personality characteristics. The procedure for classification often involves the use of linear combination of the discriminating variables for each group. This yields a probability of membership in the respective groups.

The SPSS discriminant subprogram provides two measures for determining the importance of latter discriminant functions. These measures are the relative percentage of the eigen value associated with the function and the discriminating power in the original variables (Wilks' lambda).

The eigen value is a special measure computed in the process of determining the discriminant function. It measures the relative importance function. The lambda is an inverse measure of the discriminating power and can be transformed into a chi-square statistic for an easy test of statistical significance.

The coefficients for the discriminant analysis are determined from standard form (Z scores), in this case T scores transformed into Z scores. The score from one function will have a mean of zero and a standard deviation of one. Thus, the single score on the scales dimension or factors will represent the number of standard deviations that case is away from the mean for all cases on a given discriminant function.

The group mean will be determined for each group. This will tell us how far apart the groups are along that dimension.

For Design II, Gough's (1965) and Goldberg's (1965) computations for determining character disorder and psychotic versus neurotic profiles are employed. Following this, an independent t test is used to determine respective differences between groups in terms of the character disorder and psychotic versus neurotic profile. If this determines that mothers of FTT infants have character disorder profiles, Fischoff's assertion will be confirmed. To determine character disorder and psychotic and neurotic profiles, selected scales are used. It would be more interesting if the scales used to determine character disorders were the same scales that were identified in the discriminate analysis.

For Design III a regression equation is used to analyze the selected factors for each scale. The following formula will apply:

$$\frac{R_c^2 - R_f^2/df_1}{R_f^2 \ / \ df_2} \quad F_{df,\ df_2}.$$

This is done to obtain a higher R^2, a measure of "goodness" for the discriminating variables, and maximum prediction for group membership (the largest R^2 with fewest subscales). The procedure is called the R^2 delete, which will remove all those scales from Design I that are least likely discriminators and not germane to the clinical observation of mothers of FTT infants compared to mothers of infants who thrive. For example, the literature points to scales 2, 4, and 9 on the MMPI as having some degree of importance in describing how mothers of FTT infants appear clinically. These scales, if not identified as discriminants, were included in the regression equation.

Design IV is used for further analysis of the subhypotheses. This will be a correlational matrix to determine the interrelationship among the three measures used (MMPI, CRPBI, and RLS). The MMPI t scores will be entered for each scale per mother. The CRPBI and RLS raw scores will be derived for each mother. An overall mean and standard deviation will also be derived for each measure. The matrix will show the correlation of each measure with the other measure(s).

The different statistical procedures outlined here allow for flexible interpretation and go farther than the shot-gun approach of using only discriminating variables.

The following discriminant functions will be presented in the Results section: Summary Table of stepwise discriminant analysis, classification function coefficients (Fisher's Linear Discriminant Functions), Canonical Discriminant Functions, and Classification Results Table.

Selection of Variables for Analysis

The variables used for inclusion in the discriminant analysis are the 18 clinical scales and 3 validity scales from the MMPI; the 46 items of the Response to Loss Scale and the type and time variable; the 56 items from the Children's Report of Parental Behavioral Inventory; the Gough character disorder formula; and Goldberg's Index.

Discriminant analysis was performed on each measure using items/ subfactor/dimension/ and scales. Overall, subfactors, dimensions, and scales were the focus of the hypothesis testing, but individual items will be examined to obtain an idea of the discriminating power of each. The item may be useful for future research or in developing a separate measure for screening predictive high risk infants.

The variables on all measures were selected for inclusion in the discriminant analysis on the basis of their discriminating power. In this study, the full set of 131 variables contained information about the groups' differences, and some of the variables were not very useful in discriminating among the groups. By sequentially selecting the "next best" discriminator at each step, a reduced set of variables was found which is as good as, or better than, the full set.

The "stepwise method" of selection begins by choosing the single variable which has the highest value on the selection criterion. This variable is then paired with each of the other available variables, one at a time, and the selection criterion is computed.

Classification Function Coefficients (Fisher's Linear Discriminant Functions)

Fisher (1936) was the first to suggest that classification should be based on a linear combination of discriminating variables. The linear combination he proposed was used to maximize group differences while minimizing variation within the groups. An adaptation of Fisher's proposed linear combination led to the classification function. This is the formula:

$$h_k = b_{k0} + b_{k1} X_1, + B_{k2} X_2 + ...b_{kp} X_p,$$

where h_k is the score for group K and the b's are coefficients that need to be derived. A case is classified based on the highest score (largest h). The coefficients for these classification functions are derived with the following formula:

$$b_{ki} = (ni - g) \sum_{j=1}^{P} a_{ij} X_{jk},$$

where b_{ki} is the coefficient for variable i in the equation corresponding to group k, and aij is a factor from the inverse of the within-groups sum of cross-products matrix (w). The classification function coefficients are not usually interpreted, they lack intrinsic value because they are arbitrary numbers which relate to the case most closely associated with the group on which it has the highest score.

Canonical Discriminant Function

In the Results section the canonical discriminant tables will be presented for each set of variables identified as "best set" of discriminating variables.

There are three measures used for judging the importance of discriminant functions. The first is the relative percentage of the eigen value associated with the function. Since there is no specific rule for deciding when the eigen value is too small to accept, all functions will be reported. The second measure is the discriminant function's associated canonical correlation. It explains how closely the function and the "group variable" are related, which is another measure of the function's ability to discriminate among the groups. If the logic is viewed in reverse, one can interpret the canonical correlation as the proportion of variance in the discriminant function explained by the groups. The third criterion for eliminating discriminant functions is to perform a test for the statistical significance of discriminating information not already accounted for by the earlier functions. For this purpose Wilks; Lambda is computed, an inverse measure of the discriminating power in the original varaibles which has not yet been removed by the discriminant functions; the larger is Wilks' Lambda, the less information remains regarding the other variables. Wilks; Lambda is then transformed into a chi-square statistic for an easy test of statistical significance.

The positive or negative sign on the canonical discriminant denotes its influence on the group.

As variables are selected for inclusion, some previously selected may lose their discriminating power. This happens because the information they contain about the group differences becomes available in the other included variables.

Classification Results

Discriminant analysis is also a powerful classification technique. By classification is meant the process of identifying the likely group membership of a case when the only information known is the case's values on the discriminating variables. Classification is also used to test the adequacy of the derived discriminant function. By classifying the cases used to derive the discriminant functions in the first place and comparing predicted with actual group membership, one can empirically measure the success of discrimination by observing the proportion of correct classification.

Classification is achieved through the use of a series of functions, one for each group. These functions are derived from the pooled within-groups covariance matrix and the centroids for the discriminating variables. The resulting classification coefficients are multiplied by the raw variable values, summed together, and added onto a constant. The equation for one group would appear as:

$$C_i = c_{i1} V_1 + c_{i2} V_2 + \ldots\ldots c_{ip} V_p + C_{i0},$$

where c_i is the classification score for the group 1, the c_{ij}s are the classification coefficients, c_{i0} is the constant, and the Vs are the raw scores on the discriminating variables.

Under the assumption of a multivariate normal distribution, the classification scores can be converted into probabilities of group membership. The rule of assigning a case to the group with the highest score is then equivalent to assigning the case to the group with the greatest probability of membership. The purpose of classifying these classes is to see how effective the discriminating variables are. If

a large population of misclassification occurs, then the variables selected are poor discriminators. There is no lowest proporation of correct classifications established to determine success in discrimination.

In this study, the best set of variables discriminating between the two groups of mothers will be presented. In addition, the classification result table will be presented for each variable.

Discriminate Analysis

Violation of Assumptions

Discriminant analysis is a robust technique which can tolerate some deviations. The two most difficult assumptions to meet are those of a multivariate normal distribution on the discriminating variables and of equal group covariance.

The multivariate normal distribution is important for the test of significance, but the consequence is some reduction in efficiency and accuracy. The normality assumption is important for classification based on the probability of group membership.

When the group covariances are not equal, there is a tendency to get distortion in the discriminant functions and the classification equations.

The other statistical procedures that the dependent variable is normally distributed. This is usually achieved by random selection, not applicable here due to the medical diagnosis criterion and the limited numbers. However, both the f test and t test are robust with respect to violations of this assumption if N approaches 30 or more. In addition, the assumption of homogeneity of variance is robust with

respect to violations if the groups are equal, and in this study each group equaled 25.

The third assumption is that of independence, which was met. The independence will be further managed statistically by using the n of groups rather than the n of subjects, in this case mothers, as the unit of analysis.

Potential Limitations

The medical diagnosis used to determine group membership makes random sampling difficult. The choice of this procedure affects the external validity of the study. However, generalization to the larger population is made using the Cornfield-Tukey Bridge argument. The sample studied is described in detail, and characteristics of mothers are matched carefully to facilitate generalizations. All subjects were volunteers, and research has demonstrated that those who volunteer differ in certain characteristics from those who do not.

In addition to sampling problems, there are possible limitations in the instruments used and procedures for data collection. Currently, there is some controversy regarding the validity of self-report measures, which are accurate to the degree that self-perceptions are accurate. The MMPI does include scales that would determine this to some extent. The items on the MMPI, RLS, and the CRPBI are sensitive to social desirability. Despite the possible drawbacks of self-report measures, it is anticipated that accurate information has been obtained.

CHAPTER IV

ANALYSIS OF THE RESULTS

This chapter presents an analysis of the research data. Each hypothesis is restated, and the relevant data and results are discussed. The hypotheses are categorized by design. Those associated with the mother's personality are given first, followed by those dealing with retrospective reports from mothers of their early experiences, and then those dealing with the mother's loss. Finally, supplementary analyses related to the hypotheses are given.

Personality Variables Analysis

Null hypothesis 1: Selected scales of the Minnesota Multiphasic Personality Invenotry will not discriminate between mothers of infants who fail to thrive compared to mothers of infants who thrive.

Alternative hypothesis: Selected scales of the Minnesota Multiphasic Personality Inventory will discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

The overall discriminant analysis of the hypothesis of no discrimination between the two groups of mothers indicated significance on four selected MMPI scales, all four were significant at the .0001 level (see Table 2.1 and 2.1a). The overall classification results indicated 78 percent of cases correctly classified (see Table 2.2). Consequently, the null hypothesis is rejected, and the alternative hypothesis is supported.

Table 2.1

MMPI Summary Table

Variable	Vars In	Wilks' Lambda	Sig.
1 F	1	.709	.0001
2 Pa	2	.671	.0001
3 Si	3	.624	.0001
4 MF	4	.593	.0001

Classification Function Coefficients (Fisher's Linear Discriminant Functions)

Group =	Control[1]	Experimental[2]
F	.132	.270
MF	.320	.378
Pa	.256	.163
Si	.266	.344
(Constant)	-26.2	-30.0

Table 2.1a

Canonical Discriminant Functions

Function	Eigen-value	Percent of Variance	Cumulative Percent	Canonical Correlation	After Function	Wilks Lambda	Chi-Squared	D.F.	Significance
1*	.68398	100.00	100.00	.6373131	0	.5938320	23.973	4	.0001

*Marks the 1 function(s) to be used in the remaining analysis.

Table 2.2

MMPI Functions

Classification Results			
Actual Group	No. of Cases	Predicted 1	Group Membership 2
Group Control 1	25	21 84%	4 16%
Group Experimental 2	25	7 28%	18 72%

Percent of Grouped Cases Correctly Classified = 78%

Null hypothesis, H_a: Mothers of infants who fail to thrive will not exhibit a character disorder personality profile on the Minnesota Multiphasic Personality Inventory compared to mothers of infants who thrive.

Alternative hypothesis, H_a: Mothers of infants who fail to thrive will exhibit a character disorder personality profile on the Minnesota Multiphasic Personality Inventory compared to mothers of infants who thrive.

The character disorder formula was computed for each mother. A t-test was computed to determine significance between the two groups. Since the t-test indicated significance between the two groups ($t = 2.44$) (see Table 2.3), the null hypothesis is rejected, and the alternative hypothesis is supported.

Table 2.3

Character Disorder Summary Table

Control - 1
Experimental - 2

Variable	No.of Cases	Mean	Standard Deviation	Standard Error	F Value	2-tail Prob.	Pooled Variance Estimate T Value	Pooled Variance Estimate Degrees of Freedom	Pooled Variance Estimate 2-tail Prob.	Separate Variance Est. T Value	Separate Variance Est. Degrees of Freedom	Separate Variance Est. 2-tail Prob.
Group 1	25	28.16	6.013	1.203	2.31	.045	-2.44	48	.018	-2.44	41.48	.019
Group 2	25	33.50	9.148	1.830								

Table 2.4

Goldbergs' Index Summary Table

Variable	No.of Cases	Mean	Standard Deviation	Standard Error	F Value	2-tail Prob.	Pooled Variance Estimate T Value	Pooled Variance Estimate Degrees of Freedom	Pooled Variance Estimate 2-tail Prob.	Separate Variance Est. T Value	Separate Variance Est. Degrees of Freedom	Separate Variance Est. 2-tail Prob.
Group 1	25	55.36	9.634	1.927	3.95	.001	-1.33	48	.191	-1.33	35.43	.194
Group 2	25	61.04	19.143	3.829								

Null hypothesis, H_b: Mothers of infants who fail to thrive will not exhibit a psychotic profile on the Minnesota Multiphasic Personality Inventory compared to mothers of infants who thrive.

Alternative hypothesis, H_b: Mothers of infants who fail to thrive will exhibit a psychotic profile on the Minnesoat Multiphasic Personality Inventory compared to mothers of infants who thrive.

The psychotic profile formula was computed for each mother. A t-test was computed to determine significance between the two groups ($t = -1.33$) (see Table 2.4). The null hypothesis is accepted, and the alternative hypothesis is not supported.

Summary Personality Variables

The overall hypothesis testing of the MMPI analyses indicated four scales to be significant in discriminating between mothers with FTT infants and mothers with infants who thrive. These four MMPI scales were: F, Pa, Si, and MF.

In addition, the hypothesis that mothers of FTT infants had character disturbances was tested using Gorgh's Character Disorder sign. The results indicated a significant difference between the two groups. This particular conclusion supports Fishoff's assertion that mothers of FTT infants have character disturbances. This investigator further examined whether mothers of FTT infants could be identified as having severe psychopathology by using Goldberg's Psychotic Index. A t-test indicated that the mothers of FTT infants did not exhibit psychotic profiles on the MMPI.

Retrospective Parental Reports Analysis

Null hypothesis 2: The Revised Children's Reports of Parental Behavior Inventory items will not discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

Alternative hypothesis 2: The Revised Children's Reports of Parental Behavior Inventory items will discriminate between mothers of infants who fail to thrive and mothers of infants who thrive.

The overall discriminant analyses on all items of the CRPBI as to discrimination between the two groups of mothers indicated significance on 24 of 56 items (see Table 2.5 and 2.5a). In addition, the overall classification results indicated 98 percent of cases were correctly classified. The null hypothesis is rejected, and the alternative hypothesis is supported.

Table 2.5

Children's Reports Summary

Variables		Vars In	Wilks Lambda	Sig.
1	CRPB46	1	.911	.0355
2	CRPB15	2	.703	.0003
3	CRPB14	3	.653	.0002
4	CRPB22	4	.583	.0001
5	CRPB19	5	.531	.0000
6	CRPB28	6	.494	.0000
7	CRPB56	7	.451	.0000
8	CRPB10	8	.404	.0000
9	CRPB7	9	.380	.0000
10	CRPB27	10	.348	.0000
11	CRPB39	11	.323	.0000
12	CRPB25	12	.299	.0000
13	CRPB29	13	.283	.0000
14	CRPB49	14	.271	.0000
15	CRPB33	15	.260	.0000
16	CRPB18	16	.252	.0000
17	CRPB16	17	.240	.0000
18	CRPB38	18	.233	.0000
19	CRPB13	19	.224	.0000
20	CRPB20	20	.214	.0000
21	CRPB43	21	.205	.0000
22	CRPB35	22	.205	.0000
23	CRPB54	23	.196	.0000
24	CRPB24	24	.189	.0000

Table 2.5 (continued)

Children's Reports Summary

Classification Function Coefficients (Fisher's Linear Discriminant Functions)

Group =	Control 1	Experimental 2
CRPB87	8.38	1.70
CRPB13	-3.26	3.74
CRPB14	25.9	19.4
CRPB15	-18.4	-10.0
CRPB16	-12.4	-7.93
CRPB18	15.4	12.6
CRPB19	-10.3	-2.75
CRPB20	3.72	5.80
CRPB22	25.1	19.7
CRPB24	10.0	8.30
CRPB27	10.1	5.84
CRPB28	22.8	15.5
CRPB29	21.0	16.5
CRPB33	-3.52	-.854
CRPB35	-2.75	-.227
CRPB38	9.83	6.55
CRPB39	-6.33	-2.21
CRPB43	9.95	6.26
CRPB46	7.74	1.78
CRPB49	5.76	1.82
CRPB54	10.1	8.21
CRPB56	-10.5	-6.71
(Constant)	-127.0	-92.8

Table 2.5a

Canonical Discriminant Functions

Function	Eigen-Value	Percent of Variance	Cumulative Percent	Canonical Correlation	After Function	Wilks Lambda	Chi-Squared	D.F.	Significance
1	4.285	100.00	100.00	.9004	0	.1892	61.60	22	.0000

Children's Reports - Classification Results

Acutal Group	No. of Cases	Predicted 1	Group Membership 2
Group 1 Control	25	24 96%	1 4%
Group 2 Experimental	25	0 0	25 100%

Percent of Grouped Cases Correctly Classified - 98%

Null hypothesis 2_c: The Revised Children's Reports of Parental Behavior Inventory, Acceptance items will not discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

Alternative hypothesis 2_c: The Revised Children's Reports of Parental Behavior Inventory, Acceptance items will discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

Discriminant analysis indicated significance on 3 of 6 items that made up the Acceptance subfactor. Overall, 68 percent of cases were correctly classified for this subfactor (see Table 2.6 and Table 2.7). The null hypothesis is rejected, and the alternative hypothesis is supported. The overall canonical function was not significant.

Table 2.6

Children's Reports-Acceptance Summary Table

Variables	Vars In	Wilks Lambda	Sig.
1 CRPB22	1	.950	.1215
2 CRPB11	2	.921	.1462
3 CRPB53	3	.882	.1219

Classification Function Coefficients (Fisher's Linear Discriminant Functions)

Group	=	Control 1	Experimental 2
CRPB11		2.04	2.79
CRPB22		3.60	2.88
CRPB53		2.07	1.48
(Constant)		-9.88	-8.56

Table 2.6a

Canonical Discriminant Functions

Function	Eigen-Value	Percent of Variance	Cumulative Percent	Canonical Correlation	After Function	Wilks Lambda	Chi-Squared	D.F.	Sig.
1	.13281	100.00	100.00	.3424016	0	.8827612	5.7986	3	.1218

Table 2.7

Children's Reports - Classification Results

Actual Group	No. of Cases	Predicted Group Membership 1	2
Group Control 1	25	16 64%	3 36%
Group Experimental 2	25	7 28%	13 72%

Percent of Grouped Cases Correctly Classified - 68%

Null hypothesis 2_d: The Revised Children's Reports of Parental Behavior Inventory, Childcenteredness items, will not discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

Alternative hypothesis 2_d: The Revised Children's Reports of Parental Behavior Inventory, Childcenteredness items, will discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

Discriminant analysis for the Childcenteredness items indicated significance on 9 of the 18 items that made up that subfactor (see Table 2.8). The overall Canonical Discriminant function indicated significance (Table 2.8a). The classification percent was 80 (see Table 2.9). The null hypothesis is rejected, and the alternative hypothesis is supported.

Table 2.8

Children's Reports-Childcenteredness Summary

Variables	Vars In	Wilks Lambda	Sig.
1 CRPB46	1	.911	.0355
2 CRPB15	2	.703	.0003
3 CRPB9	3	.675	.0004
4 CRPB30	4	.658	.0007
5 CRPB16	5	.637	.0010
6 CRPB37	6	.619	.0015
7 CRPB29	7	.602	.0021
8 CRPB2	8	.580	.0024
9 CRPB51	9	.564	.0033

Classification Function Coefficients

(Fisher's Linear Discriminant Functions)

Group =	Control 1	Experimental 2
CRPB2	1.97	.930
CRPB9	3.36	2.54
CRPB15	-1.14	1.56
CRPB16	1.95	.864
CRPB29	-.424	1.21
CRPB30	-.348	.915
CRPB37	1.89	2.57
CRPB46	3.09	-.951
CRPB51	1.95	2.62
(Constant)	-14.3	-13.2

Table 2.8a

Canonical Discriminant Functions

Function	Eigen-value	Percent of Variance	Cumulative Percent	Canonical Correlation	After Function	Wilks Lambda	Chi-Squared	D.F.	Sig.
1	.77238	100.00	100.00	.6601411	0	.5642137	24.896	9	.0031

Table 2.9

Children's Reports-Childcenteredness Classification Results

Actual Group	No. of Cases	Predicted Group Membership 1	2
Group 1 Control	25	19 75%	6 24%
Group 2 Experimental	25	4 16%	21 84%

Percent of Grouped Cases Correctly Classified - 80%

Null hypothesis 2_e: The Revised Children's Reports of Parental Behavior Inventory, Psychological Autonomy (Control through Guilt) items,will not discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

Alternative hypothesis 2_e: The Revised Children's Reports of Parental Behavior Inventory Psychological Autonomy (Control through Guilt) items,will discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

The discriminant analyses for this subfactor indicated significance on 2 of 11 items (see Table 3). There was a 64 percent correct classification of group membership (see Table 3.1). The null hypothesis is rejected, and the alternative hypothesis is supported.

Table 3

Children's Reports-Psychological Autonomy (Control through Guilt) Summary Table

Variables	Vars In	Wilks Lambda	Sig.
1 CRPB14	1	.964	.1915
2 CRPB19	2	.896	.0765

Classification Function Coefficients (Fisher's Linear Discriminant Functions)

Group =	Control 1	Experimental 2
CRPB14	2.40	1.57
CRPB19	1.73	2.49
(Constant)	-4.26	-4.30

Table 3.a

Canonical Discriminant Functions

Function	Eigen-value	Percent of Variance	Cumulative Percent	Canonical Correlation	After Function	Wilks Lambda	Chi-Squared	D.F.	Sig.
1	.11557	100.00	100.00	.3218661	0	.8964022	5.1402	2	.0765

Table 3.1

Children's Reports-Psychological Autonomy (Control through Guilt) Classification Results

Actual Group	No. of Cases	Predicted Group Membership 1	2
Group 1 Control	25	19 75%	6 24%
Group 2 Experimental	25	12 48%	13 52%

Percent of Grouped Cases Correctly Classified = 64%

Null hypothesis 2_f: The Revised Children's Reports of Parental Behavior Inventory, Psychological Autonomy (Control through Instilling Anxiety) items, will not discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

Alternative hypothesis 2_f: The Revised Children's Reports of Parental Behavior Inventory, Psychological Autonomy (Control through Instilling Anxiety) items will discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

Discriminant analysis indicated no variables that qualified for the analysis, so it was abandoned. The null hypotheis was not rejected, and the alternative hypothesis was not supported.

Null hypothesis 2_g: The Revised Children's Reports of Parental Behavior Inventory, Lax Discipline items, will not discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

Alternative hypothesis 2_g: The Revised Children's Reports of Parental Behavior Inventory, Lax Discipline items, will discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

Discriminant analysis indicated that 2 of the 6 items in that subfactor were significant (see Table 3.2). There was a 56 percent correct classification of cases (see Table 3.3). The null hypothesis is rejected, and the alternative hypothesis is supported.

Table 3.2

Children's Reports-Lax Discipline Summary Table

Variables	Vars In	Wilks Lambda	Sig.
1 CRPB27	1	.977	.2948
2 CRPB20	2	.954	.3373

Classification Function Coefficients (Fisher's Linear Discriminate Functions)

Group	=	Control 1	Experimental 2
CRPB20		1.72	2.13
CRPB27		2.28	1.80
(Constant)		-3.91	-3.73

Table 3.2a

Canonical Discriminant Functions

Function	Eigen-value	Percent of Variance	Cumulative Percent	Canonical Correlation	After Function	Wilks Lambda	Chi-Squared	D.F.	Sig.
1	.04733	100.00	100.00	.2123725	0	.9548129	2.1733	2	.3373

Table 3.3

Children's Reports-Lax Discipline Classification Results

Actual Group	No. of Cases	Predicted Group Membership 1	2
Group 1 Control	25	10 40%	15 60%
Group 2 Experimental	25	7 28%	18 72%

Percent of Grouped Cases Correctly Classified - 56%

Null hypothesis 2_h: The Revised Children's Reports of Parental Behavior Inventory, Nonenforcement of Rules items will not discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

Alternative hypothesis 2_h: The Revised Children's Reports of Parental Behavior Inventory, Nonenforcement of Rules items will discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

The discriminant analysis indicated significance on 2 of 10 items that make up the subfactor (see Table 3.4). The overall correct classification was 68 percent (see Table 3.5). The null hypothesis is rejected, and the alternative hypothesis is supported.

Table 3.4

Children's Reports-Nonenforcement of Rules Summary

Variables	Vars In	Wilks Lambda	Sig.
1 CRPB10	1	.937	.0787
2 CRPB55	2	.842	.0178

Classification Function Coefficients
(Fisher's Linear Discriminant Functions)

Group =	Control 1	Experimental 2
CRPB10	3.66	2.49
CRPB55	2.28	3.51
(Constant)	-5.21	-5.04

Table 3.4a

Canonical Discriminant Functions

Function	Eigen-value	Percent of Variance	Cumulative Percent	Canonical Correlation	After Function	Wilks Lambda	Chi-Squared	D.F.	Sig.
1	.18712	100.00	100.00	.3970177	0	.8423769	8.0618	2	.0178

Table 3.5

Children's Reports-Nonenforcement of Rules Classification Results

Actual Group	No. of Cases	Predicted Group Membership 1	2
Group 1 Control	25	12 43%	13 52%
Group 2 Experimental	25	3 12%	22 88%

Percent of Grouped Cases Correctly Classified - 58%

Summary - Children's Reports of Parental Behavior, Retrospective Reports

Statistical analyses of the Children's Reports of Parental Behavior Inventory, a retrospective report of the mother's own mother in early childhood, indicated a number of significant findings. The Revised Children's Reports measure contains 56 items developed to explore early perceptions of parental behaviors. The CRPBI is separated into three factors, each further divided into two subfactors which represent dicotomy behavioral observations.

The results indicated that 24 of the 56 items significantly discriminated between the two groups of mothers. All of the items were significant at the .001 level of significance. The general hypothesis was supported, and there was an unusual and significant finding of nearly 100 percent correct predictions of group memberships based on the discriminant power of the variables used on this measure. The subhypothesis which examined the subfactors' discriminating power also

indicated significance. Five of the six subfactor items discriminated between mothers of FTT infants and mothers with infants who thrived. The greatest item discrimination was on the Child Centeredness subfactors. When these were analyzed, the degree to which the discrimination was used to correctly classify group membership was lower than when the CRPIB was analysed on all items together.

Supplementary Analysis: Children's Reports of Parental Behavior

When the total scores for factors and subfactors were examined, further analyses revealed no significant discrimination between the two groups of mothers. The F levels were not greater than 1.0 (see Table 3.6).

Table 3.6

Discriminant Analysis of Children's Reports Subfactors

Variable	Tolerance*	Minimum Tolerance	F to Enter	Wilks Lambda
CRPBF1	1.00	1.00	.9441	.98071
CRPBF2	1.00	1.00	.9125	.98134
CRPBF3	1.00	1.00	0	1.00000
CRPBF4	1.00	1.00	.0790	.99836
CRPBF5	1.00	1.00	0	1.00000
CRPBF6	1.00	1.00	.0126	.99974

F Level or Tolerance or VIN Insufficient for Further Computation

*An additional test, performed before a variable is actually accepted, is a test to see the "tolerance" for this variable is sufficiently high. A tolerance check is needed to detect situations in which rounding error during the inversion of the pooled within-groups covariance matrix would have serious effects upon the results.

Further subfactor totals indicated no significant discriminators between the two groups of mothers (see Table 3.7).

Table 3.7

Children's Reports of Parental Behavior Factors

Variable	Tolerance	Minimum Tolerance	F to Enter	Wilks Lambda
CRPB F1	1.00	1.00	.5093	.98950
CRPB F2	1.00	1.00	.0107	.99978
CRPB F3	1.00	1.00	.0055	.99989

F Level or Tolerance or VIN Insufficient for further computation.
No Variable qualified for the analysis, so it was abandoned.

T-tests on the subfactors of the CRPBI indicated no significant differences between mothers of infants who fail to thrive and mothers of infants who thrive (see Table 3.8).

Table 3.8

T-Test on the Children's Reports of Parental Behavior Subfactors

1=control
2=experimental

Variable	No.of Cases	Mean	Standard Deviation	Standard Error	F Value	2-tail Prob.	Pooled Variance Estimate T Value	Pooled Variance Estimate Degrees of Freedom	Pooled Variance Estimate 2-tail Prob.	Separate Variance Estimate T Value	Separate Variance Estimate Degrees of Freedom	Separate Variance Estimate 2-tail Prob.
CRPBTOT												
Group 1	25	103.4	11.8	2.3	1.24	.600	.43	48	.671	.43	47.45	.671
Group 2	25	102.0	10.6	2.1								
CRPB1 Acceptance												
Group 1	25	9.6	3.3	.67	1.01	.988	-.97	48	.336	-.97	48.00	.336
Group 2	25	10.5	3.3	.66								
CRPB2 Child Centeredness												
Group 1	25	41.4	7.7	1.5	1.11	.806	.96	48	.344	.96	47.88	.344
Group 2	25	39.3	8.1	1.6								
CRPB3 Control Through Guilt												
Group 1	25	19.2	5.9	1.1	1.23	.610	0	48	1.000	0	47.48	1.000
Group 2	25	19.2	5.3	1.0								
CRPB4 Instilling Persistent Anxiety												
Group 1	25	8.5	2.6	.53	1.60	.257	.28	48	.780	.28	45.58	.780
Group 2	25	8.2	3.3	.67								
CRPB5 Lax Discipline												
Group 1	25	9.3	2.0	.41	2.38	.038	0	48	1.000	0	41.12	1.000
Group 2	25	9.3	3.2	.64								
CRPB6 Nonenforcement of Rules												
Group 1	25	15.2	3.5	.71	1.26	.573	-.11	48	.911	-.11	47.37	.911
Group 2	25	15.3	3.9	.79								

Further testing indicated no significant differences between the groups on the three factors of the Children's Reports measure (see Table 3.9).

Table 3.9

Children's Reports of Parental Behavior Factors

1=control
2=experimental

							Pooled Variance Estimate			Separate Variance Estimate		
Variable	No.of Cases	Mean	Standard Deviation	Standard Error	F Value	2-tail Prob.	T Value	Degrees of Freedom	2-tail Prob.	T Value	Degrees of Freedom	2-tail Prob.
CRPB1												
Group 1	25	51.1	6.1	1.23	1.01	.979	.71	48	.479	.71	48.00	.479
Group 2	25	49.8	6.1	1.22								
CRPB2												
Group 1	25	27.7	8.2	1.64	1.02	.968	.10	48	.918	.10	48.00	.918
Group 2	25	27.4	8.1	1.63								
CRPB3												
Group 1	25	24.5	4.6	.93	2.00	.096	-.07	48	.941	-.07	43.19	.941
Group 2	25	24.6	6.6	1.32								

The Response to Loss Analysis

Null hypothesis 3: The Response to Loss Scale items will not discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

Alternative hypothesis 3: The Response to Loss Scale items will discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

The discriminant analyses indicated significance on 14 of 46 items on the Response to Loss Scale (see Table 4). There was a 88 percent correct classification of group memberships. The null hypothesis is rejected, and the alternative hypothesis is supported.

Table 4

Response to Loss Scale Summary Table

Variables	Vars In	Wilks Lambda	Sig.
1 LOSS28	1	.865	.0087
2 LOSS11	2	.778	.0028
3 LOSS35	3	.682	.0005
4 LOSS13	4	.641	.0004
5 LOSS36	5	.574	.0001
6 LOSS1	6	.554	.0002
7 LOSS31	7	.534	.0002
8 LOSS38	8	.499	.0002
9 LOSS29	9	.477	.0002
10 LOSS18	10	.464	.0003
11 LOSS3	11	.446	.0004
12 LOSS6	12	.425	.0004
13 LOSS30	13	.419	.0003
14 LOSS40	14	.411	.0002

Classification Function Coefficients
(Fisher's Linear Discriminant Functions)

Group	=	Control 1	Experimental 2
LOSS1		-.349	.772
LOSS3		-.450	.581
LOSS6		1.06	-.108
LOSS11		.296	-.351
LOSS13		1.73	-.528
LOSS18		-.562	.711
LOSS30		-.821	.236
LOSS31		.945	-.127
LOSS35		-.553	.760
LOSS36		-.984	-.121
LOSS38		-.361	.828
LOSS40		.266	.933
(Constant)		-2.68	-2.31

Table 4.0a

Canonical Discriminant Functions

Function	Eigen-value	Percent of Variance	Cumulative Percent	Canonical Correlation	After Function	Wilks Lambda	Chi-Squared	D.F.	Sig.
1*	1.42960	100.00	100.00	.7670783	0	.4115911	37.284	12	.0002

*Marks the function(s) to be used in the remaining analysis.

Table 4.1

Response to Loss Scale Classification Results

Actual Group	No. of Cases	Predicted Group Membership 1	2
Group 1 Control	25	19 76%	6 24%
Group 2 Experimental	25	0 0	25 100%

Percent of Grouped Cases Correctly Classified - 88%

Null hypothesis 3_i: The Response to Loss, Cognitive Dimension items, will not discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

Alternative hypothesis 3_i: The Response to Loss, Cognitive Dimension items, will discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

The discriminant analyses indicated significance on 3 of the 6 items that make up the Cognitive Dimension on the Response to Loss Scale (see Table 4.2). The percentage of correctly classified cases was 70 (see Table 4.3). The null hypothesis is rejected, and the alternative hypothesis is supported.

Table 4.2

Response to Loss-Cognitive Dimension Summary

Variables	Vars In	Wilks Lambda	Sig.
1 LOSS13	1	.931	.0654
2 LOSS1	2	.836	.0150
3 LOSS38	3	.785	.0107

Classification Function Coefficients
(Fisher's Linear Discriminant Functions)

Group =	Control 1	Experimental 2
LOSS1	-.703	.895
LOSS13	1.00	.995
LOSS38	.898	.597
(Constant)	-1.61	-1.43

Table 4.2a

Canonical Discriminant Functions

Function	Eigen-value	Percent of Variance	Cumulative Percent	Canonical Correlation	After Function	Wilks Lambda	Chi Squared	D.F.	Sig.
1*	.27231	100.00	100.00	.4626339	0	.7359698	11.199	3	.0107

*Marks the 1 function(s) to be used in the remaining analysis.

Table 4.3

Response to Loss-Cognitive Dimension Classification Results

Actual Group	No. of Cases	Predicted Group Membership 1	2
Group 1 Control	25	16 64%	9 36%
Group 2 Experimental	25	6 24%	19 76%

Percent of Grouped Cases Correctly Classified - 70%

Null hypothesis 3_j: The Response to Loss Scale, Physical Dimension items, will not discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

Alternative hypothesis 3_j: The Response to Loss Scale, Physical Dimension items, will discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

The discriminant analyses indicated significance on 2 of 7 items that make up the Physical Dimension on the Response to Loss Scale (see Table 4.4). There was a 68 percent correct classification of group membership (see Table 4.5). The null hypothesis is rejected, and the alternative hypothesis is supported.

Table 4.4

Response to Loss-Physical Dimension Summary

Variables	Vars In	Wilks Lambda	Sig.
1 LOSS28	1	.865263	.0087
2 LOSS9	2	.803141	.0058

Classification Function Coefficients
(Fisher's Linear Discriminant Functions)

Group =	Control 1	Experimental 2
LOSS9	.2812185	1.057259
LOSS28	.1178147	1.054953
(Constant)	-.7203572	-1.390108

Table 4.4a

Canonical Discriminant Functions

Function	Eigen-value	Percent of Variance	Cumulative Percent	Canonical Correlation	After Function	Wilks Lambda	Chi Squared	D.F.	Sig.
1*	.24511	100.00	100.00	.4436877	0	.8031412	10.304	2	.0058

*Marks the 1 function(s) to be used in the remaining analysis.

Table 4.5

Response to Loss-Physical Dimension Classification Results

Actual Group	No. of Cases	Predicted Group Membership 1	2
Group 1 Control	25	21 84%	4 16%
Group 2 Experimental	25	12 48%	13 52%

Percent of Grouped Cases Correctly Classified - 58%

Null hypothesis 3_k: The Response to Loss, Imaginative Dimension items, will not discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

Alternative hypothesis 3_k: The Response to Loss, Imaginative Dimension items, will discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

The discriminant analyses indicated significance on 3 of 7 items that make up the Imaginative Dimension of the Response to Loss Scales (see Table 4.6). There was a 64 percent correct classification of group membership (see Table 4.7). The null hypothesis is rejected, and the alternative hypothesis is supported.

Table 4.6

Response to Loss-Imaginative Dimension Summary

Variables	Vars In	Wilks Lambda	Sig.
1 LOSS35	1	.904	.0285
2 LOSS4	2	.869	.0374
3 LOSS23	3	.831	.0353

Classification Function Coefficients
(Fisher's Linear Discriminant Functions)

Group =	Control 1	Experimental 2
LOSS4	.870	.356
LOSS23	.150	.647
LOSS35	-.293	.912
(Constant)	-1.10	-1.33

Table 4.6a

Canonical Discriminant Functions

Function	Eigen-value	Percent of Variance	Cumulative Percent	Canonical Correlation	After Function	Wilks Lambda	Chi Squared	D.F.	Sig.
1*	.20288	100.00	100.00	.4106852	0	.8313377	8.5894	3	.0353

*Marks the 1 function(s) to be used in the remaining analysis.

Table 4.7

Response to Loss-Imaginative Dimension Classification Results

Actual Group	No. of Cases	Predicted Group Membership 1	2
Group 1 Control	25	21 84%	4 16 %
Group 2 Experimental	25	14 56%	11 44 %

Percent of Grouped Cases Correctly Classified - 64 %

Null hypothesis 3_1: The Response to Loss, Emotional Dimension items, will not discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

Alternative hypothesis 3_1: The Response to Loss, Emotional Dimension items, will discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

The discriminant analyses indicated significance on 4 of the 10 items that make up the Emotional Dimension of the Response to Loss Scale (see Table 4.8). There was a 62 percent correct classification of group membership (see Table 4.9). The null hypothesis is rejected, and the alternative hypothesis is supported.

Table 4.8

Response to Loss-Emotional Dimension Summary

Variables	Vars In	Wilks Lambda	Sig.
1 LOSS44	1	.915	.0411
2 LOSS27	2	.875	.0443
3 LOSS33	3	.844	.0489
4 LOSS20	4	.818	.0558

Classification Function Coefficients
(Fisher's Linear Discriminant Functions)

Group =	Control 1	Experimental 2
LOSS20	1.05	.701
LOSS27	.771	.325
LOSS33	-.811	-.499
LOSS44	-.261	.461
(Constant)	-1.77	-1.53

Table 4.8a

Canonical Discriminant Functions

Function	Eigen-value	Percent of Variance	Cumulative Percent	Canonical Correlation	After Function	Wilks Lambda	Chi Squared	D.F.	Sig.
1*	.22216	100.00	100.00	.4263541	0	.8182222	9.2286	4	.0556

*Marks the 1 function(s) to be used in the remaining analysis.

Table 4.9

Response to Loss-Emotional Dimension Classification Results

Actual Group	No. of Cases	Predicted Group Membership 1	2
Group 1 Control	25	17 68 %	8 32 %
Group 2 Experimental	25	11 44 %	14 56 %

Percent of Grouped Cases Correctly Classified - 62 %

Null hypothesis 3_m: The Response to Loss, Spiritual Dimension items, will not discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

Alternative hypothesis 3_m: The Response to Loss, Spiritual Dimension items will discriminate mothers of infants who fail to thrive from mothers of infants who thrive.

The discriminant analyses indicated significance on 3 of the 7 items that make up the Spiritual Dimension of the Response to Loss Scale (see Table 5). There was a 64 percent correct classification of group membership. The null hypothesis is rejected, and the alternative hypothesis is supported.

Table 5

Response to Loss-Spiritual Dimension Summary

Variables	Vars In	Wilks Lambda	Sig.
1 LOSS36	1	.900	.0258
2 LOSS11	2	.796	.0048
3 LOSS30	3	.777	.0084

Classification Function Coefficients
(Fisher's Linear Discriminant Functions)

Group =	Control 1	Experimental 2
LOSS11	.866	.533
LOSS30	.420	.446
LOSS36	-.130	.667
(Constant)	-1.10	-1.16

Table 5.0a

Canonical Discriminant Functions

Function	Eigen-value	Percent of Variance	Cumulative Percent	Canonical Correlation	After Function	Wilks Lambda	Chi Squared	D.F.	Sig.
1*	.28700	100.00	100.00	.4722251	0	.7770035	11.732	3	.0084

*Marks the 1 function(s) to be used in the remaining analysis.

Table 5.1

Response to Loss-Spiritual Dimension Classification Results

Actual Group	No. of Cases	Predicted Group Membership 1	2
Group 1 Control	25	21 84%	4 16%
Group 2 Experimental	25	14 56%	11 44%

Percent of Grouped Cases Correctly Classified = 64 %

Supplementary Analyses

The analyses in this section were not directly related to the hypotheses explored in this study, but the results were of interest.

A discriminant analysis was done on the five dimensions of the Response to Loss scale to get a sense of which discriminated best between mothers of FTT infants and mothers of infants who thrive. The results indicated that the Physical Response to Loss and the Cognitive Response to Loss were the best discriminators between the two groups of mothers (see Table 5.2). There was a 66 percent correct classification of group membership (see Table 5.3).

Table 5.2

Response to Loss-Dimensions Summary

Variables	Vars In	Wilks Lambda	Sig.	Label
1 LOSSF3	1	.862	.0081	Physical Response to Loss
2 LOSSF1	2	.807	.0066	Cognitive Response to Loss

Classification Function Coefficients
(Fisher's Linear Discriminant Functions)

Group =	Control 1	Experimental 2
LOSSF1	.303	.192
LOSSF3	.125	.136
(Constant)	-1.90	-1.84

Table 5.2a

Canonical Discriminant Functions

Function	Eigen-value	Percent of Variance	Cumulative Percent	Canonical Correlation	After Function	Wilks Lambda	Chi Squared	D.F.	Sig.
1*	.23857	100.00	100.00	.438	0	.807	10.056	2	.0066

*Marks the 1 function(s) to be used in the remaining analysis.

Table 5.3

Response to Loss-Dimensions Classification Results

Actual Group	No. of Cases	Predicted Group Membership 1	2
Group 1 Control	25	17 68%	8 32%
Group 2 Experimental	25	9 36%	16 64%

Percent of Grouped Cases Correctly Classified - 66%

Cross-tabulations were done on the type of loss and time of loss for each group of mothers. The type of loss reported most by the control group was death of a parent (33 percent) (see Table 5.4). The time reported for the control group was more than two years (42.9 percent) (chi square = 22.7, significance = .302).

Table 5.4

Type of Loss/Time of Loss - Control Group

Row Pct. Col. Pct. Total Pct. Type	Time 1-3 mos.	4-6 mos.	7-1 yr.	13-2 yrs.	more than 2 years	Row Total
Death of parent	0 0 0	0 0 0	14.3 14.3 4.8	14.3 50.0 4.8	71.4 55.6 23.8	33.3
Job related	33.3 50.0 4.8			33.3 50.0 4.8	33.3 11.1 4.8	14.3
Divorce			100.0 28.6 9.5			9.5
Breakup with Girl/Boyfriend	50.0 50.0 4.0		50.0 14.3 4.8			9.5
Move to new area		25.0 100.0 4.3	50.0 28.6 9.5		25.0 11.1 4.6	19.0
Other			33.3 14.3 4.8		66.7 22.2 9.5	14.3
Column Total	9.5	4.8	33.3	9.5	42.9	100.0

Control Group Statistics (Type/Time)

Row Chi Square = 22.734
DF = 20
Significance = .3020

Table 5.9

Type of Loss/Time of Loss-Experimental Group

Row Pct. Col. Pct. Total Pct.	Time					Row
Type	1-3 mos.	4-6 mos.	7-1 yr.	13-2 yr.	more than 2 years	Total
Death of Child					100.0 22.2 9.1	9.1
Death of Parent	20.0 50.0 4.5	20.0 50.0 4.5		20.0 33.3 4.5	40.0 22.2 9.1	22.7
Divorce			33.3 16.7 4.5		66.7 22.2 9.1	13.6
Breakup with Girl/Boyfriend		100.0 16.7 4.5				4.5
Move to new area			66.7 33.3 9.1	33.3 33.3 4.5		13.6
Other	12.5 50.0 4.5	12.5 50.0 4.5	25.0 33.3 9.1	12.5 33.3 4.5	37.5 33.3 13.6	36.4
Total	9.1	9.1	27.3	13.6	40.9	100.0

Experimental Group Statistics (Type/Time)

Raw Chi Square = 1444
D.F. = 20
Significance = .8074

Summary of the Response to Loss Scale

The overall summary of the hypotheses tested under the Response to Loss measure indicated significant findings. The scale consists of 46 items used to measure the degree of loss experienced. The five dimensions of the scale -- Cognitive, Physical, Imaginative, Emotional, and Spiritual -- were the focus of the subhypotheses.

The general hypothesis that RLS items will discriminate mothers of FTT infants from mothers of infants who thrive was supported. Fourteen of the 46 items significantly discriminated between the two groups. All of the subhypotheses were significant. However, the subfactors indicated a lower percentage of correct classification of group membership than when all items were analyzed together.

A t-test was done on the type and time of loss reported for mothers of FTT infants and mothers of infants who thrive. Results indicate no significant differences on the type of loss and time of loss reported for the two groups (see Table 5.6).

Table 5.6

T-test of Type of Loss and Time of Loss

1=control
2=experimental

							Pooled Variance Estimate			Separate Variance Estimate		
Variable	No.of Cases	Mean	Standard Deviation	Standard Error	F Value	2-tail Prob.	T Value	Degrees of Freedom	2-tail Prob.	T Value	Degrees of Freedom	2-tail Prob.
Group 1	25	29.9	20.4	4.0	1.91	.119	-1.27	48	.209	-1.27	43.70	.209
Group 2	25	38.8	28.3	5.6								

A t-test was also done to determine the discriminating power of each RLS dimension between mothers of FTT infants and mothers of infants who thrive. Results indicate significant differences on the Physical Dimension ($t = 2.76$). The Cognitive Dimension had an inverse significance for the control group ($t = .19$). Other dimensions were not significant (see Table 5.7).

Supplementary analyses performed to determine scale relationship indicated a poor relationship among the three measures (see Table 5.8, 5.9, and 6). The results of a Pearson correlation on the three measures ranged from .00 to .60. The relationship between the RLS dimensions and the MMPI appear to be better than the relationship between the MMPI and the CRPBI. Of particular interest to the investigation was the relationship of the Depression scale on the MMPI and the RLS dimensions. Some of the literature cited in Chapter II tended to relate mothers of FTT infants and depression due to loss ($r = .22$-$.59$).

In addition, the relationship between the Hypochondriasis scale on the MMPI and the Physical Dimension of the RLS was weak, $\dot{\gamma} = .49$.

Table 5.7

T-Test on Response to Loss Dimensions

1=control
2=experimental

Variable	No.of Cases	Mean	Standard Deviation	Standard Error	F Value	2-tail Prob.	Pooled Variance Estimate T Value	Pooled Variance Estimate Degrees of Freedom	Pooled Variance Estimate 2-tail Prob.	Separate Variance Estimate T Value	Separate Variance Estimate Degrees of Freedom	Separate Variance Estimate 2-tail Prob.
LOSSD1 Cognitive Response to Loss												
Group 1	25	8.68	5.4	1.0	1.32	.500	.19	48	.847	.19	47.10	.847
Group 2	25	8.36	6.2	1.2								
LOSSD2 Emotional Response to Loss												
Group 1	25	9.20	6.4	1.2	1.50	.328	-.38	48	.709	-.38	46.16	.709
Group 2	25	9.96	7.8	1.5								
LOSSD3 Physical Response to Loss												
Group 1	25	1.72	2.8	.57	3.46	.004	-2.76	48	.008	-2.76	36.82	.009
Group 2	25	5.08	5.3	1.07								
LOSSD4 Imaginative Response to Loss												
Group 1	25	2.72	3.0	.61	1.60	.258	-1.33	48	.189	-1.33	45.58	.190
Group 2	25	4.04	3.8	.78								
LOSSD5 Spiritual Response to Loss												
Group 1	25	2.96	3.2	.64	2.84	.013	-1.19	48	.238	-1.19	39.04	.239
Group 2	25	4.48	5.4	1.09								

Table 5.8

Correlation Matrix MMPI Scales and RLS Dimensions

N = 50 Pearson Correlation Coefficients

	L	F	K	HS	D	HY	PD	MF	PS	PT
LOSSD1	-.19	.24	-.24	.15	.22	.13	.10	.00	.28	.23
LOSSD2	-.27	.22	-.30	.24	.33	.26	.22	-.01	.28	.26
LOSSD3	-.20	.55	-.44	.50	.59	.49	.48	.21	.53	.60
LOSSD4	-.17	.44	-.42	.37	.24	.26	.29	.15	.34	.36
LOSSD5	-.21	.46	-.44	.31	.40	.33	.23	.10	.45	.41

N = 50

	SC	MA	SI	A	R	ES	MAC
LOSSD1	.26	.20	.26	.34	-.20	-.32	-.00
LOSSD2	.26	.14	.33	.39	-.19	-.32	-.02
LOSSD3	.62	.40	.44	.56	-.13	-.60	.17
LOSSD4	.38	.29	.36	.40	-.36	-.42	.16
LOSSD5	.45	.26	.38	.51	-.19	-.54	.05

Table 5.9

Correlation Matrix of MMPI Scale and CRPBI Factors

N = 50

Pearson Correlation Coefficients

	L	F	K	HS	D	HY	PD	MF	PS	PT
CRPBF1	-.03	-.02	-.08	.06	.09	-.01	.06	.01	-.18	-.05
CRPBF2	-.02	-.11	10	-.10	-.12	-.00	-.09	.01	.08	.04
CRPBF3	-.07	.03	-.16	.22	.01	.06	.17	.24	.09	-.01
CRPBF4	.10	.13	-.19	.22	-.04	.01	.07	.30	.14	.04
CRPBF5	-.21	.08	-.13	-.05	.02	.05	-.11	.05	-.05	.07
CRPBF6	-.23	.05	-.07	-.00	-.05	.10	.00	-.12	-.19	-.06

N = 50

	SC	MA	SI	A	R	ES	MAC
CRPBF1	-.06	-.19	.17	.04	.11	-.01	-.04
CRPBF2	-.03	.11	-.18	-.10	-.12	.03	-.02
CRPBF3	.09	.06	.14	.09	-.12	-.11	.25
CRPBF4	.19	.25	.06	.14	-.15	-.27	.33
CRPBF5	.05	.05	.02	.15	-.07	-.09	.03
CRPBF6	-.00	-.04	-.17	.04	-.07	.06	.00

Table 6.0

Correlation Matrix Response to Loss Dimensions and Children's Reports Factors

Pearson Correlation Coefficients

	CRPBF1	CRPBF2	CRPBF3	CRPBF4	CRPBF5	CRPBF6	CRPBMF1	CRPBMF2	CRPBMF3
LOSSD1	-.07	.04	.03	-.04	.04	-.20	.02	.00	-.11
LOSSD2	-.00	-.01	.12	-.08	.03	-.07	-.02	.05	-.03
LOSSD3	-.00	.00	.01	-.01	-.07	-.15	.00	.00	-.13
LOSSD4	-.04	.13	.05	.00	.04	-.01	.14	.03	.01
LOSSD5	-.11	.13	-.00	-.02	-.04	-.14	.11	-.01	-.11

Table 6.1

Combined Discriminate Summary of Significant Discriminators

Step	Action Entered	Removed	Vars In	Wilks Lambda	Sig.
1	F		1	.709	.0001
2	Pa		2	.671	.0001
3	Si		3	.624	.0001
4	MF		4	.593	.0001
5	LOSSD1		5	.573	.0001
6	LOSSD3		6	.535	.0001

Classification Function Coefficients
(Fisher's Linear Discriminant Functions)

Group =	Control 1	Experimental 2
F	.210	.343
Pa	.386	.273
Si	.276	.364
MF	.301	.359
LOSSD1	.160	.993
LOSSD3	-1.00	-.791
(Constant)	-31.82	-40.11

Table 6.1a

Canonical Discriminant Functions

Function	Eigen-value	Variance	Percent	Correlation	Function	Wilks Lambda	Chi-Squared	D.F.	Sig.
1*	.86844	100.00	100.00	.6817578	0	.5352	28.13	6	.0001

*Marks the 1 function(s) to be used in the remaining analysis.

Further supplementary analyses were done to determine from the set of variables identified thus far as best discriminators for the two groups of mothers which ones when combined are the best discriminators. Discriminate analyses was done on the following variables to determine the best set: F, Pa, Si, MF, LOSSI, LOSS3. The Children's Reports of Parental Behavior factors were not included in this group since earlier analysis indicated that no factors qualified.

The results from this stepwise discriminate analysis indicate that the above variables were all significant in discriminating between the two groups of mothers when combined in a discriminate function. The F scale was the best discriminator when combined with the other scales and the Response to Loss dimensions (see Table 6.1). All other variables also were significant at the .001 level. There was a 78 percent correct classification of group membership with this set of discriminators (see Table 6.2).

Table 6.2

Classification Results of Discriminating Variables

Actual Group	No. of Cases	Predicted Group Membership 1	2
Group 1 Control	25	19 76.0	6 24.0
Group 2 Experimental	25	5 20.0	20 80.0

Percent of Grouped Cases Correctly Classified = 78.00

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Summary

The Problem

A subject of growing professional and scholarly interest has been the relationship between mothers and infants. One phenomenon that continues to gain attention is a complex pediatric syndrome characterized by growth failure, called failure to thrive (FTT) in infancy. Failure to thrive is caused by a variety of organic, nonorganic, and interactional factors contributed by both the mother and the infant.

A number of studies with flawed methodology and equivocal results have examined the etiology of failure to thrive in infancy. Few have focused directly on the personality of mothers of FTT infants. Notably lacking are empirical data to assess personality characteristics of mothers of FTT infants. A growing body of clinical literature supports psychiatric diagnosis of these mothers. In addition, a number of clinical case studies have concluded that mothers of FTT infants have experienced difficult and traumatic childhood experiences, but no empirical research exists on retrospective reports from mothers of FTT infants and their own mothers.

Finally, little has been done to examine the relationship of loss experiences by mothers of FTT infants and how such losses effect her relationship with her infant.

It is these issues this research has attempted to address.

Design and Method

The purpose of this investigation was threefold: (1) Explore the personality characteristics of mothers of infants who fail to thrive; (2) examine retrospective reports from mothers of FTT infants of their own mother's behavior; and (3) investigate the effect of losses as they relate to mothers of FTT infants.

Dependent variables were used to discriminate between mothers of infants who fail to thrive and a control group of mothers with infants who thrive. The dependent variables were assessed through the use of the Minnesota Multiphasic Personality Inventory (MMPI), the Response to LOss Scale (RLS), and the Children's Reports of Parental Behavior Inventory (CRPBI), responded to by mothers of their childhood experience of their own mothers.

Discriminant analyses on items scales, subfactors, and dimensions were performed for each measure. In addition, MMPI profile computation to determine character disturbances and psychotic features were also used. This analysis was done to confirm or contradict Fischoff's assertion that mothers of FTT infants have character disturbances (Fischoff, Whitten, Petit, 1971).

Supplementary analyses were done to indicate how measures correlated with each other. Further analyses were done to determine differences in type and time of losses reported on the RLS by mothers of infants who fail to thrive and mothers of infants who thrive.

Results

The discriminant analyses rejected the three general null hypotheses. In addition, discriminant analyses also rejected ten null subhypotheses and partially supported one alternative hypothesis.

The MMPI general hypothesis indicated that there were significant differences on one validity scale (F) and three clinical scales: Pa, MF and Si between the two groups of mothers. Furthermore, analyses revealed a 78 percent correct classification of group membership on the MMPI.

The subhypothesis relative to the MMPI on characterological differences between the two groups of mothers, indicated that there were significant differences in the character disturbance profile for the two groups of mothers. Mothers of infants who fail to thrive were seen as suffering from a significant level of characterological disturbances than mothers of infants who thrive.

The subhypotheses relating to the MMPI on psychotic disturbances between the two groups of mothers, indicated no significant differences between the two groups of mothers.

There were significant discriminations on the Children's Reports of Parental Bahavior Inventory (CRPBI). The results of the analyses on the CRPBI indicated that 24 items from the 56 items which made up the CRPBI significantly discriminated between the two groups of mothers. In addition, there was a 98 percent correct classification of group membership for this measure based on the discriminant scores for each mother.

The subhypotheses of the CRPBI did not significantly discriminate between the two groups of mothers. The three factors; Factor I, Acceptance versus Rejection; Factor II, Psychological Autonomy versus Psychological Control; and Factor III, Firm Control versus Lax Control did not significantly discriminate between the two groups of mothers. These three factors were further divided into two subfactors per factor

which were analyzed in this research study. The six subfactors on the CRPBI, when analyzed separately, did not significantly discriminate between the two groups of mothers. These subfactors were: Factor I, Acceptance and Child Centeredness; Factor II, Control through Guilt and Instilling Persistent Anxiety; Factor III, Lax Discipline and Nonenforcement of Rules. The six subfactors classification results ranged from 58 percent to 80 percent in correctly classifying the two groups of mothers. The Instilling Persistent Anxiety subfactor did not qualify for statistical discrimination so further analyses was abandoned.

The subfactor with the highest percent of correct classification was the Child Centeredness subfactor. The subfactor with the lowest percent of correct classification was the Lax Discipline subfactor.

While the overall measure significantly discriminated the mothers with respect to the items, when analyzed in terms of factors and subfactors totals the CRPBI measure was not able to discriminate between these mothers. The author's assumptions regarding no significant differences on the CRPBI factors could relate to the fact that this particular measure was normed on a child population rather than an adult population. Factor loading and the development of these factors for children and perhaps different in a child context rather than an adult responded from recalls of his/her past experiences.

The Response to Loss Scale (RLS) revealed significant discriminations between mothers of FTT infants and mothers of infants who thrive. The RLS significantly discriminated 14 out of 46 items between the two groups of mothers. There was an 88 percent correct classification of group membership on the RLS items.

The RLS is divided into five dimensions; Cognitive, Emotional, Spiritual, Imaginative, and Physical. Further analyses were done on the five dimensions to determine dimension discrimination for the two groups of mothers. The results indicated that two dimensions significantly discriminated between the two groups of mothers. Those dimensions were the Physical dimension and the Cognitive dimension. The Cognitive dimension results yielded a negative discrimination for mothers of infants who failed to thrive. The classification results percentage for the five dimensions ranged from 58 percent to 70 percent. The highest dimension classification percent was the Cognitive dimension and the lowest was the Physical dimension.

The results from each measure varied with respect to item discrimination and factor subfactor and dimension discrimination. Further statistical analysis was done to answer additional questions and obtain a clearer picture of personality attributes in mothers of FTT infants.

Supplementary analyses done on the RLS indicated no significant differences in the type and time of loss reported by the mothers of FTT infants. The results indicated that from the types of loss indicated on Response to Loss Scale (death of child, death of parent, divorce, breakup with girl/boyfriend, move to new area and other) the mothers of FTT type of losses reported was in the category of others. This category included losses such as miscarriage, retarded child, husband in jail, etc. There was a 36 percent of other losses reported for mothers of FTT infants. Losses, on the other hand, reported by mothers of infants who thrive indicated that 33 percent reported losses relating to death of a parent. A t test done on the type of loss for both groups of mothers indicated no significant differences.

Analysis done on the time of loss indicated no significant differences between the two groups of mothers. Forty percent of mothers of infants who fail to thrive reported losses occurring more than two years ago.

Further analyses to find the best set of variables as indicated from the discriminant analyses on each measure separately indicated that the MMPI scales; F, Pa, MF, Si and the RLS dimensions 1 and 3 significantly discriminated when combined in a separate discriminant function. This pooled function yielded a 78 percent correct classification of group memberships. No factors or subfactors from the CRPBI qualified for further analyses.

Correlation matrix analysis on the measure relationship revealed weak relationships among the three measures used. Of particular interest to this study was any relationship between the Depression scale on the MMPI and the Response to Loss dimensions. There was a weak relationship between the Depression scale and the RLS dimensions. This comparison was done to get a better understanding of losses that are manifested in depression. In addition, correlation between the Hypochondriasis scale on the MMPI which measures physical expression of emotions and the Physical dimension on the RLS also revealed a weak relationship ($r = .49$).

Correlation matrix analysis on the measure relationship revealed weak relationships among the three measures used.

Conclusions

Group Differences: MMPI

The results of the Minnesota Multiphasic Personality Inventory (MMPI) indicated that there were four scales which discriminated

between mothers of FTT infants and mothers of infants who thrive. Discrimination occurred on one validity scale, F, and three clinical scales, Pa, Si, and MF. The Pa scale discrimination was negative for mothers of FTT infants, an inverse discrimination compared with the F, Si and MF scales. Low scores on the Pa scale have a different meaning for normal subjects as compared to those who are identified as having psychological problems. In psychologically burdened individuals low scores indicate evasiveness and stubbornness; they are seen as self-centered and exhibit little concern for things that do not directly affect them; they have narrow interests and lack social concern and social skills.

Maladjusted to the distress their experiences have caused them, mothers of FTT infants seem to lack the skills to maintain interpersonal relationships. They have few outside contacts with support groups and appear to be isolated. This influence also is found in the study conducted by Kotelchuck et al. (1983). Leonard et al. (1960) described mothers of FTT infants as lacking a support systems, as being lonely and isolated. The results also presented here support the view that mothers of FTT infants have little family support, feel isolated, and possibly reside in neighborhoods that are not supportive (Kotelchuck and Newberger, 1983).

Contradictory to several previous studies which concluded that mothers of FTT infants are depressed, the MMPI scales did not discriminate in this area between the two groups of mothers in this study. Some of the literature indicates that these mothers are anxious and depressed (Barbero et al., 1963; Elmer, 1966; Evans, Reinhart, and

Saccop, 1980). However, other researchers suggest no discrimination in this respect (Pollitt, Eichler, and Chan, 1975). Differences found in the Pollitt et al. (1975) study apparently related to the expression of maternal affection, verbal interaction, and physical contact with the infant.

The results from this study indicate no discrimination between the two groups of mothers on the depression or anxiety scale. Furthermore, there was no discrimination on either the substance abuse or manic depressive scales, contrary to previous literature pointing to affective disturbances in mothers of FTT infants.

This research concludes that the mothers of FTT infants studied did not exhibit severe psychosis, but they did exhibit character disturbances. This supports Fischoff's assertion (Fischoff, Whitten, and Pettit, 1971).

A point which has not gained adequate recognition in the literature is the perceptions of mothers of FTT infants regarding the female role. These mothers were discriminated on the MF scale, which indicates they did not view themselves in traditional female roles. Various assumptions regarding this result could be posited. However, the two relevant clinical scales viewed together, MF and Si, could suggest that mothers of FTT infants lack the support of other women who potentially could give feedback regarding society's expectations, female roles, and changing roles. Without this network, such information is not received by mothers of FTT infants. Previous studies note other characteristics that lend support to the discrimination on the MF scale. Togart, Allen, and Lelchuck (1969) concluded that mothers of FTT infants have difficulties with sexual and aggressive

impulses as explored by projective tests. Another possible assumption is the lack of role modeling from their own mothers, which may suggest difficulties with object relations and inadequate models for nurturing behaviors. And yet a final assumption may point to gender related issues and identity confusion, which is learned at a very early age, within the family of the mother of FTT infants.

It was toward this area that the Children's Reports of Parental Behavior results were qualitatively reviewed. The CRPBI elicited retrospective reports from mothers of FTT infants about their own mothers.

Group Differences: CRPBI

The results of the Children's Reports of Parental Behavior Inventory (CRPBI) indicate significant differences on 24 items between mothers of FTT infants and mothers of infants who thrive. There were no significant differences with respect to the three factors or six subfactors.

The results of the CRPBI indicate that while mothers of FTT did not perceive their own mothers different from mothers of infants who thrive on Factor I, Acceptance versus Rejection; Factor II, Psychological Autonomy versus Psychological Control or Factor III, Firm Control versus Lax Control, evidence points to items which give some indications that mothers of FTT infants perceive their own mothers as different from the mothers of infants who thrive on specific items. For example, the first four items that discriminated between the two groups in a stepwise analysis were:

1. "Mother has a good time at home with me."

2. "Mother enjoys talking things over with me."
3. "If I break a promise, mother does not trust me again for a long time."
4. "Mother smiles at me very often."

The items seemed to be very different in terms of types of interactions between the two groups of mothers. However, further content analysis is needed.

Further, the subfactor with the highest correct classification, "Childcenteredness" on the CRPBI could possibly indicate that mothers of FTT infants are still emotionally responding to the disturbance in the object relations process.

There was a 98 percent correct classification of group membership using overall CRPBI, which indicates the items as a whole are good discriminator variables for this population. However, there were no significant differences on the factors or subfactors between the two groups of mothers. In other words, although mothers of FTT infants perceived their mothers differently as compared to the control group, supplementary analyses did not identify specific factors or subfactors.

How these feelings of mothers of FTT infants toward their own mothers are dealt with moves us in the direction of discussing the Response to Loss Scale.

Group Differences: RLS

The results of the Response to Loss Scale (RLS) indicated significant differences between mothers of FTT infants and mothers of infants who thrive. There was an 88 percent correct classification of group membership using the RLS, which suggests loss is a good discriminating

variable for this population. Even more significant was when the items were analyzed on each of the five dimensions, two proved most powerful--Physical and Cognitive. The Physical Dimension discriminated positively and the Cognitive Dimension discriminated negatively for mothers of FTT infants. This may mean that mothers of FTT infants tend to channel unpleasant feelings and uncomfortable thoughts into physical coping behavior. For example, a typical response in the Phsycial Dimension is characterized by the following: My level of energy has decreased since my loss.

The Cognitive Dimension proved more applicable to the control group, that is, mothers of infants who thrive tend to use cognitive strategies to cope with their losses when compared to mothers of FTT infants. Mothers of FTT infants are less likely to use cognitive processing of reality -- its meaning, significance, and consequences. An example of a typical response pattern characterizing this dimension would be: "I think about my loss and how my life is being affected."

The most interesting finding seems to point to similar mechanisms of handling uncomfortable feelings through physical channels on the part of mothers of FTT infants and the infants themselves. This supports earlier studies which suggested the word <u>failure</u> refers to the mother's own failure, and that her response to her inadequate mothering skills and other conflicts in the relationships to her infant, is dealt with physically. For example, a typical response in the Physical Dimension which supports this assumption is: "I am easily exhausted by any effort."

A t-test revealed no significant differences on the type and time of the reported loss between mothers of FTT infants and mothers of infants who thrive. This could possibly indicate a vague sense of conceptualization of losses experienced by mothers of FTT infants.

Limitations

There are three major limitations to this research. These concern subject selection, design, and the nature of the measure.

Subject selection

Since it was very difficult to gather a large sample, mothers in both the control and experimental groups were solicited through three outpatient pediatric clinics. Two of these were hospital based and one was not. In addition, the population was taken from a specific geographical area, two cities in Michigan. Also, an increasing problem for researchers is that infants diagnosed as nonorganic failure to thrive are being taken away from their natural mothers by protective services and courts (Katz et al., 1975). In many states, failure to thrive is a red flag for neglect. In this study, special care was taken to solicit mothers and infants who were not separated, but the fact some are separated and others are not may influence differences in the groups. Due to this, the researchers may have statistically omitted that group of mothers where the pathology is the greatest. It is reasonable to hypothesize that FTT babies removed from the mother by the courts, might be more severe cases physically, that is in more jeopardy of death. It also is possible that the mothers whose infants were taken from them might categorically differ from mothers allowed to keep their babies; for example, they may have been less

likeable or more belligerent or even less attractive and, therefore, court personnel might be more inclined to "rescue babies from these types of mothers."

The selection and recruitment of mothers were not random, and findings thus cannot be generalized to other mothers. It is also important to note that all mothers of FTT infants and controls who participated in the study had not undergone psychotherapy. Furthermore, other characteristics not considered in this research may be important as well, such as marital status, number in the household, and sibling position of the FTT infant.

Finally, the small number of subjects in each group may have contributed to inprecision and a decrease in the power of the analysis, especially with respect to the subfactors and dimensions. The effects of too small a sample size will be addressed in the next section. Also, even though the groups were carefully matched, there was a slight variance in the outcome for within-group analysis.

Design and Methodology

Some constraints are inherent to discriminant analysis. Because this is a predictive technique, the most important limitation was the inability to point to causation in the failure to thrive etiology due to maternal personality. However, some conclusions may be reached regarding the maintenance of the FTT syndrome if mothers have certain personality characteristics.

Numerous factors may account for the differences between these groups of mothers on the measures used, among them parental education and occupational level, relationship with other siblings and family,

and others mentioned earlier. All possibly could interact differently under varying conditions.

The stepwise procedures used in discriminant analysis produce an optimal set of discriminating variables, but this set may not be the best (maximal) combination. To secure a maximal solution, one would have to test all possible combinations (all possible pairs, all possible triplets, and so on). Such testing is costly and time consuming. The stepwise procedure is a logical and efficient way to seek the best combination, but it does not guarantee end results superior to all others.

Measures

The dependent variables had specific limitations. They were all gathered by self-report from mothers. In particular, the Children's Reports of Parental Behavior scales were designed to measure perceptions of the mother's own mother's behavior in retrospect. Differences in the way the groups responded may not necessarily reflect the way mothers actually behaved. In fact, research has shown that when parents and children take retrospective parenting scales, they differ widely in what they report. In addition, the CRPBI may not reflect faulty memory or perception so much as different ideals as to what a mother should be or the needs of different personalities, for example, the desire to be evaluated as socially acceptable because one had a good mother.

Issues of reliability and validity are also relevant to the Response to Loss Scale. This is a relatively new measure and needs further clinical usage. Although the RLS discriminated on some variables, the discriminating power may have been low.

The limitations of this study thus include possible threats to validity and reliability as well as possible problems connected to subjects and design. The result may be less power and precision, which would cause some items not to reach statistical significance.

Caution and care must be taken in interpreting the scale(s) that discriminated between the two groups of mothers. The MMPI scales may not yield clinical meaningfullness when integrated on a two-point (pair) profile basis; in fact, such scales such as (5-0/0-5) have received little research attention (Green, 1980). Although two-point pair interpretation enhances the homogeneity of the groups responding, it also substantially reduced the number of profiles that can be classified within any high-point pair. One must keep in mind that the high-point pair interpretations in this research or in any interpretative system are probabilistic statements which may or may not apply to specific clients or groups.

Discussions

Clinical Assumptions

Although the mean scores for mothers of FTT infants and mothers of infants who thrive were not in the clinical range (t score above 70), scales that discriminated were statistically significant. Therefore, the findings must be interpreted for clinical purposes with caution.

These characteristics, although not in the clinical range of the MMPI means have been repeatedly observed in mothers of FTT infants. This research indicates that mothers of FTT infants have certain general personality characteristics. They tend to withdraw from social contact and responsibilities, and they appear to be insecure and uncomfortable in social situations. They tend to be shy, reserved, timid and

retiring. They might be described by others as cold and distant, which may be incorrectly interpreted as representative of depression. They tend to be overly sensitive about what others think of them. They tend to be overcontrolled and are unlikely to display their feelings directly. They typically have few friends and lack a supportive network of friends or relatives. They are isolated and hence receive little if any feedback on social expectations or values from other women.

Mothers of FTT infants have experienced different relationships with their own mothers which influences their relationship with their infant. It appears as if they have not had adequate mothering models. These mothers tend to channel uncomfortable feelings as well as past and present losses through physical mechanisms of coping, i.e., lack of sleep and appetite. However, the mechanism through which unpleasant feelings are translated physically is not yet clearly understood, and this issue was not a focus of this research, but deserves researchers' attention.

It is the investigator's assumption that mothers of FTT infants with these personality characteristics included in this study may be perceived by some mental health professionals as a high risk for abusive behaviors. However, the MMPI scales that discriminated these mothers contradict earlier MMPI profile studies regarding abusive mothers as reported by Paulson et al. (1976). The authors found that significant elevations on Pd (Psychopathic Deviate) and Ma (Hypomania) scales differentiated between abusive parents and controls. These behaviors exhibited by FTT mothers are essentially self-destruction (alcoholism or other unconscious manisfestations of hostility); consequently, FTT mothers are seen as neglectful rather than abusive.

This may be one reason social agencies such as protective services rush in to rescue the infant from the mother. However, through the agency's eagerness to protect the child, the mother becomes a victim of yet more loss, separation, and individuation, disruption which possibly reinforces her childhood memories of her own rather confused relationship with her own mother.

Mothers of FTT infants apparently have learned to cope with unpleasant memories and losses through physical channels. This affects the emotional maintenance of the infant, who fails to thrive due to severe emotional deprivation and lack of object relation development with its mother.

The sense of loss reported by mothers of FTT infants appears to have little relationship to recent events and may stem from a more general cause, possibly perceived loss in relationship to her own mother, maintained through intrapsychic conflicts. Furthermore, since the separation-individuation process is so disturbed, the infant's behavior reflects its own intrapsychic vicissitudes, similar to what occurred in the mother's own childhood.

Although many hypotheses can be generated from theory to explain the results of this research, continued study is needed to clarify, confirm, and possibly contradict these and other findings.

In summary, there appears to be strong evidence from these findings of the significance of maternal personality structure in the FTT syndrome and that "ghosts in the nursery" do haunt mothers of FTT infants. The mother's childhood experiences and relationships with her own mother feed the cycle of failure to thrive. Additional work is needed to understand the mechanisms operating among personality, emotions, behavior, and interactions.

Specific treatment recommendations would be helpful to consider in light of the outcome of this research. It is clear that mothers of infants who fail to thrive need special attention and treatment. It has been the researchers' experience that these mothers are not adequately treated. Treatment must extend beyond the social services agencies and treatment for the child at risk for FTT. Mothers should be the primary focus of extensive treatment. Referrals to psychiatrists and/or psychologists would be recommended. Specific to the recommendations of psychiatrist would be the affective component may be effected. We have concluded from the data that mothers of FTT infants cope with losses and other experiences physically. What seems to be unclear is the categories of the resolution; endogenous depression or exdogenous depression.

Separate t-test was done in the Depression scale of the MMPI. The results indicated that there was no significant differences between the two groups of mothers on this scale.

Further, specific recommendations to psychologists would be effective psychotherapy employed to work through the continued reinforcement of conflicts regarding the mother's relationship with her infants as a result of earlier disturbed relationship with her own mother. Suggestions for type of psychotherapy would vary and at this time need further investigation. It is clear that this study needs replicating to continue to confirm or contradict these results.

Implications for Future Research

A number of implications for future research can be drawn from this study. First, it is clear that mothers of FTT infants exhibit more character disturbances compared with mothers of infants who thrive. Changes in the measures used and in the design could enhance the ability to detect specific types of character disturbances, that is borderline tendencies, narcissism, and so forth. One factor to consider in this regard is increasing the number of subjects.

Although mothers of FTT infants were difficult to locate due to neglect laws and protective service policies which separate mothers and infants, a larger number of subjects for each group would reduce alternative explanations for differences. In addition, a careful selection of other dependent variables chosen, perhaps, from the array suggested by this study would increase the ability to detect differences, especially on factors and subfactors. Furthermore, a follow-up study of mothers whose infants are removed from their care would clarify personality development due to yet another loss in object relationships.

These suggestions are relevant to the investigation of personality differences in mothers of FTT infants, but it is also evident that these mothers perceive their own mothers differently. An increase in the number of subjects would allow an illuminating investigation of more specific descriptions of that relationship. Although the present CRPBI measure indicated a 98 percent correct classification on the basis of own mother perceptions, a broader family context might also be useful. Knowledge about siblings, fathers, and other individuals in the mother's childhood could help explain whether the social isolation is a personality characteristic or is learned behavior due to lack of social contact.

It is possible that the use of other statistical analyses to compare mothers of FTT infants with mothers of infants who thrive would have produced other factors of significance, especially with respect to the subfactors.

Continued use and analysis of the Response to Loss Scale is needed to better define its relevance with respect to actual or perceived loss. It seems clear that mothers of FTT infants cope with losses through physical mechanisms. Future investigations could examine this translation of unpleasant feelings through physical means. Again, this appears to be the way FTT infants cope with emotional conflict.

Differences in how mothers of FTT infants responded to items on the MMPI could further be examined in relation to responses on the CRPBI and RLS compared to mothers of infants who thrive.

Type of loss identified for mothers of FTT infants could be further examined with respect to early perceived behaviors of their own mothers. This could possibly indicate a stronger relationship to poorly developed object relations in mothers of FTT infatns.

Instrument and method refinement would add to the investigation of how the sense of loss translates into behavioral interaction. How do mothers of FTT infants interact differently than other mothers during various activities with their infants? Other questions could be answered regarding perceptions of fathers and spouses by mothers of FTT infants.

It would be useful to examine behavior, loss, and other experiences of mothers of FTT infants before and after their infants have been removed because of neglect. Although this would provoke a great deal of emotion, knowing how and whether the mother expresses continued loss

and hostility upon removal of the infant would add significantly to the literature. Clearly, there seems to be some need and effort on the part of these mothers to try to resolve and handle their loss and conflictual perceptions of earlier experiences of their own mothers.

The research made no use of in-depth personal interviews, but that technique or the formation of a group of mothers of FTT infants could be enlightening for potential areas of research and of possible treatment benefit to the mothers. They typically are not treated or receive no professional attention after their infant is labelled.

Another fruitful line of inquiry would be comparison of mothers with organic and nonorganic FTT infants.

Relevant and practical research also could show how the mother's personality characteristics affect daily living and how this information could be used by public health and mental health professionals who have contact with FTT infants and their mothers. It is strongly recommended that this research be replicated to continue to confirm or contradict these findings.

APPENDIX A

TEST PACKET MATERIALS

Dear Mothers:

I would like to stress a few points before you begin filling out the measure. I would like to emphasize the importance of these points in insuring that after your time and effort your responses are not thrown out because they are unusable.

Michigan State University - Research Consent Form

Please read this consent form. This form briefly states that we have explained to you what we are doing. Upon reading the form please sign your name and the date. NOTE: All information and results shall remain confidential.

Demographic Data

Please check your age range, educational level and your income level range.

Children's Report of Parental Behavior Inventory

Given are 56 statements concerning parental practices. Please respond if the statements are: like; somewhat like; or not like your experiences, with your mother.

Response to Loss Instrument

Given are three sections: The first section check the appropriate response to: The loss I am thinking about... (NOTE: response choices are listed below this statement). The second section asks you to respond to: The loss in my life occurred....(NOTE: response choices listed below statement). The third section consists of 46 items. Code each one with either an 0, 1, 2, or 3 as described at the top of the page:

0 = does not describe me
1 = sometimes describes me
2 = most of the time describes me
3 = accurately describes me

M.M.P.I.

This is an inventory of your opinon to statements in which you are to answer T (true) or F (false). Open the cover to the first page where directions are given to you in more detail.

Please be as honest as you can be when filling out. Thank you very much!!

Beverly Roberts
(517) 353-3100

Appendix A

MICHIGAN STATE UNIVERSITY

RESEARCH CONSENT FORM

1. I have freely consented to take part in a scientific study being conducted by Beverly Roberts under the supervision of Dr. William C. Hinds Academic Title: Professor, Counseling Psychology.

2. The study, "Non-Organic Failure to Thrive Infants: An Analysis of Mothers' Personalities," has been explained to me and I understand the explanation and the time of one and one-half hours involved in completion of the instruments. In addition, I understand the purpose of this project is to explore variables that may be helpful in the identification and treatment of infants with failure to thrive syndrome.

3. I am aware that responding to the instruments in this research might lead to negative and unpleasant emotions. However, if there is a need, I shall contact the researcher at 353-3012 for further counseling.

4. I understand that I am free to discontinue my participation in the study at any time without penalty, and my participation or nonparticipation will not effect treatment.

5. I understand that the results of the study will be treated in strict confidence and that I will remain anonymous. Within these restrictions, results of the study will be made available to me at my request.

6. I understand that my participation in the study does not guarantee any beneficial results to me.

7. I understand that, at my request, I can receive additional explanation of the study after my participation is completed.

I have read and understand this consent form:

_____

Signature

_____

Date

Rev./11/23/83 BR

APPENDIX A

Demographic Data

Thank you for agreeing to participate in this project. Before you complete the measures, would you provide me with some data by checking the appropriate boxes?

My age range is:

- ☐ Under 16 years
- ☐ 16 - 23 years
- ☐ 24 - 30 years
- ☐ 31 - older

Educational level is:

- ☐ Completed high school
- ☐ Did not complete high school
- ☐ College graduate
- ☐ Professional

Income level of household:

- ☐ $10,000 - Below
- ☐ 10,000 - 15,000
- ☐ 16,000 - 25,000
- ☐ 25,000 - Above

APPENDIX A

Children's Report of Parental Behavior Inventory

Instructions

I am interested in learning more about the different experiences that people have had with their mothers. I am, therefore, asking a number of women to report their experiences of their mothers during childhood. Read each item on the following pages and fill in the descriptor that most closely describes the way your mother behaved toward you. Be sure to mark each item.

Children's Report of Parental Behavior Inventory

APPENDIX A

Like	Somewhat Like	Not Like		
L	SL	NL	1.	Mother makes me feel better after talking over my worries with her.
L	SL	NL	2.	Mother likes to talk to me and be with me much of the time.
L	SL	NL	3.	Mother is easy with me.
L	SL	NL	4.	Mother seems to see my good points more than my faults.
L	SL	NL	5.	Mother feels hurt when I do not follow advice.
L	SL	NL	6.	Mother usually does not find out about my behavior.
L	SL	NL	7.	Mother worries about how I will turn out, because she takes anything bad I do seriously.
L	SL	NL	8.	Mother almost always speaks to me with a warm and friendly voice.
L	SL	NL	9.	Mother is always thinking of things that will please me.
L	SL	NL	10.	Mother lets me off easy when I do something wrong.
L	SL	NL	11.	Mother understands my problems and my worries.
L	SL	NL	12.	Mother thinks I am not grateful when I do not obey.
L	SL	NL	13.	Mother does not pay much attention to my misbehavior.
L	SL	NL	14.	If I break a promise, mother does not trust me again for a long time.
L	SL	NL	15.	Mother enjoys talking thing over with me.
L	SL	NL	16.	Mother gives me a lot of care and attention.
L	SL	NL	17.	Mother cannot say no to anything I want.
L	SL	NL	18.	Mother enjoys going on drives, trips or visits with me.
L	SL	NL	19.	Mother feels hurt by the things I do.
L	SL	NL	20.	Mother does not insist that I do my homework.
L	SL	NL	21.	Mother says some day I will be punished for my bad behavior.
L	SL	NL	22.	Mother smiles at me very often.
L	SL	NL	23.	Mother often gives up something to get something from me.
L	SL	NL	24.	Mother excuses my bad behavior.
L	SL	NL	25.	Mother is able to make me feel better when I am upset.

-Continued-

Like	Somewhat Like	Not Like		
L	SL	NL	26.	Mother tells me how much she has suffered for me.
L	SL	NL	27.	Mother does not check up to see whether I have done what she told me.
L	SL	NL	28.	Mother thinks and talks about my misbehavior long after it is over.
L	SL	NL	29.	Mother enjoys doing things with me.
L	SL	NL	30.	Mother makes me feel like the most important person in her life.
L	SL	NL	31.	Mother lets me stay up late if I keep asking.
L	SL	NL	32.	Mother enjoys working with me in the house or yard.
L	SL	NL	33.	Mother says if I loved her, I would do what she wants me to do.
L	SL	NL	34.	Mother seldom insists that I do anything.
L	SL	NL	35.	Mother says that someday I will be sorry that I was not better as a child.
L	SL	NL	36.	Mother comforts me when I am afraid.
L	SL	NL	37.	Mother enjoys staying at home with me more than going out with friends.
L	SL	NL	38.	Mother does not insist I obey if I complain or protest.
L	SL	NL	39.	Mother cheers me up when I am sad.
L	SL	NL	40.	Mother tells me of all the things she has done for me.
L	SL	NL	41.	Mother does not bother to enforce rules.
L	SL	NL	42.	Mother thinks that any misbehavior is very serious and will have future consequences.
L	SL	NL	43.	Mother often speaks of the good things I do.
L	SL	NL	44.	Mother makes her whole life center about her children.
L	SL	NL	45.	I can talk mother out of an order, if I complain.
L	SL	NL	46.	Mother has a good time at home with me.
L	SL	NL	47.	Mother says if I really cared for her, I would not do things that cause her to worry.

-Continued-

Like	Somewhat Like	Not Like		
L	SL	NL	48.	Mother lets me get away without doing work I have been given to do.
L	SL	NL	49.	Mother says that sooner or later we always pay for bad behavior.
L	SL	NL	50.	Mother seems proud of the things I do.
L	SL	NL	51.	Mother spends almost all of her free time with her children.
L	SL	NL	52.	Mother can be talked into things easily.
L	SL	NL	53.	Mother is not interested in changing me, but likes me as I am.
L	SL	NL	54.	When I do not do as she wants, mother says I am not grateful.
L	SL	NL	55.	Mother lets me get away with a lot of things.
L	SL	NL	56.	Mother will talk to me again and again about anything bad I do.

3/4/83

RESPONSE TO LOSS INSTRUMENT (FORM A)

APPENDIX A

INSTRUCTIONS

The items below consist of possible responses to events experienced as a loss. Choose a loss that is still unresolved for you. Use a separate form for each unresolved loss. If you have difficulty thinking of a loss, use the LIFE EXPERIENCES SURVEY as a source list of possible losses. Answer the items below in terms of your response to this loss during the last month, INCLUDING TODAY. You can indicate the degree to which you are having these responses according to the following scheme:

0 = does not describe me
1 = sometimes describes me
2 = most of the time describes me
3 = accurately describes me

The loss I am thinking about is (check one):

0 = death of a spouse

1 = death of a child

2 = death of a parent

3 = death of a friend

4 = job related loss

5 = divorce

6 = breakup with girl friend or boy friend

7 = moving to a new area, including leaving home for the first time

8 = other, please specify _____

9 = no loss

The loss in my life occurred (check one):

0 = within the last 3 months

1 = 4 months to 6 months ago

2 = 7 months to 1 year ago

3 = 13 months to 2 years ago

4 = more than two years ago

1. When I think about my loss, I feel that I have nothing to look forward to.

2. I have many feelings in my life about the loss.

3. When I think about the loss, I feel pain all through my body.

0 = does not describe me
1 = sometimes describes me
2 = most of the time describes me
3 = accurately describes me

4. I daydream about scenes from my life before this loss.

5. I am not as frightened of dying as I was before the loss.

6. I am not involved in activites that I was involved in before the loss.

7. I think about what I have lost and I think about how my life is being affected.

8. I often weep or sob about the loss.

9. My eating habits have changed since the loss; I am eating less.

10. I have conversations with the persons I have lost.

11. This loss is a reminder of the limitations of my human power.

12. I do not seek out new relationships.

13. I am aware of what will never again be a part of my life because of the loss.

14. I feel angry about some of the consequences of the loss.

15. I do not sleep as well as I did before the loss.

16. I sense the presence of the person I have lost.

17. My beliefs no longer give me the comfort they did before the loss.

18. I seek out old friends who will not make demands on me.

19. I think about the loss a lot.

20. I feel sadness whenever I am reminded of my loss.

21. I find myself sighing frequently.

22. I am easily exhausted by any effort.

23. My dreams about the loss seem to help me accept and understand it.

24. This loss has destroyed some of my most cherished beliefs.

25. I find myself walking somewhere and I forget where I am going.

APPENDIX A

0 = does not describe me
1 = sometimes describes me
2 = most of the time describes me
3 = accurately describes me

26. I know that what I have lost will never return.

27. I am angry with some people associated with my loss.

28. My whole body feels heavy.

29. I imagine I am talking to the person I have lost.

30. My faith has been shaken by this loss.

31. When I admit it to myself, I feel sad most of the time about the loss.

32. I spend time sifting through past experiences related to what I have lost.

33. The tears have been hard to stop this week.

34. My level of energy has decreased since the loss.

35. I have vivid dreams about people and places that are connected to my loss.

36. Before my loss, I believe that I was special and nothing bad would happen to me; I no longer believe this.

37. I lose track of what's happening in conversations.

38. I know I am helpless to change the situation and bring back what is lost.

39. I feel guilty about some things I did or did not do just before the loss.

40. When I have a choice of being with a group of people or being alone, I choose to be alone.

41. I find myself longing for what or who I have lost.

42. When I choose to be with other people, I sit quietly and do not initiate conversations.

43. I communicate to people who are no longer a part of my life through fantasy, prayer or imagination.

44. Many more people irritate me now than did before the loss.

45. Because of this loss, I now know I will die.

46. I feel supported by at least one other person.

APPENDIX B

SUMMARY OF THE FIVE DIMENSIONS OF THE RESPONSE TO LOSS INSTRUMENT

APPENDIX B

Summary of the Five Dimensions of the
Response to Loss Instrument

COGNITIVE RESPONSE TO LOSS

1. When I focus on my loss, I feel that I have nothing to look forward to.
2. I think about what I have lost, and I think about how my life is being affected.
3. I am aware of what will never again be a part of my life because of my loss.
4. I think about the loss a lot.
5. I know that what I have lost will never return.
6. I spend time sifting through past experiences related to what I have lost.
7. I know I am helpless to change the situation and bring back what is lost.

EMOTIONAL RESPONSE TO LOSS

1. I have many feelings about the loss.
2. I often weep or sob about the loss.
3. I feel angry about some of the consequences of the loss.
4. I feel sadness whenever I am reminded about my loss.
5. I am angry with some people associated with my loss.
6. When I admit it to myself, I feel sad most of the time about my loss.
7. The tears have been hard to stop this week.
8. I feel guilty about the loss.
9. I find myself longing for what or who is lost.
10. Many more people irritate me now than did before the loss.

PHYSICAL RESPONSE TO LOSS

1. When I think about the loss, I can feel pain all through my body.
2. My eating habits have changed since the loss; I am eating more.
3. My eating habits have changed since the loss; I am eating less.
4. I do not sleep as well as I did before the loss.
5. I find myself sighing frequently.
6. I am easily exhausted by any effort.
7. My whole body feels heavy.
8. My level of energy has decreased since the loss.

IMAGINATIVE RESPONSE TO LOSS

1. I daydream about scenes from my life before this loss.
2. I have conversations with the person I have lost.
3. I sense the presence of the person I have lost.
4. My dreams about the loss seem to help me accept and understand my loss.
5. I imagine I am talking to the person I have lost.
6. I have vivid dreams about people and places that are connected to my loss.
7. I communicate to people who are no longer a part of my life, through fantasy, prayer, and/or my imagination.

Continued

SPIRITUAL RESPONSE TO LOSS

1. I am not as frightened of dying as I was before the loss.
2. This loss is a reminder of the limits of my human power.
3. My beliefs no longer give me the comfort they did before the loss.
4. This loss has challenged some of my most cherished beliefs.
5. I am increasingly aware of my own mortality.
6. My faith has been shaken by this loss.
7. Before my loss, I believed that I was special and nothing bad would happen to me; I no longer believe this.

APPENDIX C

THREE FACTORS AND ITEM COMPOSITION FROM THE CHILDREN'S REPORT OF PARENTAL BEHAVIOR INVENTORY

APPENDIX C

Children's Reports of Parental Behavior Inventory

Concepts and Sample Items

Concepts	Sample Items from Scales
1. Acceptance	Makes me feel better after talking over my worries with him. Cheers me up when I feel sad. Isn't interested in changing me, but likes me as I am.
2. Childcenteredness	Is always thinking of things that will please me. Makes me feel like the most important person in his life. Makes his whole life center about his children.
3. Control through Guilt	Feels hurt when I don't follow advice. Feels hurt by the things I do. When I don't do the things he wants, says I'm not grateful for all he has done for me.
4. Lax Discipline	Is easy with me. Can't say no to anything I want. Does not insist I obey if I complain or protest.
5. Instilling Persistent Anxiety	If I break a promise, doesn't trust me again for a long time. Says some day I'll be punished for my bad behavior. Will talk to me again and again about anything bad I do.
6. Enforcement	Is very strict with me. Gives hard punishment. Sees to it that I obey when he tells me something.
7. Withdrawal of Relations	Will not talk to me when I displease him. Is less friendly with me if I don't see things his way. If I've hurt his feelings, stops talking to me until I please him again.
8. Extreme Autonomy	Allows me to go out as often as I please. Doesn't tell me what time to be home when I go out. Lets me dress in any way I please.

Department of Psychology
State University of New York at Stony Brook
Stony Brook, New York 11794
telephone: (516) 246-6710

StonyBrook

October 18, 1983

Ms. Beverly Roberts
Department of Psychiatry
A-230 East Fee Hall
Michigan State University
East Lansing, Michigan 48824

Dear Ms. Roberts:

I am enclosing two different forms of our CRPBI. The shorter form, 56 items, is the one we reported on. The second, 61 items, is our latest revision. We have added 25 items and made some minor changes. As you can see, we now have the children respond for both parents at the same time, saving some time.

On the new form, six questions (6, 20, 27, 34, 36 and 41) have been reversed. Nine questions were slightly changed, but their meaning and direction remains the same (12, 14, 17, 19, 21, 24, 25, 42, and 54).

Factor I, Acceptance vs Rejection: Acceptance, items 4, 11, 22, 43, 50, 53. Child Centeredness; 1, 2, 8, 9, 15, 16, 18, 23, 25, 29, 30, 32, 3[illegible], 37, 39, 44, 48, 51.

Factor II, Psychological Autonomy vs Psychological Control: Control through Guilt; 3, 12, 14, 19, 26, 28, 33, 40, 47, 54, 56. Instilling Persistent Anxiety, 7, 21, 35, 42, 49.

Factor III, Firm Control vs Lax Control: Lax Discipline; 6, 20, 27, 34, 36, 41. Nonenforcement of Rules, 5, 10, 13, 17, 24, 31, 45, 46, 52, 55.

If I can be of any further assistance, please contact me. Good luck with your study.

Sincerely,

Sheldon Weintraub, Ph.D.
Director
Stony Brook Family Project

SW:lg
Encs.

APPENDIX C

The Life Experiences Survey Source List

1. Marriage
2. Detention in jail
3. Death of spouse
4. Death of close friend
5. Foreclosure on mortgage loan
6. Outstanding personal achievement
7. Minor law violation
8. Changed work situation
9. New job
10. Serious illness of close friend or relative
11. Sexual difficulties
12. Trouble with in-laws
13. Gaining new family member
14. Change in spouses work
15. Change in amount of recreation
16. Abortion/miscarriages
17. Change in living conditions
18. Divorce
19. Retirement
20. Son or daughter leaving home
21. Separation from spouse

MMPI

MINNESOTA MULTIPHASIC PERSONALITY INVENTORY

S.R. Hathaway and J.C. McKinley

PROFILE

ADDRESS _____

OCCUPATION _____ DATE TESTED ___/___/___

EDUCATION _____ AGE _____

MARITAL STATUS _____ REFERRED BY _____

FEMALE

T or Tc	?	L	F	K	1 Hs+5K	2 D	3 Hy	4 Pd+4K	5 Mf	6 Pa	7 Pt+1K	8 Sc+1K	9 Ma+2K	0 Si	A	R	Es	MAC	T or Tc
Raw Score																			

Fractions of K

K	5	4	2
30	15	12	6
29	15	12	6
28	14	11	6
27	14	11	5
26	13	10	5
25	13	10	5
24	12	10	5
23	12	9	5
22	11	9	4
21	11	8	4
20	10	8	4
19	10	8	4
18	9	7	4
17	9	7	3
16	8	6	3
15	8	6	3
14	7	6	3
13	7	5	3
12	6	5	2
11	6	4	2
10	5	4	2
9	5	4	2
8	4	3	2
7	4	3	1
6	3	2	1
5	3	2	1
4	2	2	1
3	2	1	1
2	1	1	0
1	1	0	0
0	0	0	0

FOR RECORDING ADDITIONAL SCALES

MMPI Code

Group MEANS

193

1 control —•—

2 Experimental —

Scorer's Initials _____

INTERPRETIVE

MMPI

MINNESOTA MULTIPHASIC™
PERSONALITY INVENTORY
S.R. Hathaway and J.C. McKinley

PROFILE

NAME _____

ADDRESS _____

OCCUPATION _____ DATE TESTED ___/___/___

EDUCATION _____ AGE _____

MARITAL STATUS _____ REFERRED BY _____

MALE

T or Tc	?	L	F	K	1 Hs+5K	2 D	3 Hy	4 Pd+4K	5 Mf	6 Pa	7 Pt+1K	8 Sc+1K	9 Ma+2K	0 Si	A	R	Es	MAC	FOR RECORDING ADDITIONAL SCALES	T or Tc
120																				120
115																				115
110																				110
105																				105
100																				100
95																				95
90																				90
85																				85
80																				80
75																				75
70																				70
65																				65
60																				60
55																				55
50																				50
45																				45
40																				40
35																				35
30																				30
25																				25
20																				20
T or Tc	?	L	F	K	1 Hs+5K	2 D	3 Hy	4 Pd+4K	5 Mf	6 Pa	7 Pt+1K	8 Sc+1K	9 Ma+2K	0 Si	A	R	Es	MAC		T or Tc

Fractions of K

K	5	4	2
30	15	12	6
29	15	12	6
28	14	11	6
27	14	11	5
26	13	10	5
25	13	10	5
24	12	10	5
23	12	9	5
22	11	9	4
21	11	8	4
20	10	8	4
19	10	8	4
18	9	7	4
17	9	7	3
16	8	6	3
15	8	6	3
14	7	6	3
13	7	5	3
12	6	5	2
11	6	4	2
10	5	4	2
9	5	4	2
8	4	3	2
7	4	3	1
6	3	2	1
5	3	2	1
4	2	2	1
3	2	1	1
2	1	1	0
1	1	0	0
0	0	0	0

MMPI Code

Scorer's Initials _____

Raw Score ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

K to be added ___ ___ ___ ___ ___

Raw Score with K

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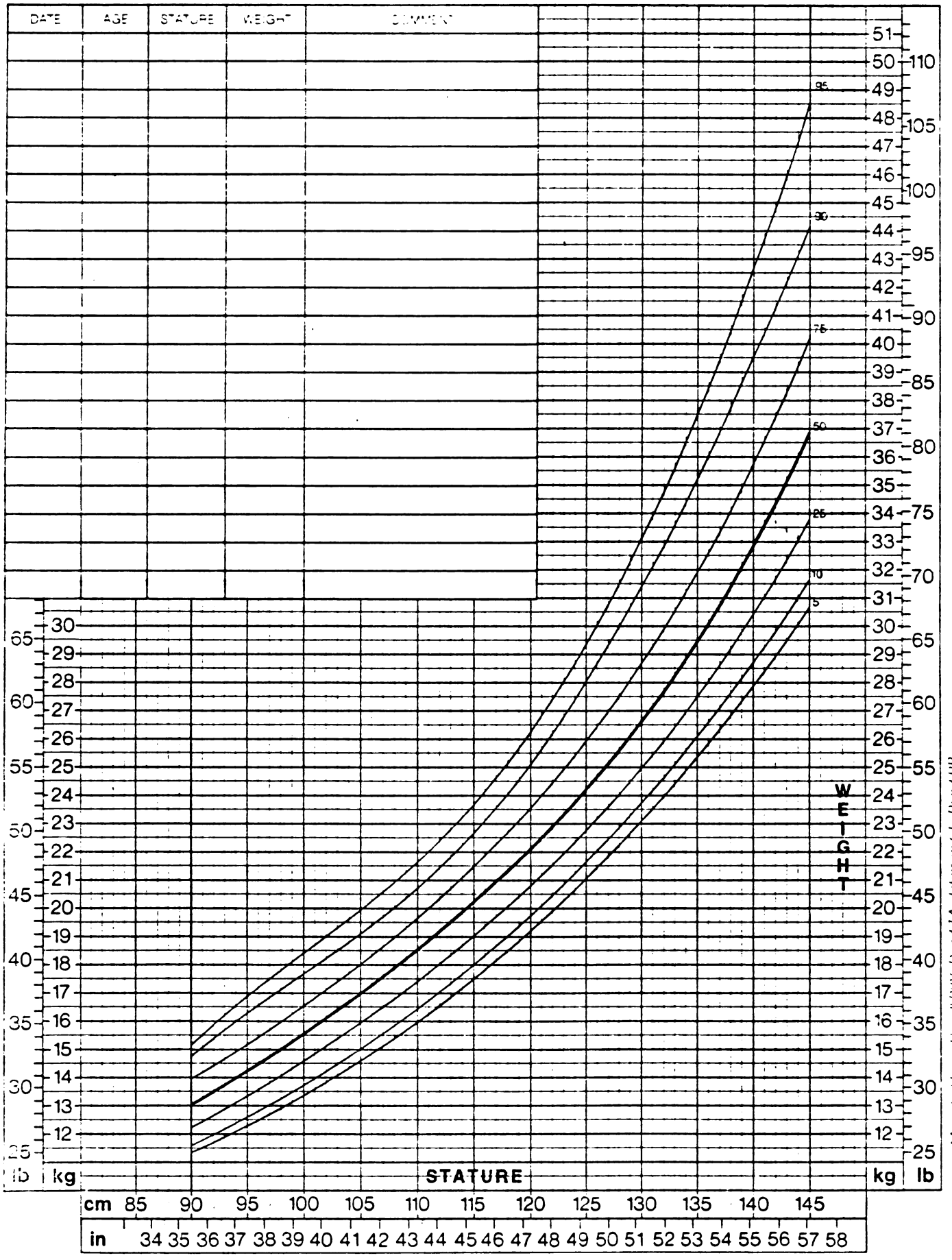
INTERPRETIVE SCORING SYSTEMS NCS™

BOYS: PREPUBESCENT
PHYSICAL GROWTH
NCHS PERCENTILES*

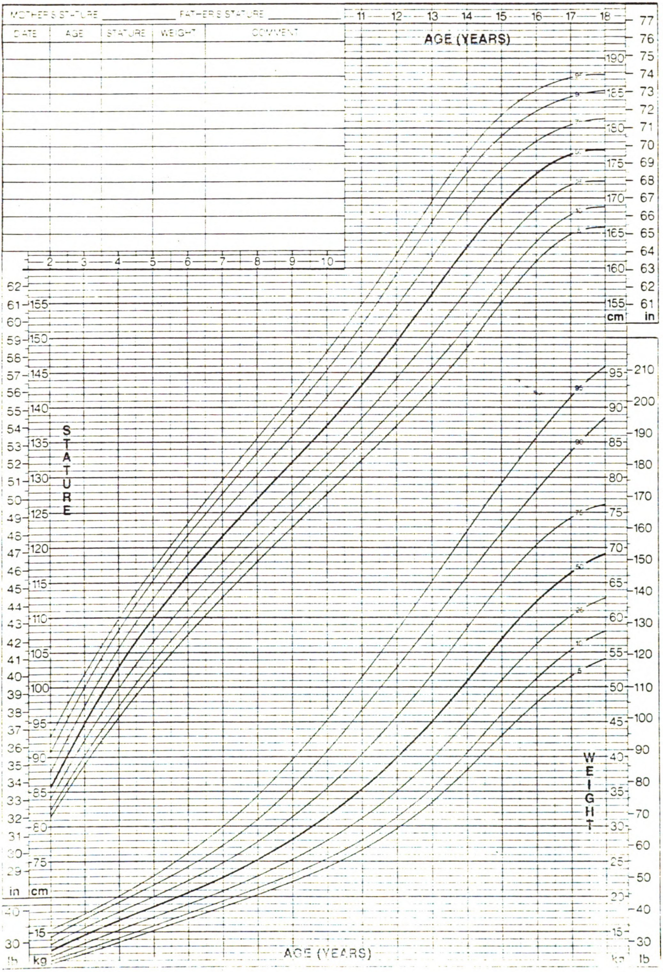
NAME _____ RECORD # _____



*Adapted from Hamill PVV, Drizd TA, Johnson CL, Reed RB, Roche AF, Moore WM. Physical growth: National Center for Health Statistics percentiles. AM J CLIN NUTR 32:607-629, 1979. Data from the National Center for Health Statistics (NCHS), Hyattsville, Maryland.

BOYS: 2 TO 18 YEARS PHYSICAL GROWTH NCHS PERCENTILES*

NAME ______________________ RECORD # ______________



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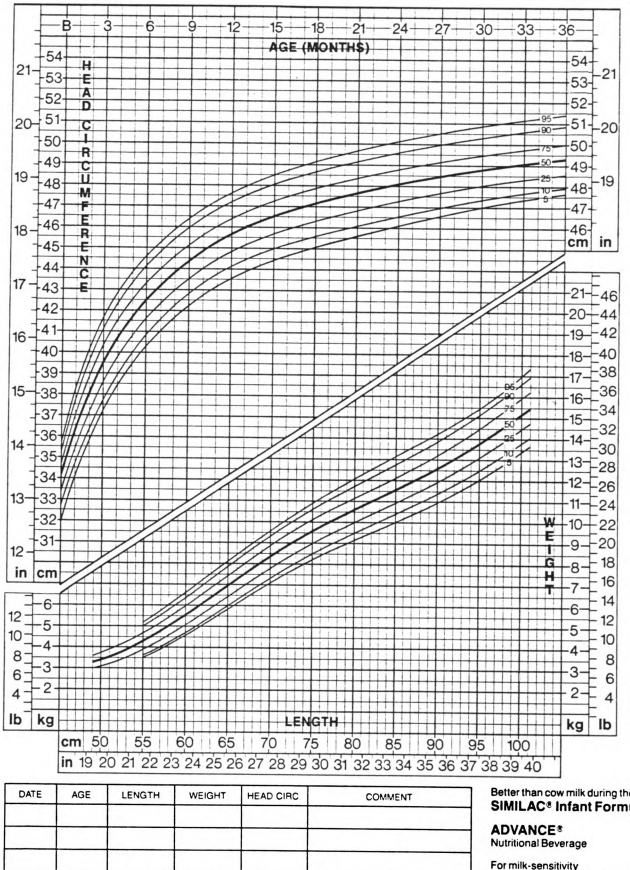
*Adapted from: Hamill PVV, Drizd TA, Johnson CL, Reed RB, Roche AF, Moore WM: Physical growth: National Center for Health Statistics percentiles. AM J CLIN NUTR 32:607-629, 1979. Data from the National Center for Health Statistics (NCHS) Hyattsville, Maryland.

GIRLS: BIRTH TO 36 MONTHS
PHYSICAL GROWTH
NCHS PERCENTILES*

NAME _____ RECORD # _____



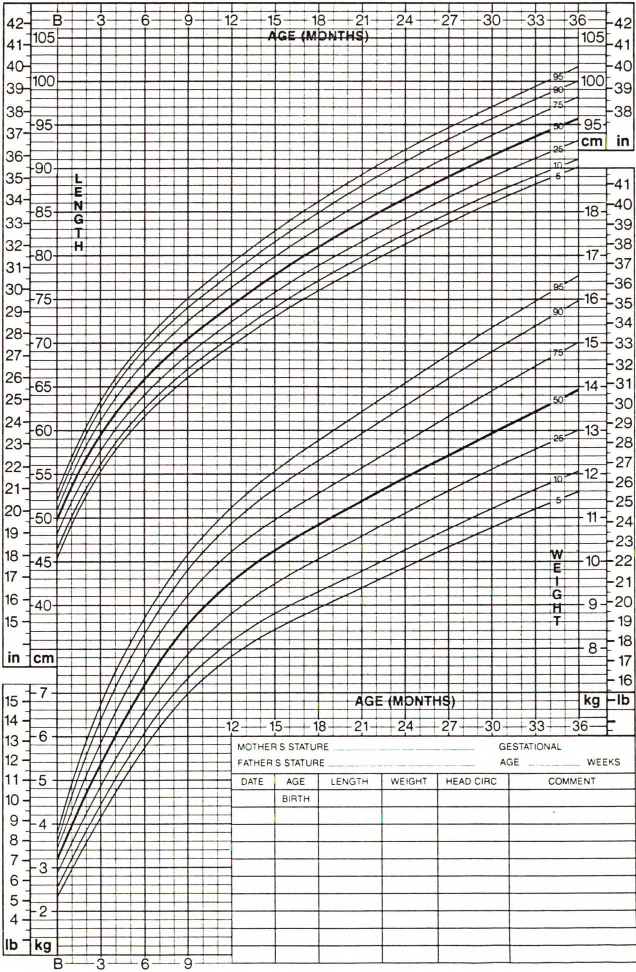
*Adapted from: Hamill PV, Drizd TA, Johnson CL, Reed RB, Roche AF, Moore WM: Physical Growth: National Center for Health Statistics percentiles. *Am J Clin Nutr* 32:607-629, 1979. Data from the Fels Research Institute, Wright State University School of Medicine, Yellow Springs, Ohio

DATE	AGE	LENGTH	WEIGHT	HEAD CIRC	COMMENT

PHYSICAL GROWTH
NCHS PERCENTILES*

NAME ______________________ RECORD # ______________

Ross Growth & Development Program



MOTHER'S STATURE ______________ GESTATIONAL

FATHER'S STATURE ______________ AGE ________ WEEKS

DATE	AGE	LENGTH	WEIGHT	HEAD CIRC	COMMENT
	BIRTH				

*Adapted from: Hamill PVV, Drizd TA, Johnson CL, Reed RB, Roche AF, Moore WM: Physical growth: National Center for Health Statistics percentiles. AM J CLIN NUTR 32:607-629, 1979. Data from the Fels Research Institute, Wright State University School of Medicine, Yellow Springs, Ohio.

SAINT LAWRENCE HOSPITAL
1210 West Saginaw Lansing, Michigan 48915 (517) 372-3610

July 30, 1984

Ms. Beverly Roberts
Department of Pediatrics
West Fee Hall
College of Osteopathic Medicine
East Lansing, Michigan 48824

Dear Ms. Roberts:

Relevant to your letter of June 29, 1984, wherein you submitted your response to the conditions for approval on your study of Non-Organic Failure to Thrive Infants. Dr. Scott Swisher, Chairman of the Hospital Research Committee and I agree that the conditions have been met; therefore, you may proceed with your research study.

If I can be of further assistance, please contact me.

Sincerely,

R. Kim Peters
Vice President for Professional Services

APPENDIX C

Instructions for Scoring the 56 Item CRPBI

Factor I, Acceptance versus Rejection (24 items)

Acceptance Sale: (16 items) - 1, 4, 8, 11, 15, 18, 22, 25, 29, 32, 36, 39, 43, 46, 50, 53.

Child Centeredness Scale: (8 items) - 2, 9, 16, 23, 30, 37, 44, 51.

Factor II, Psychological Autonomy versus Psychological Control (16 items)

Control through Guilt Scale: (8 items) - 5, 12, 19, 26, 33, 40, 47, 54.

Instilling Persistent Anxiety Scale: (8 items) - 7, 14, 21, 28, 35, 42, 49, 56.

Factor III, Firm Control versus Lax Control (16 items)

Lax Discipline Scale: (8 items) - 6, 13, 20, 27, 34, 41, 48, 55.

Nonenforcement of Rules Scale: (8 items) - 3, 10, 17, 24, 31, 38, 45, 52.

APPENDIX D

MMPI Scales, T-Test

MMPI Scales - T-Test

1=control 2=experimental

Scales		No. of Cases	Mean	Standard Deviation	Standard Error	F Value	2-tail prob.	Pooled Variance Estimate T Value	Pooled Variance Estimate Degrees of Freedom	Pooled Variance Estimate 2-tail prob.	Separate Variance Estimate T Value	Separate Variance Estimate Degrees of Freedom	Separate Variance Estimate 2-tail prob.
MA	Group 1	25	55.76	7.36	1.47	4.62	.000	-1.46	48	.152	-1.46	33.93	.155
	Group 2	25	60.84	15.81	3.16								
SI	Group 1	25	52.52	10.63	2.12	1.04	.928	-3.74	48	.000	-3.74	47.98	.000
	Group 2	25	63.68	10.44	2.08								
A	Group 1	25	44.24	8.44	1.68	2.79	.015	-3.57	48	.001	-3.57	39.25	.001
	Group 2	25	55.96	14.09	2.81								
R	Group 1	25	47.24	8.97	1.79	2.14	.068	- .23	48	.822	- .23	42.40	.822
	Group 2	25	47.96	13.13	2.62								
ES	Group 1	25	54.92	10.34	2.06	1.83	.145	2.87	48	.006	2.87	44.18	.006
	Group 2	25	44.92	13.99	2.79								
MAC	Group 1	25	52.44	10.06	2.01	3.48	.003	-2.40	48	.020	-2.40	36.73	.021
	Group 2	25	62.68	18.79	3.75								
D	Group 1	25	54.48	11.42	2.28	1.57	.279	-1.96	48	.056	-1.96	45.78	.056
	Group 2	25	61.64	14.29	2.85								
HY	Group 1	25	56.52	7.49	1.49	2.15	.166	-1.47	48	.147	-1.47	42.35	.148
	Group 2	25	60.44	10.98	2.19								

MMPI Scales - T-Test (cont)

1=control 2=experimental

Scales		No. of Cases	Mean	Standard Deviation	Standard Error	F Value	2-tail prob.	Pooled Variance Estimate T Value	Degrees of Freedom	2-tail prob.	Separate Variance Estimate T Value	Degrees of Freedom	2-tail prob.
PD	Group 1	25	59.36	9.56	1.91	1.77	.168	-1.28	48	.206	-1.28	44.54	.207
	Group 2	25	63.44	12.72	2.54								
MF	Group 1	25	45.68	9.44	1.88	1.33	.486	-2.99	48	.004	-2.99	47.04	.004
	Group 2	25	54.32	10.90	2.18								
PA	Group 1	25	59.88	7.55	1.51	2.94	.010	-1.55	48	.129	-1.55	38.61	.130
	Group 2	25	64.52	12.96	2.59								
PT	Group 1	25	54.16	6.65	1.33	3.63	.002	-2.57	48	.013	-2.57	36.30	.014
	Group 2	25	61.52	12.67	2.53								
SC	Group 1	25	56.84	7.38	1.47	5.69	.000	-2.94	48	.005	-2.94	32.18	.006
	Group 2	25	68.08	17.60	3.52								

APPENDIX E

Childrens Reports of Parental Behavior Inventory
Response to Loss Scale

Childrens Reports of Parental Behavior Inventory

Group Mean and Standard Deviations for Subfactors

Group Means	Acceptance	Childcenteredness	Control through Guilt	Instilling Anxiety	Lax Discipline	Nonenforcement of Rules
Group	CRPBF1	CRPBF2	CRPBF3	CRPBF4	CRPBF5	CRPBF6
Control	9.640	41.480	19.200	8.520	9.320	15.240
Experimental	10.560	39.320	19.200	8.280	9.320	15.360
TOTAL	10.100	40.400	19.200	8.400	9.320	15.300
Group Standard Deviations						
Control	3.352	7.789	5.923	2.647	2.096	3.550
Experimental	3.342	8.194	5.330	3.348	3.236	3.988
TOTAL	3.345	7.987	5.576	2.989	2.698	3.737

Response to Loss Scale

Group Means and Standard Deviations

Group Means	Cognitive	Emotional	Physical	Imagination	Spiritual
Group	LOSSF1	LOSSF2	LOSSF3	LOSSF4	LOSSF5
Control	8.680	9.200	1.720	2.720	2.960
Experimental	8.360	9.960	5.080	4.040	4.480
TOTAL	8.520	9.580	3.400	3.380	3.720
Group Standard Deviations					
Control	5.413	6.403	2.879	3.075	3.246
Experimental	6.224	7.839	5.353	3.888	5.470
TOTAL	5.775	7.094	4.580	3.533	4.517

APPENDIX E

Items Loading Positive for F.T.T. Mothers on the CRPBI

in Order of Discriminating Power

1. Mother has a good time at home with me.
2. If I break a promise, mother does not trust me again for a long time.
3. Mother smiles at me often.
4. Mother thinks and talks about my misbehavior long after it is over.
5. Mother worries about how I will turn out, because she takes anything bad I do seriously.
6. Mother does not check up to see whether I have done what she told me.
7. Mother says that sooner or later we always pay for bad behavior.
8. Mother enjoys going on drives, trips or visits with me.
9. Mother does not insist I obey if I complain or protest.
10. Mother often sepaks of the good things I do.
11. When I do not do as she wants, mother says I am not grateful.
12. Mother excuses my bad behavior.

APPENDIX E

Items Loading Positive for Thriving Mothers on the CRPBI

in Order of Discriminating Power

1. Mother enjoys talking things over with me.
2. Mother feels hurt by the things I do.
3. Mother will talk to me again and again about anything bad I do.
4. Mother cheers me up when I am sad.
5. Mother gives me a lot of care and attention.
6. Mother says if I loved her, I would do what she wants me to do.
7. Mother does not pay much attention to my misbehavior.
8. Mother does not insist that I do my homework.
9. Mother says that someday I will be sorry that I was not better as a child.

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